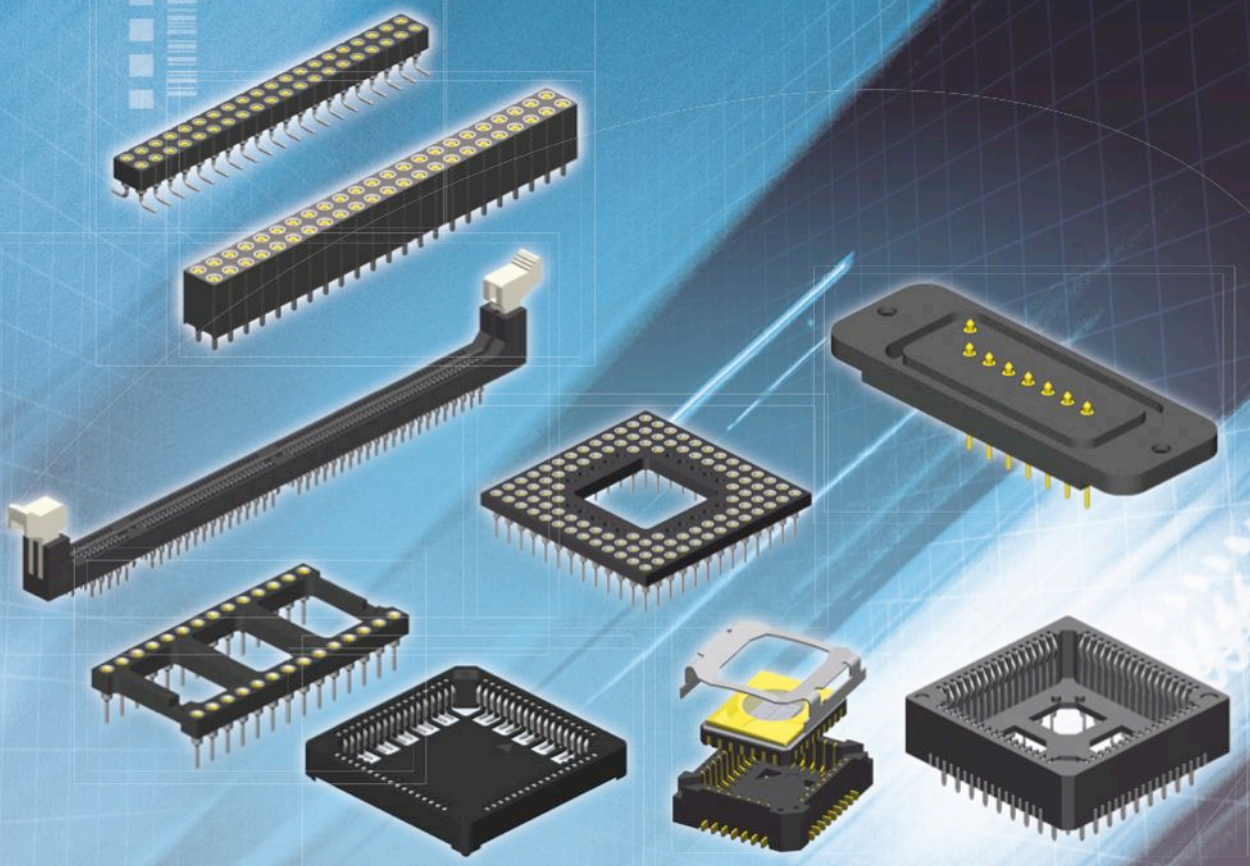
E-tec Interconnect



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IC-SOCKETS & INTERCONNECT PRODUCTS

www.e-tec.com

Swiss Manufacturing Plant

This building served for the production of Swiss precision watches for a period of 70 years.

In 1984 the facility was purchased, completely renovated and high technology fully automated production equipment was installed for the production of precision interconnection products.

In 1992 the trademark

E-tec

was registered to cover the complete interconnect product range.

As of 1993 a world-wide sales & distribution network was established to offer fast and efficient service regardless of location.

In addition to the interconnection products E-tec also supplies high quality screw machine parts as well as customized injection moulded and machined products.

Our innovative approach to new product development allows us to offer the service, quality and competitive prices our customers demand.

Whatever your requirement, be it high volume commodity product or low quantity custom special, E-tec, the “Swiss Connection” will endeavour to satisfy your requirements.

For any further details please contact E-tec or your closest sales office.

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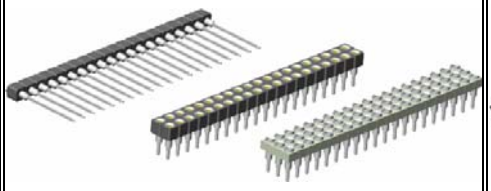
click on page numbers

THROUGH HOLE SOCKET STRIPS

Straight Socket Strips
Single-, Dual- & Triple-In-Line



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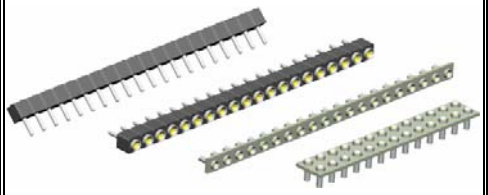
Straight Socket Strips
Low- & Super Low Profile



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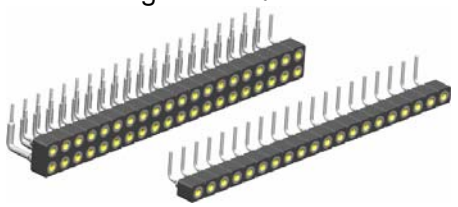
90° Socket Strips
Single- & Dual-In-Line



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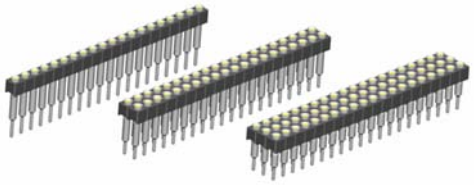
Straight Board Stacker Strips
Single-, Dual- & Triple-In-Line



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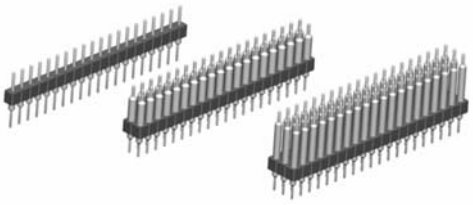
Straight Adapter Strips
Single-, Dual- & Triple-In-Line



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90° Adapter Strips
Single- & Dual-In-Line

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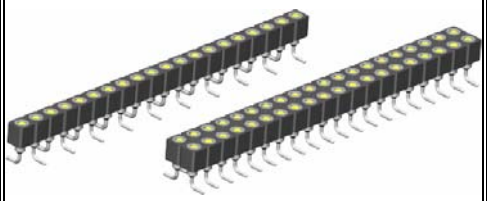
SMT SOCKET STRIPS

Single- & Dual-In-Line



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Super Low Profile

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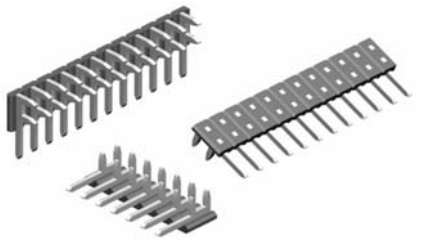
"F" – CONTACT STRIPS



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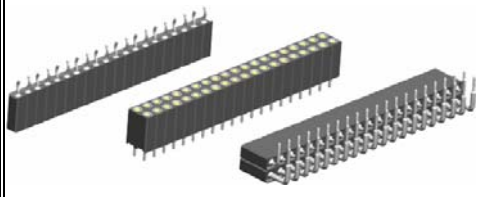
JUMBO CONTACT SOCKET & ADAPTER STRIPS

mating with 0,65x0,65mm square pins (Pin Header)

Single- & Dual-In-Line Socket
straight & 90° through hole version



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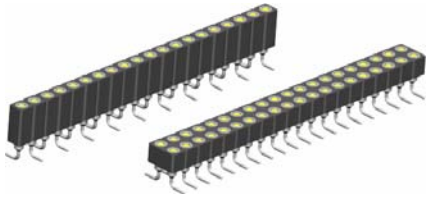
Single- & Dual-In-Line Socket
SMT version



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Single- & Dual-In-Line Adapter
straight & 90° through hole version

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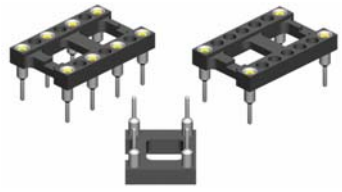
Specials

Crystal Oscillator Sockets



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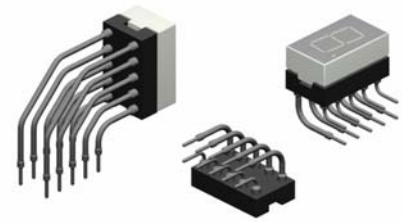
Sockets for 7-Segment LED Displays



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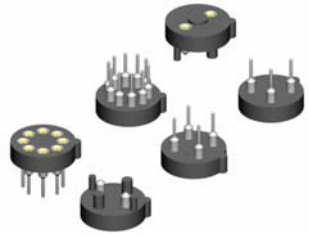
Transistor-, TO-Sockets
& Fuse Holders



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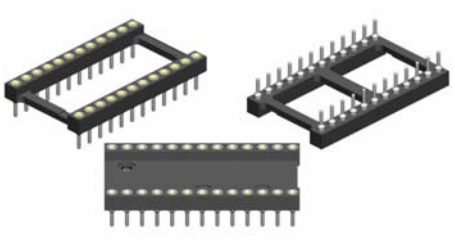
IC DIP SOCKETS THROUGH HOLE STYLE

Precision Contact
open & closed frame



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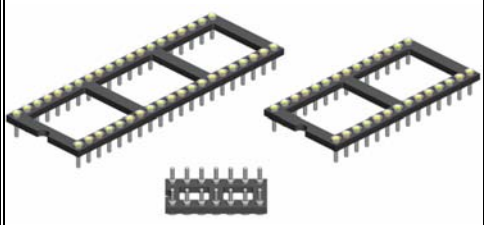
Precision Contact
Low Profile



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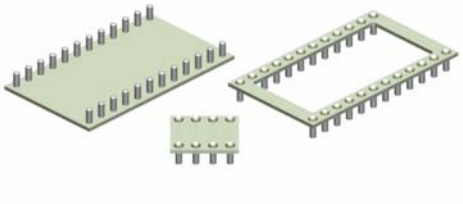
Precision Contact
Super Low Profile



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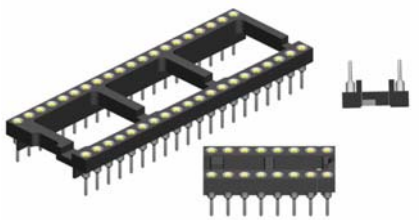
Precision Contact
Socket for automatic insertion



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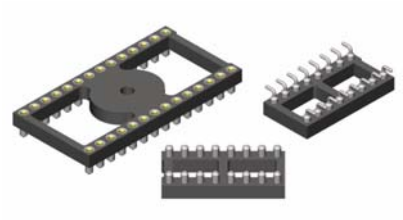
SMT Precision Contact



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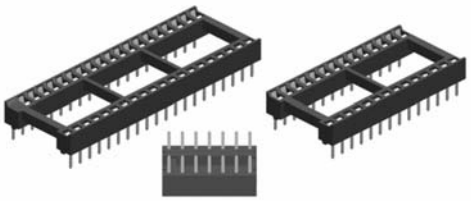
Low Cost - stamped Contact



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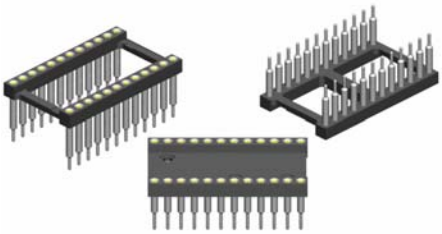
Precision Contact Board Stacker
open & closed frame



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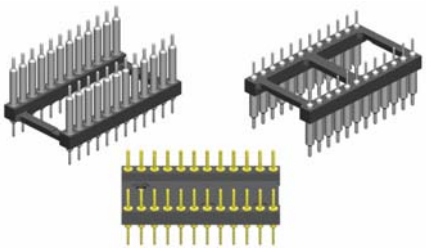
Precision Contact Board Spacer
open & closed frame



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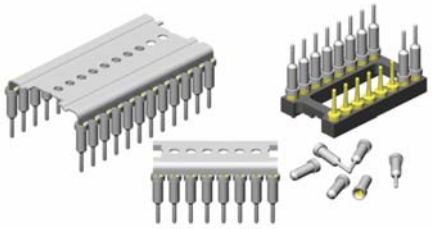
Carrier Sockets



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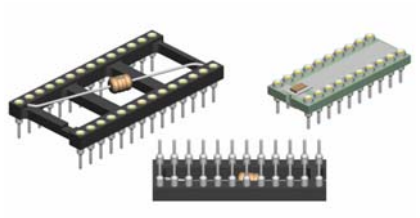
Capacitor Sockets



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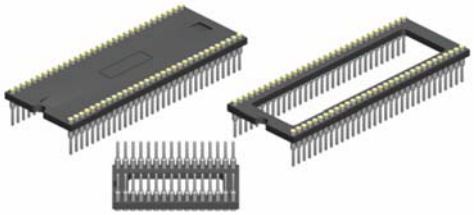
Shrink Sockets



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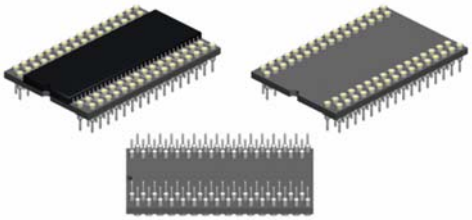
Quad-In-Line Sockets



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TOOLS

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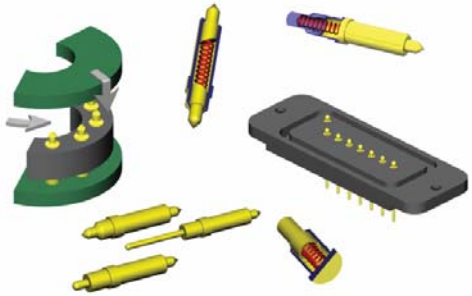
PROBE PINS
PROBE PIN CONNECTORS



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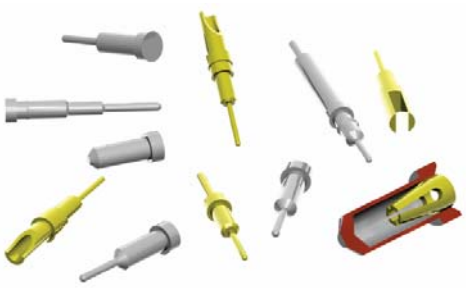
TERMINALS



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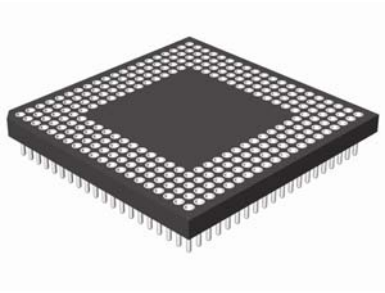
PIN GRID ARRAY SOCKETS & ADAPTERS

MiniGrid Sockets & Adapter
pitch 0.80 – 1.00 – 1.50 – 2.00mm



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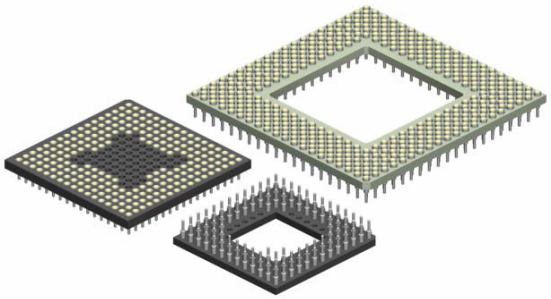
Sockets
pitch 1.27 & 2.54mm
and Interstitial (2.54mm/1.27mm)



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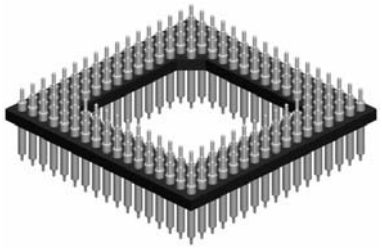
Adapter
pitch 1.27 & 2.54mm
and Interstitial (2.54mm/1.27mm)



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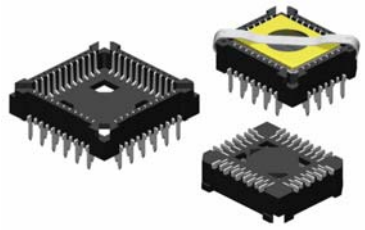
LCC & PLCC SOCKETS

Socket for LCC JEDEC Type “C”



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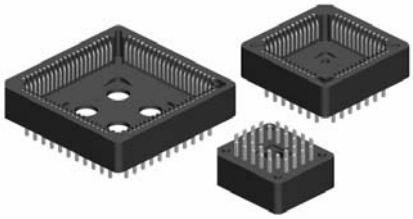
Socket for PLCC Chips
through hole “Commercial” Type



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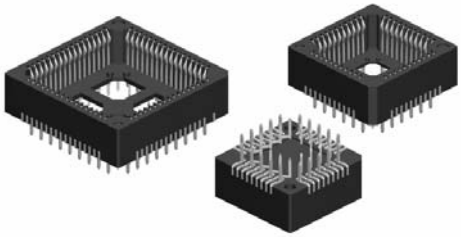
Socket for PLCC Chips
through hole “Hi-Rel” Type



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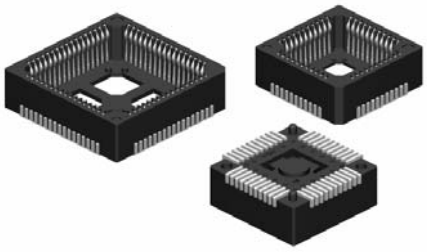
Socket for PLCC Chips
SMT “Hi-Rel” Type



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Socket for PLCC Chips
SMT “Low Profile” Type

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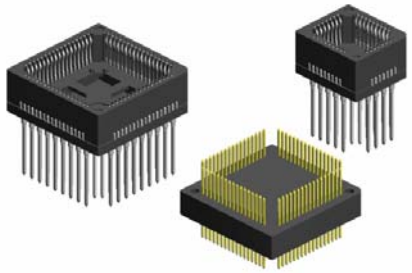
Special PLCC Parts
Adapter & Wire Wrap Adapter



Please ask E-tec for availability

SIMM SOCKETS

Vertical & 26° slanted Type
72- & 80-pin

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DIMM SOCKETS

Vertical Type
100- , 168- , 184-pin

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25° slanted Type
168-pin

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90° right angle Type
168-pin

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SIB/DIS/TIS - Series

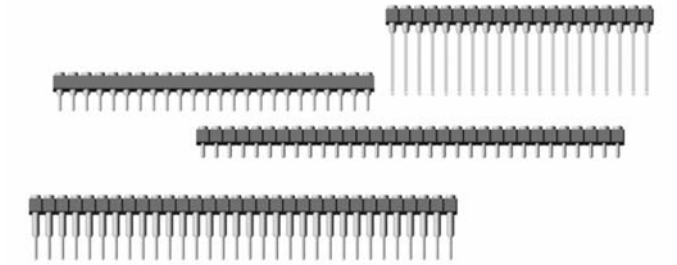
Socket Strips

2,54mm pitch

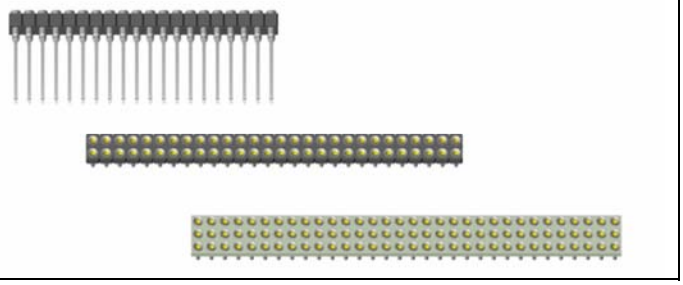
RoHS 2002/95/EC compliant

E-tec Interconnect

Single-in-line strips



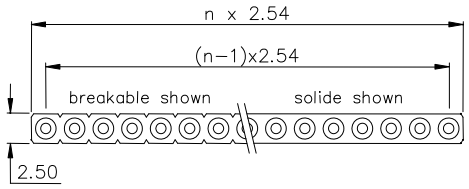
Dual- & triple-in-line strips



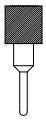
SIB Series

single-in-line Strips
breakable and solid insulator available

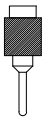
Unless otherwise specifically requested, the strips will be delivered either in solid or breakable plastic depending on availability of the insulator bodies.



"head flush"

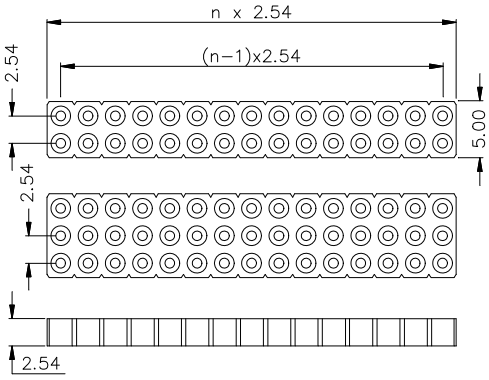


"head above"



DIS & TIS Series

dual and triple row 2,54mm grid



SIB Series

Standard "head flush"

SIB-1xx-Fxxx-xx

Alternative: "head above"

SIB-1xx-Sxxx-xx

Number of contacts standard breakable sizes

20; 32 and 40

Number of contacts either breakable or solid available

from **02** to **40**

DIS Series

DIS-2xx-Fxxx-xx

Number of contacts available

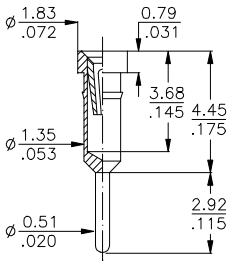
from **04** to **80**

TIS Series

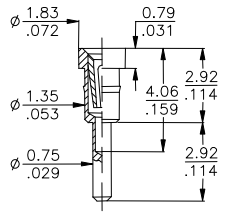
TIS-3xx-Exxx-xx

Number of contacts available

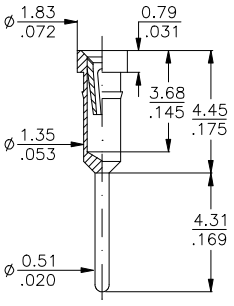
from **06** to **96**



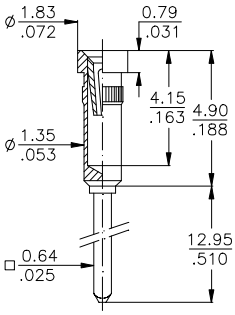
001 Standard terminal



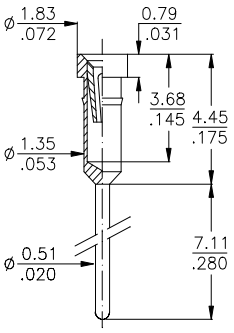
047 Low profile terminal



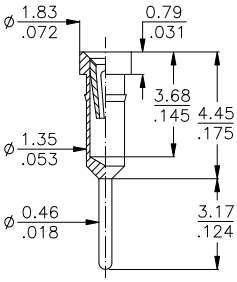
008 long tail terminal



003 3-level w/w



009 extra long tail



010 Carrier terminal

Strips

Other lengths & pin-outs available on request.

Specifications

refer to page 49 of this catalogue

Terminals

For other terminal styles please refer to the pages 46 to 48 of this catalogue or contact your closest sales office.

How to order

XXX - x xx - X xxx - xx

Series
SIB = single-in-line strips.
DIS = dual-in-line strips...
TIS = triple-in-line strips..

Rows
.....**1**
.....**2**
.....**3**

Nbr of contacts
see above table

Insulator
F = head flush
S = head above
E = Epoxy FR4 *TIS Series only*

Terminal style
see drawings above or refer to pages 46 to 48 of this catalogue for other types.

Plating
- 95 = tin/gold
- 55 = gold/gold
- 99 = tin/tin
(tin is leadfree)

SIB/DIS/TIS - Series

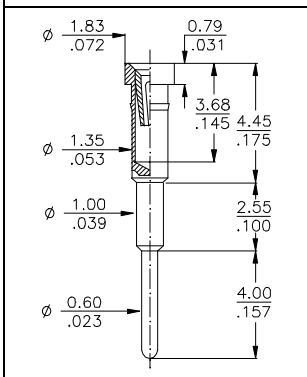
Board Stacker Strips

2,54mm pitch

RoHS 2002/95/EC compliant

E-tec Interconnect

Board Stacker Terminals



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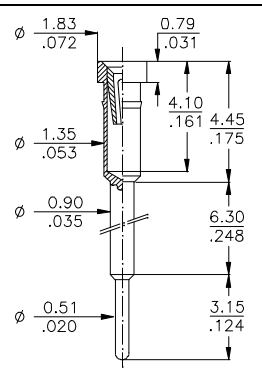
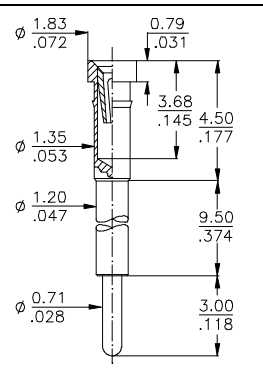
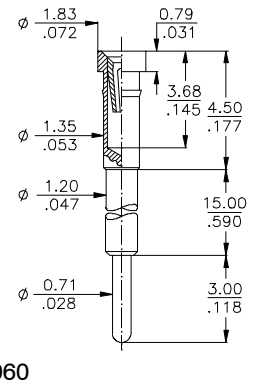


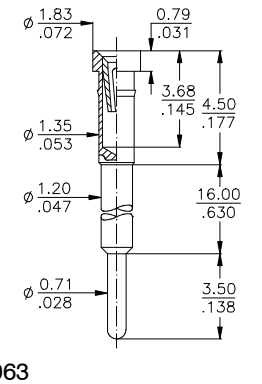
623



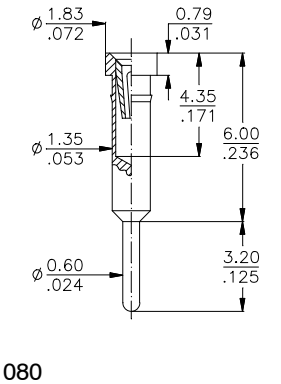
062



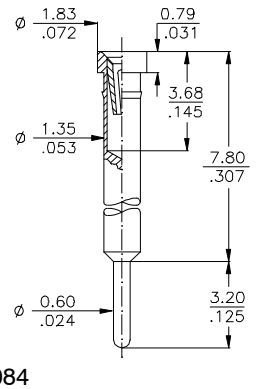
060



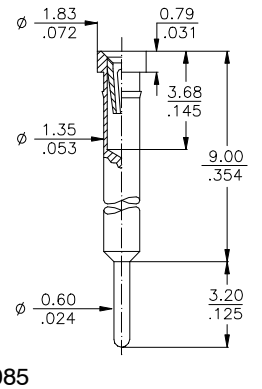
063



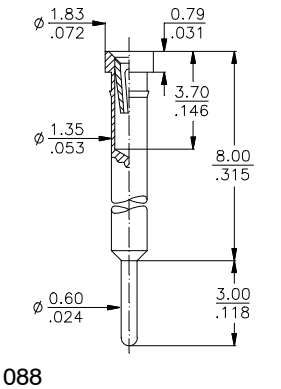
080



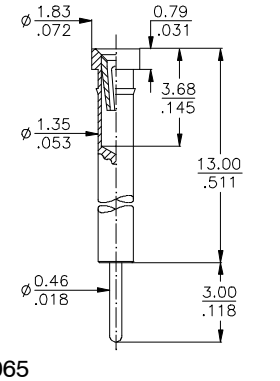
084



085

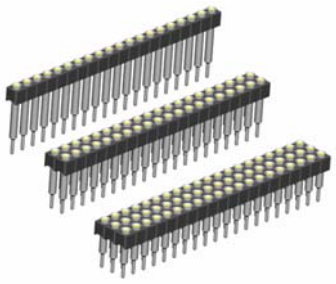


088

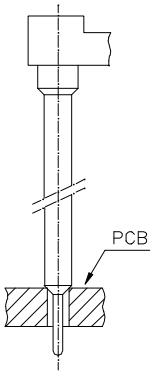


065

Many other terminals and custom specific terminal styles are available on request, or refer to the pages 46 to 48 of this catalogue.

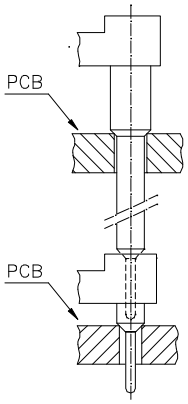


Application Examples



Possible Terminals:

060; 062; 063; 065; 079
080; 084; 085; 088; 623



Possible Terminals:

060; 062; 063; 079; 623

Specifications

See page 49 of this catalogue

How to order

XXX - x xx - X xxx - 95

Series	Rows	Nbr of contacts	Insulator	Terminal style	Plating
SIB = single-in-line strips. **DIS** = dual-in-line strips... **TIS** = triple-in-line strips..	.....**1** .....**2** **3**	1-row = 02 to 40 2-row = 04 to 80 3-row = 06 to 96	see socket strip page 5	*see drawings above or refer to pages 46 to 48 of this catalogue for other types.*	**- 95** = tin/gold *(tin leadfree)* *other on request*

SIB/DIS/TIS - Series

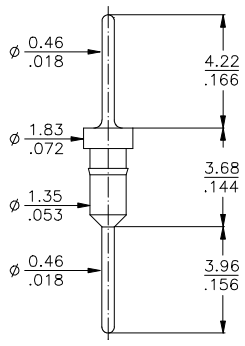
Adapter Strips

2,54mm pitch

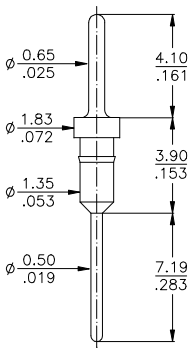
RoHS 2002/95/EC compliant

E-tec Interconnect

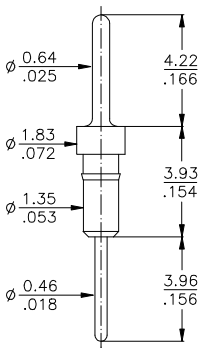
Board to Board Terminals



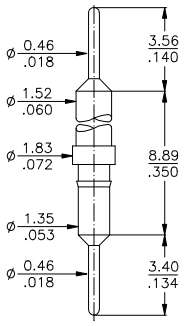
077



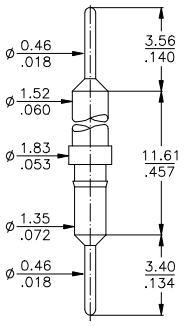
057



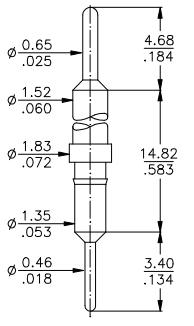
037



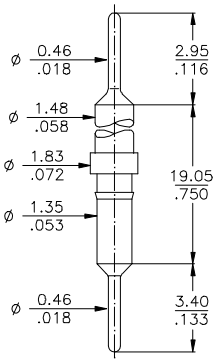
058



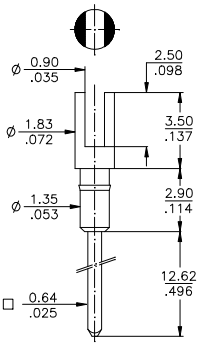
059



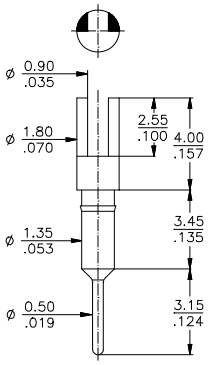
056



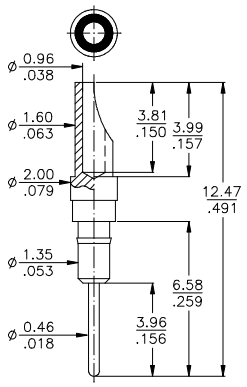
542



038

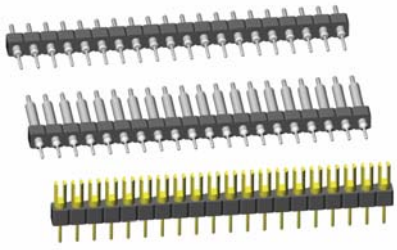


353

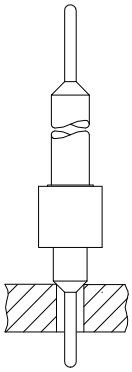


036

Many other terminals and custom specific terminal styles are available on request, or refer to the pages 46 to 48 of this catalogue.

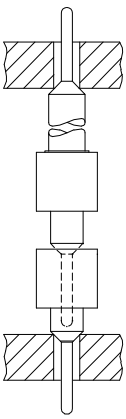


Application Examples



Possible Terminals:

037; 056; 057; 058; 059
077; 220; 542; 544
562; 583; 770



Possible Terminals:

037; 056; 057; 058; 059
077; 078; 542; 544
562; 583; 770

How to order

XXX - x xx - X xxx - xx

Series	Rows	Nbr of contacts	Insulator	Terminal style	Plating
SIB = single-in-line strips. **DIS** = dual-in-line strips... **TIS** = triple-in-line strips..	.....**1** .....**2** **3**	1-row = 02 to 40 2-row = 04 to 80 3-row = 06 to 96	**S** = Plastic **E** = Epoxy FR4 *(TIS Series only)* dimension see socket strip page 5	*see drawings above or refer to pages 46 to 48 of this catalogue for other types.*	- **55** = gold - **99** = tin *(leadfree)*

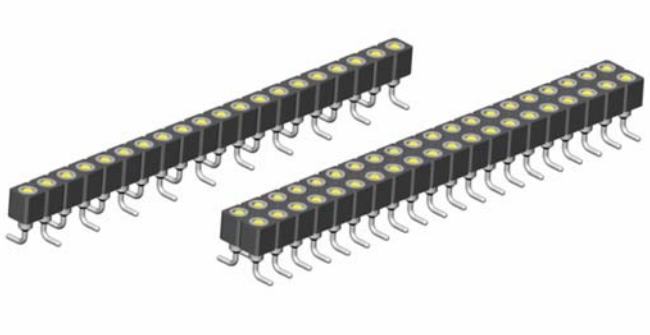
SSB/DSS - Series
SMT Socket Strips 2,54mm pitch

The 2,54mm pitch **SMT** socket strips with standard IC-Socket Precision Contacts can also be used in combination with the straight version SIB/DIS strips shown earlier in this catalogue.

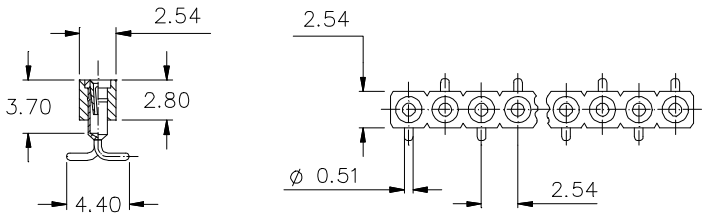
The socket strips accept round pins with a diameter of 0,41 to 0,56mm max., as well as square pins of 0,40 x 0,40mm max.

The **SMT** socket strips are available in single and dual row.

The head of the female terminal is completely embedded in the insulator.

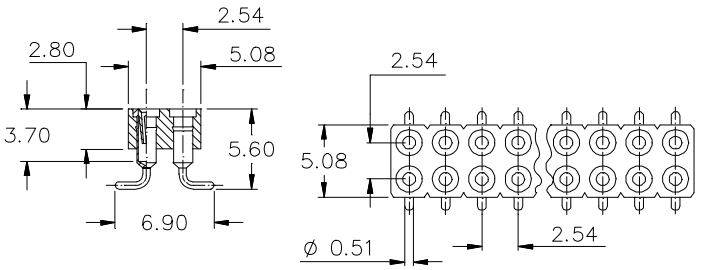


single row - SMT socket strips -



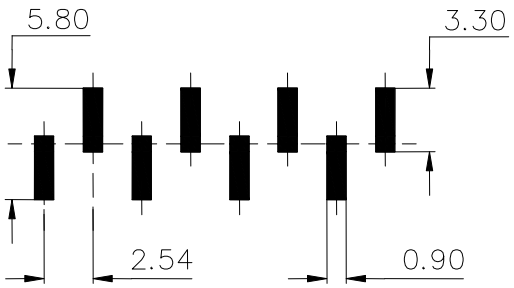
SSB - 1xx – H094 - xx

dual row - SMT socket strips -

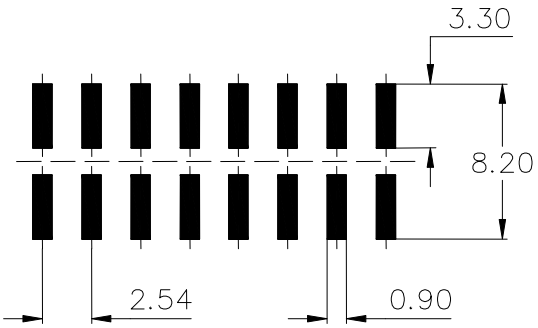


DSS - 2xx – H094 - xx

single row PCB layout



dual row PCB layout



Specifications

Mechanical data

Insertion force contact type 900	1,80 N (avg)
Extraction force contact type 900	0,90 N (avg)
Contact life	> 100 cycles
Operating temperature	-55° C to +125° C
Processing temperature	+250°C +0/-5°C for 20~40sec.

Material

Insulator *(RoHS compliant)*	high temp plastic UL 94 V-0
Terminal *(RoHS compliant)*	CuZn
Contact *(RoHS compliant)*	BeCu

Electrical data

Insulation resistance	5 x 10^9 Ω min.
Breakdown voltage	500 V AC for 1 minute
Contact resistance	4,3 mΩ typ.
Current rating	1 A max., 100V

Insertion depth contact type 900

maximum	3,68mm / .145“
minimum	2,80mm / .110“

How to order

X X X - x x x - H 094 - x x

Series			Row	Nbr of contacts			Plating		
SSB	=	single row strip…	….**1**…	…….**02**	to	**40**	**- 95**	=	tin/gold *(tin leadfree)*
DSS	=	dual row strip…….	…**2**…	…….**04**	to	**80**	**- 55**	=	gold

SIB/DIS - Series 2,54mm pitch

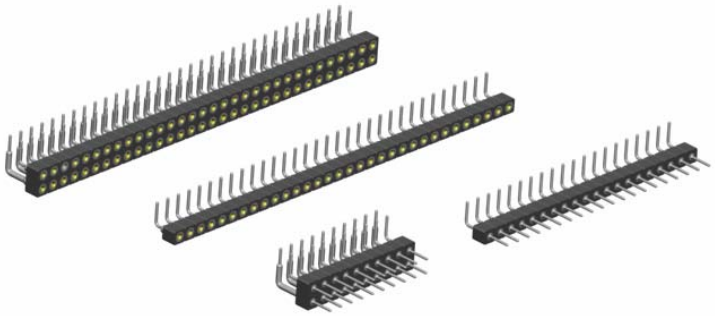
90° Socket Strips & Male Headers

The 2,54mm pitch 90° socket strips and male headers are designed for „board to board“ connections, and can also be used in combination with the straight version SIB/DIS strips shown earlier in this catalogue.

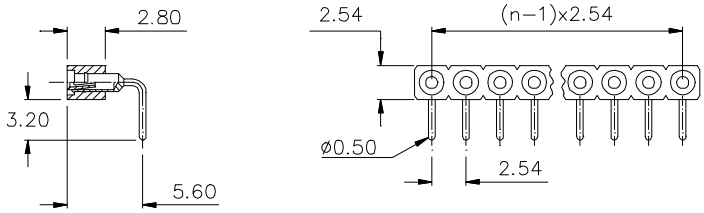
The socket strips accept round pins with a diameter of 0,41 to 0,56mm max., as well as square pins of 0,40 x 0,40mm max.

The socket strips and male headers are stackable and available in any pinout as shown in the below order code.

The head of the female terminal is completely embedded in the insulator.

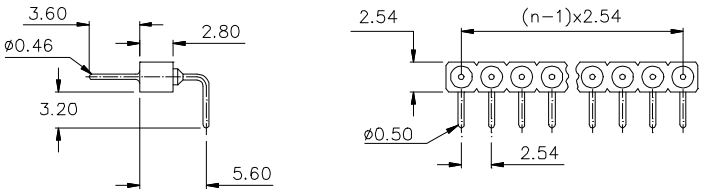


single row - socket strips -



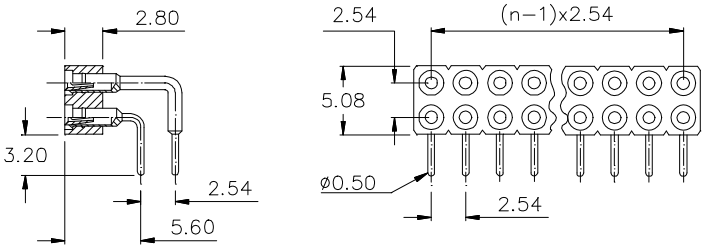
SIB - xxx - R900 - 95

single row - male header -



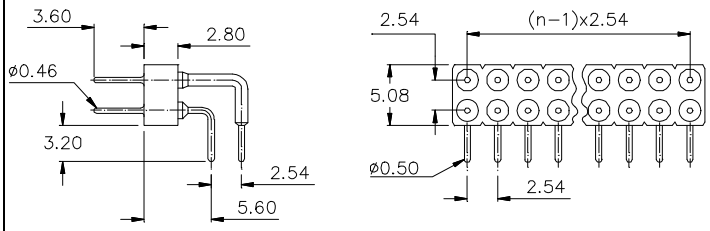
SIB - xxx - R921 - xx

dual row - socket strips -



DIS - xxx - R900 - 95

dual row - male header -



DIS - xxx - R921 - xx

Specifications

Mechanical data

Insertion force contact type 900	1,80 N (avg)
Extraction force contact type 900	0,90 N (avg)
Contact life	> 100 cycles
Operating temperature	-55° C to +125° C
Processing temperature	+250°C +0/-5°C for 20~40sec.

Material

Insulator *(RoHS compliant)*	high temp plastic UL 94 V-0
Terminal *(RoHS compliant)*	CuZn
Contact *(RoHS compliant)*	BeCu

Electrical data

Insulation resistance	5 x 10^9 Ω min.
Breakdown voltage	500 V AC for 1 minute
Contact resistance	4,3 mΩ typ.
Current rating	1 A max., 100V

Insertion depth contact type 900

maximum	3,68mm / .145“
minimum	2,80mm / .110“

How to order

XXX - x xx - R xxx - xx

Series	Row	Nbr of contacts	Contact Type	Plating
SIB = single-in-line strips	... **1**	**02** to **40** ***20, 32, 40*** *Std. breakable sizes*	**900** = female **921** = male	**Contact type „900”** - **95** = tin/gold *(tin leadfree)* **Contact type „921”** - **99** = tin *(tin leadfree)* - **55** = gold
DIS = dual-in-line strips...	... **2**	**04** to **72**		

BL - Series „Jumbo Contact“

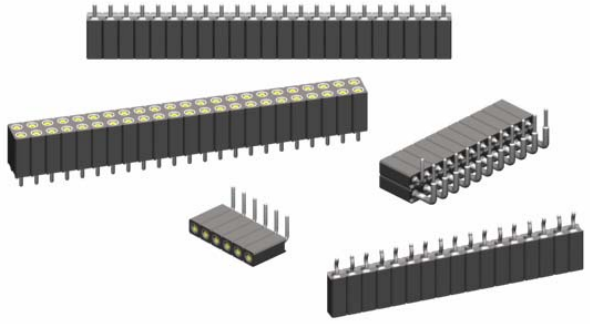
Female Headers 2,54mm pitch

2,54mm pitch female header with precision „Jumbo Contact“ for board to board connections.

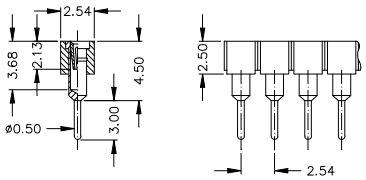
Accepts **square pins 0,65 x 0,65mm** max. (Pin Headers), as well as **round pins ∅ 0,65 to 0,85mm** max.

7,00mm standard profile, and 4.50mm low profile available, other on request.

The stand-offs underneath the insulator, prevent the header from slanting during soldering.

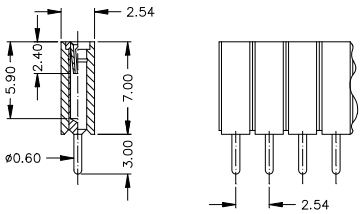


4.50mm Profile single row -straight-



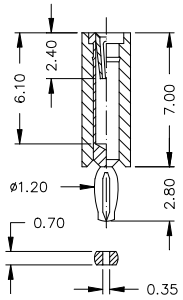
BL1 - xxx - G109 - 95

7.00mm Profile single row -straight-



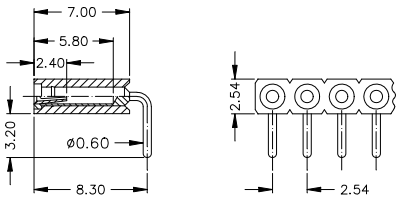
BL1 - xxx - G700 - 95

Other available Terminals



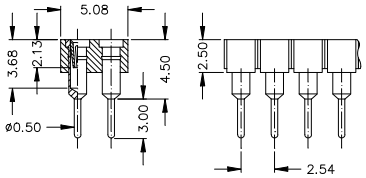
G065P ***press fit type***
For PCB thickness 1.50 to 2.00mm;
plated-thru holes: ∅0,94 to 1,09mm

single row -right angle-



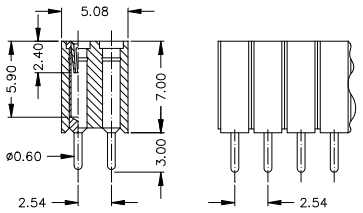
BL1 - xxx - A700 - 95

4.50mm Profile dual row -straight-

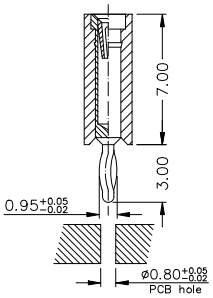


BL2 - xxx – G109 - 95

7.00mm Profile dual row -straight-

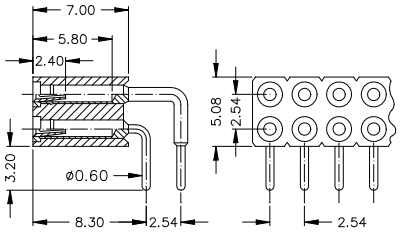


BL2 - xxx - G700 - 95



G799 ***Clinched type***
off G700
only for BL1 Series available

dual row -right angle-



BL2 - xxx - A700 - 95

Specifications

Mechanical data

Insertion force (test probe ∅ 0,66)		1,40 N (avg) if A700, G700 & G109 2,00 N (avg) if G065P 3,75 N (avg) if G799
Extraction force (test probe ∅ 0,66)		0,25 N (avg) if A700, G700 & G109 1,00 N (avg) if G065P & G799
Contact life		> 100 cycles
Operating temperature		-55° C to +125° C
Material		
Insulator	*(RoHS compliant)*	high temp plastic UL 94 V-O
Terminal	*(RoHS compliant)*	CuZn
Contact	*(RoHS compliant)*	BeCu

Electrical data

Insulation resistance	10^4 MΩ min.
Breakdown voltage	500 V AC for 1 minute
Contact resistance	30 mΩ / contact max.
Current rating	3 A max., 100V
Insertion depth	
maximum	depends on the Terminal style
minimum	4,00mm / .157“

How to order

BLx - xxx - X xxx - 95

Series
BL1 = single row..
BL2 = dual row....

Nbr of contacts
.....**002** to **050**
*Note: **002** to **040** only available for G109 series*
.....**004** to **100**
*Note: **004** to **080** only available for G109 series*

Connector style
G = straight
A = right angle

Terminal Type
pls. ref. to the drawings shown above
“press fit” = 065P and *“clinched”* type = 799
not available for the **A** = right angle style

Plating
- 95 = tin/gold *(tin leadfree)*
others on request

BS - Series „Jumbo Contact“

SMT Female Headers 2,54mm pitch

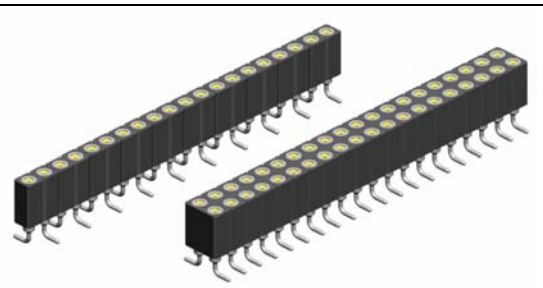
RoHS 2002/95/EC compliant

E-tec Interconnect

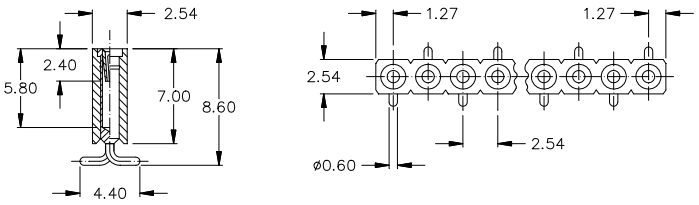
2,54mm pitch **SMT** female header with precision „Jumbo Contact“ for board to board connections.

Accepts square pins 0,65 x 0,65mm max. (Pin Headers), as well as round pins ∅ 0,65 to 0,85mm max.

The female headers are available in any number of contacts, up to a maximum of 50 for the single row, and 100 for the double row.

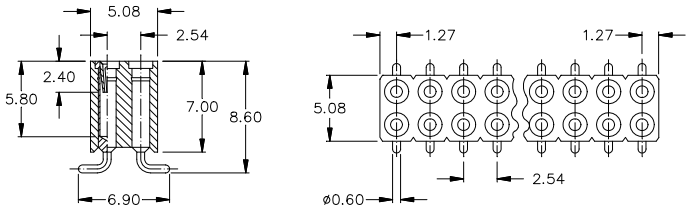


single row



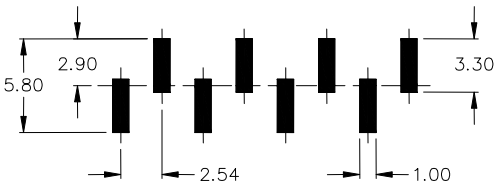
BS1 - xxx - G860 - 95

dual row

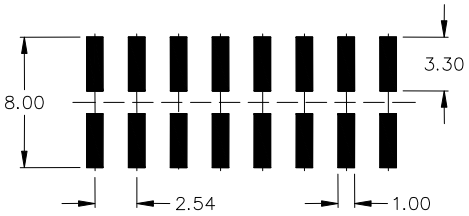


BS2 - xxx - G860 - 95

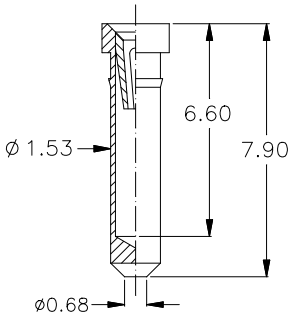
single row PCB layout



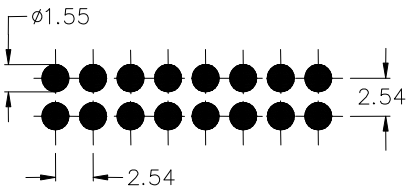
dual row PCB layout



other available SMT Terminal



Only for dual row **702**



Specifications

Mechanical data

Insertion force (test probe ∅ 0,66)		2,00 N if Terminal 860
Extraction force (test probe ∅ 0,66)		1,00 N for all Terminals
Contact life		> 100 cycles
Operating temperature		-55° C to +125° C
Processing Temperature		+250°C +0/-5°C for 20~40sec.

Material

Insulator	*(RoHS compliant)*	high temp plastic UL 94 V-O
Terminal	*(RoHS compliant)*	CuZn
Contact	*(RoHS compliant)*	BeCu

Electrical data

Insulation resistance	10^4 MΩ min.
Breakdown voltage	500 V AC for 1 minute
Contact resistance	30 mΩ / contact max.
Current rating	3 A max., 100V

Insertion depth

maximum	depends on the Terminal style
minimum	4,0mm / .157“

How to order

B S x - x x x - G x x x - x x

Series	**Nbr of contacts**	**Connector style**	**Terminal Type**	**Plating**
BS1 = single row..	..... **002** to **050**	**G** = straight	pls. ref. to the drawings shown above	**- 95** = tin/gold *(tin leadfree)*
BS2 = double row.	..... **004** to **100**			*others on request*

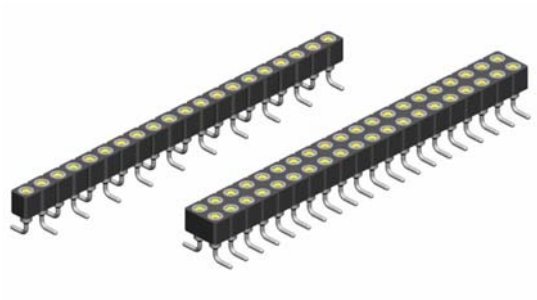
BS - Series „Jumbo Contact“ low profile

SMT Female Headers 2,54mm pitch

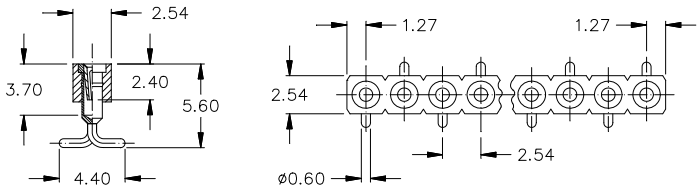
2,54mm pitch **“low profile”** SMT female header with precision „Jumbo Contact“ for board to board connections.

Accepts square pins 0,65 x 0,65mm max. (Pin Headers), as well as round pins ∅ 0,65 to 0,85mm max.

The female headers are available with 40 contacts max. for the single row, and 80 (2x40) max. for the dual row.

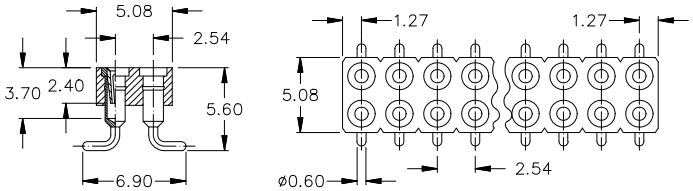


single row “low profile”



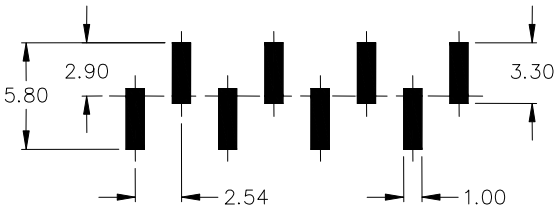
BS1 - xxx - G560 - 95

dual row “low profile”

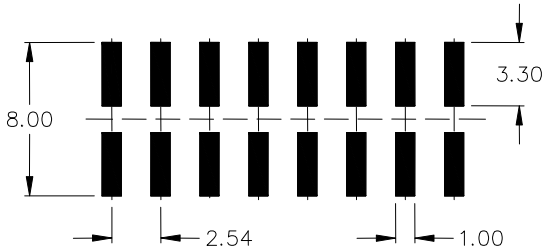


BS2 - xxx - G560 - 95

single row PCB layout



dual row PCB layout



Specifications

Mechanical data

Insertion force	1,40 N (avg) (test probe ∅ 0,66)
Extraction force	0,25 N (avg) (test probe ∅ 0,66)
Contact life	> 100 cycles
Operating temperature	-55° C to +125° C
Processing Temperature	+250°C +0/-5°C for 20~40sec.

Material

Insulator	*(RoHS compliant)*	high temp plastic UL 94 V-O
Terminal	*(RoHS compliant)*	CuZn
Contact	*(RoHS compliant)*	BeCu

Electrical data

Insulation resistance	10^4 MΩ min.
Breakdown voltage	500 V AC for 1 minute
Contact resistance	30 mΩ / contact max.
Current rating	3 A max., 100V

Insertion depth

maximum	3.70mm / .146”
minimum	3.00mm / .118“

How to order

BSx - xxx - G 560 - 95

Series	Nbr of contacts	Connector style	Terminal Type	Plating
BS1 = single row..	……..**002** to **040**	**G** = straight	pls. ref. to the drawings shown above	**- 95** = tin/gold *(tin leadfree)*
BS2 = dual row….	……..**004** to **080**			*others on request*

SL - Series „Jumbo“ Male Headers

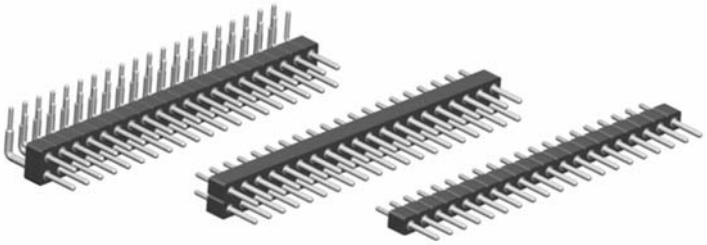
2,54mm pitch

2,54mm pitch male header with precision turned „Jumbo“ pin, ∅ 0,76mm / .030“, for board to board connections.

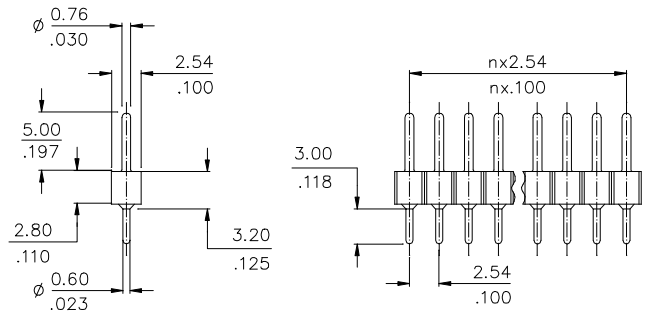
Mates with the „Jumbo Contact“ female headers shown in this catalogue.

The pin headers are stackable and available in single and double row version.

The pins are either completely gold or tin plated.

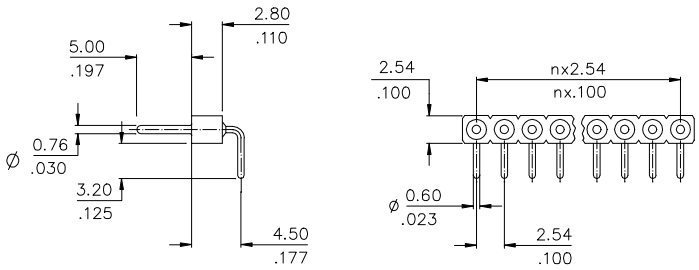


single row -straight-



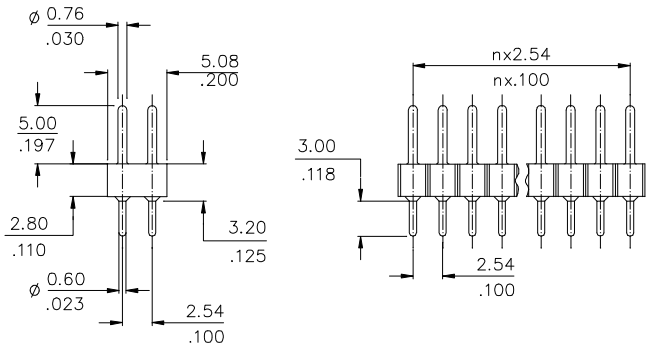
SL1 - xxx - G379 - xx

single row -right angle-



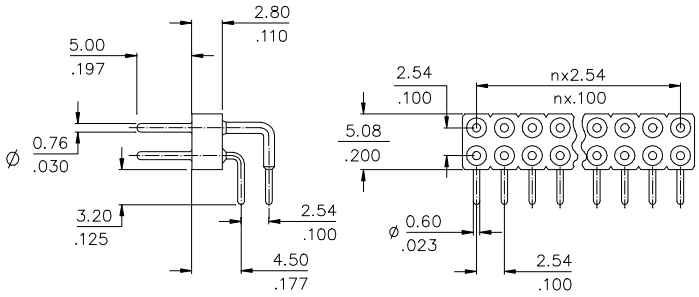
SL1 - xxx - A379 - xx

dual row -straight-



SL2 - xxx - G379 - xx

dual row -right angle-



SL2 - xxx - A379 - xx

Specifications

Material

Insulator	*(RoHS compliant)*	high temp plastic UL 94 V-O
Terminal	*(RoHS compliant)*	CuZn
Operating temperature		-55° C to +125° C

Electrical data

Insulation resistance	10^4 MΩ min.
Breakdown voltage	500 V AC for 1 minute
Rated voltage	60 V RMS / 90 V DC
Contact resistance	30 mΩ / contact max.
Current rating	3 A max.

How to order

SLx - xxx - X 379 - xx

Series

SL1 = single row.....

SL2 = dual row.....

Nbr of contacts

.....**002** to **040**

064 on request only

....**004** to **080** (straight style)

....**004** to **072** (right angle style)

Terminal style

G = straight

A = right angle

Plating

- 99 = tin *(tin leadfree)*

- 55 = gold

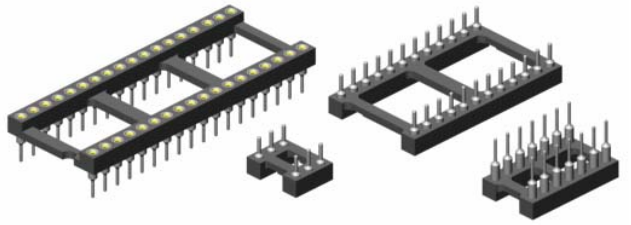
POS/POO/PCL - Series

Precision DIP Sockets 2,54mm pitch

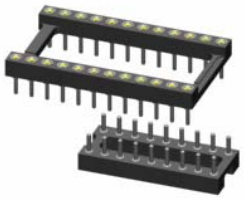
RoHS 2002/95/EC compliant

E-tec Interconnect

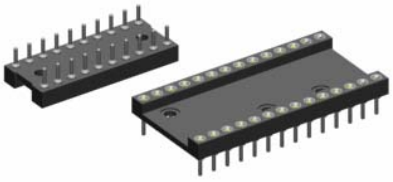
Standard DIP sockets - open frame
POS Series



Open frame w/o centre bars & closed frame sockets
POO Series



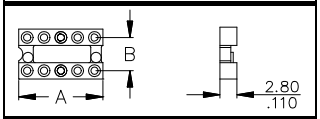
PCL Series

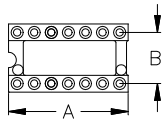


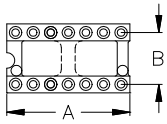
Series POS & POO

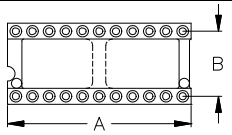
- open body with and without centre bars -

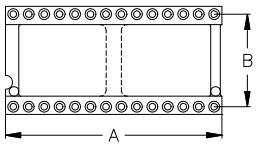
If you need all Insulator Dimension pls. ask for customer drawing!

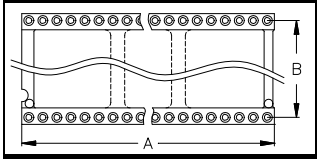






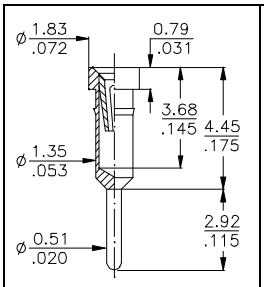




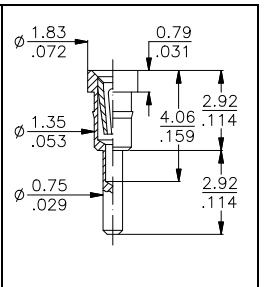


POS sockets in 7,62mm/.300" DIP spacing are either supplied with or without bars in the centre depending on plastic wafer availability. If you need sockets without centre bars, then please always order with POO instead of POS.

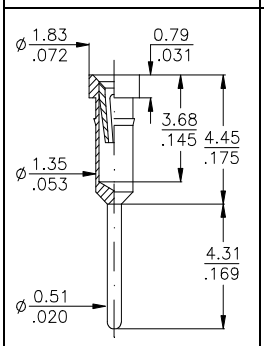
Pin	Dimension		Available Pinouts of Series		
	"A"	"B"	POS	POO	PCL
10	12,60	5,08 .200"	**-**	**-**	**-210-**
6	7,60	7,62 .300"	**-306-**	**-**	**-**
8	10,10		**-308-**	**-**	**-**
10	12,60		**-310-**	**-**	**-**
14	17,70		**-314-**	**-314-**	**-314-**
16	20,30		**-316-**	**-316-**	**-316-**
18	22,80	7,62 .300"	**-318-**	**-318-**	**-318-**
20	25,30		**-320-**	**-320-**	**-320-**
22	27,80		on request	on request	**-**
24	30,40		**-324-**	**-324-**	**-**
28	35,50		**-328-**	**-328-**	**-**
16	20,32	10,16 .400"	**on request**	**on request**	**on request**
22	27,80				
24	30,60				
24	30,50	15,24 .600"	**-624-**	**-624-**	on request
28	35,50		**-628-**	**-628-**	**-628-**
32	40,60		**-632-**	**-632-**	**-632-**
36	45,70		**-636-**	on request	**-**
40	50,80		**-640-**	**-640-**	**-640-**
48	60,96		**-648-**	on request	on request
64	81,26	22,86 .900"	**on request**	**-**	**-**



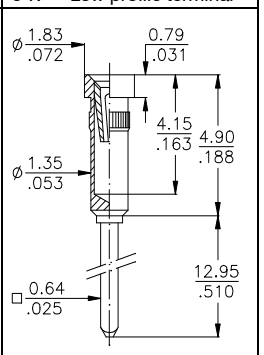
001 Standard terminal



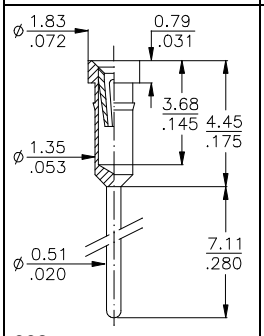
047 Low profile terminal



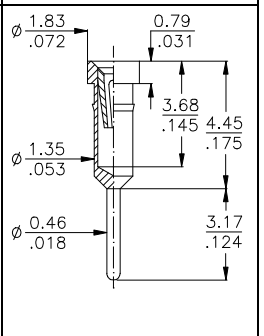
008 long tail terminal



003 3-level w/w



009 extra long tail terminal



010 Carrier terminal

Specifications

PBT and high temp plastic depending on type.
See page 49 of this catalogue and contact factory for more details.

Insulator body

POS series = open insulator - see drawings above
POO series = open insulator w/o centre bars
PCL series = closed insulator body

Terminals

*The **POS**, **POO** and **PCL** series are available with many different terminal styles. The most common terminal styles are shown on the right hand side of this page. Many other additional terminals can be found at the end of this catalogue. Custom design terminals are available on request.*

How to order

XXX - x xx - S xxx - xx

Series
POS
POO
PCL

DIP spacing (inch)
see above table, dimension "B"
Example: **3** for .300"

Nbr of contacts
see above table
Example: **06** for 6 Pin

insert the corresponding data of the POS, POO or PCL column

Terminal style
see drawings above or refer to pages 46 to 48 of this catalogue for other types.

Plating
- **95** = tin/gold
- **55** = gold/gold
- **99** = tin/tin

(tin leadfree)

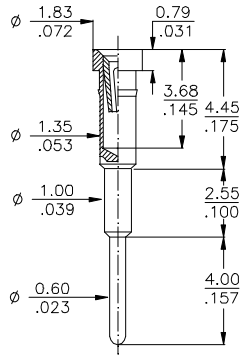
POS/POO/PCL - Series

Board Stacker Sockets 2,54mm pitch

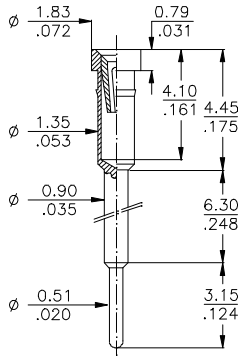
RoHS 2002/95/EC compliant

E-tec Interconnect

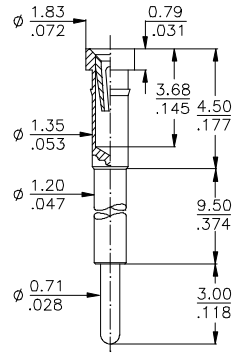
Board Stacker Terminals



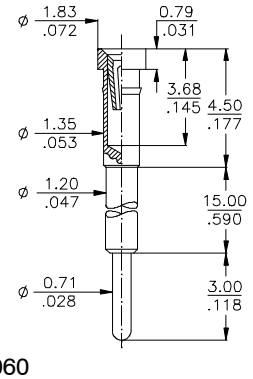
079



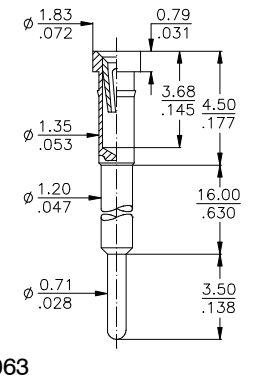
623



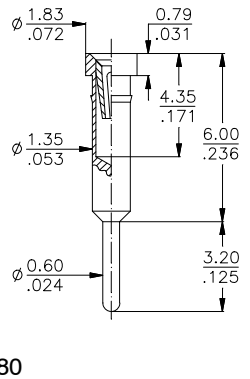
062



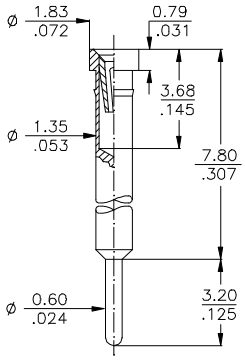
060



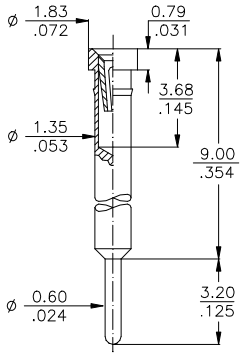
063



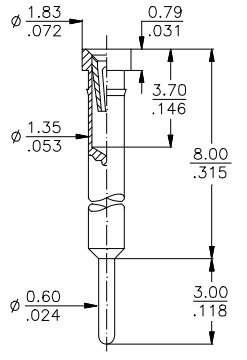
080



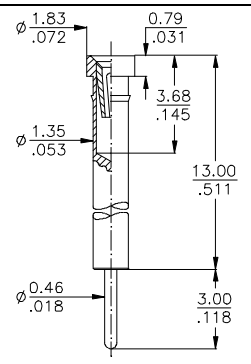
084



085

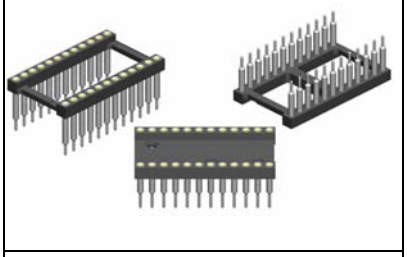


088

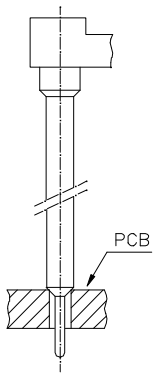


065

Many other terminals and custom specific terminal styles are available on request, or refer to the pages 46 to 48 of this catalogue.

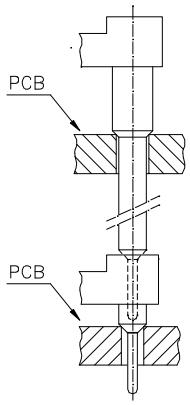


Application Examples



Possible Terminals:

060; 062; 063; 065; 079
080; 084; 085; 088; 623



Possible Terminals:

060; 062; 063; 079; 623

Specifications

See page 49 of this catalogue

How to order

XXX - x xx - S xxx - xx

Series	DIP spacing	Nbr of contacts	Terminal style	Plating
POS **POO** **PCL** see page 14	in inch refer to table, dimension "B" on page 14	refer to table on page 14	*see drawings above or refer to pages 46 to 48 of this catalogue for other types.*	**- 95** = tin/gold *(tin leadfree)* *other on request*
	insert the corresponding data of the POS, POO or PCL column			

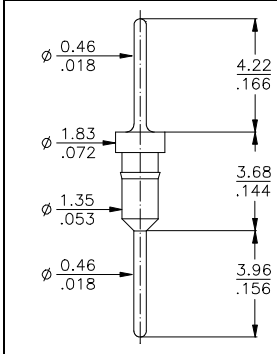
POS/PCL - Series

DIP Board Spacer 2,54mm pitch

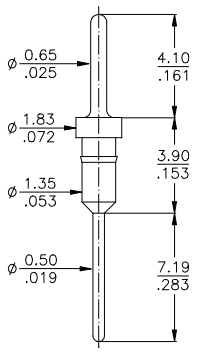
RoHS 2002/95/EC compliant

E-tec Interconnect

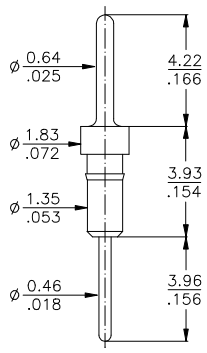
Board to Board Terminals



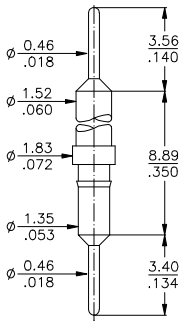
077



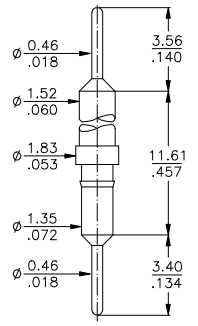
057



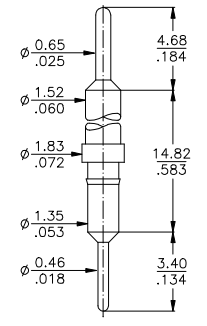
037



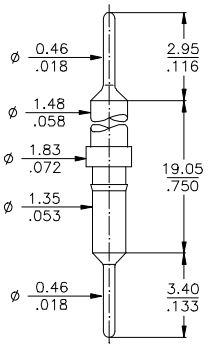
058



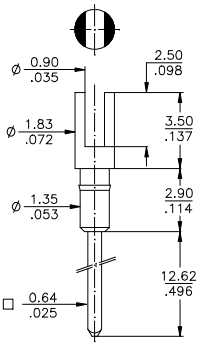
059



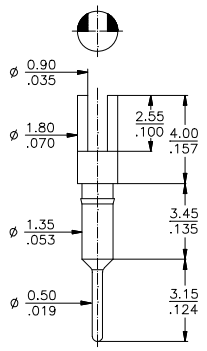
056



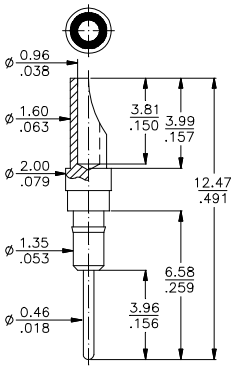
542



038

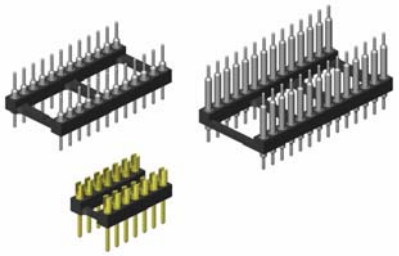


353

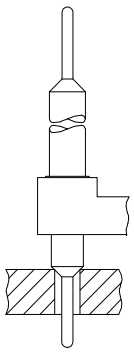


036

Many other terminals and custom specific terminal styles are available on request, or refer to the pages 46 to 48 of this catalogue.

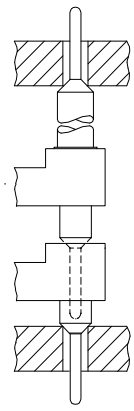


Application Examples



Possible Terminals:

037; 056; 057; 058; 059; 077
220; 221; 542; 543; 544; 562
770



Possible Terminals:

037; 056; 057; 058; 059
077; 542; 544; 562; 770

Specifications

See page 49 of this catalogue

How to order

XXX - x xx - Sxxx - xx

Series
POS
PCL
see page 14

DIP spacing
in inch
refer to table, dimension "B" on page 14

Nbr of contacts
refer to table on page 14

insert the corresponding data of the POS, POO or PCL column

Terminal style
see drawings above or refer to pages 46 to 48 of this catalogue for other types.

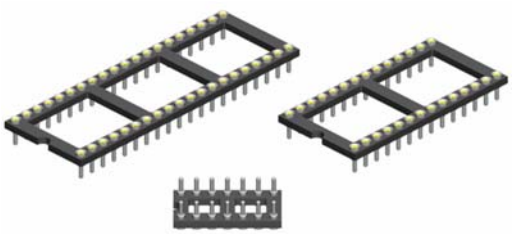
Plating
- 55 = gold
- 99 = tin (tin leadfree)

LOP/SLP - Series 2,54mm pitch
"low profile" Sockets & Strips

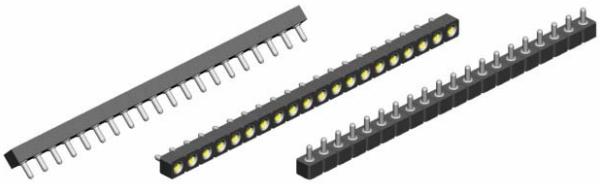
RoHS 2002/95/EC compliant

E-tec Interconnect

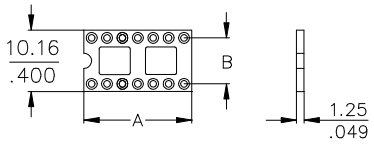
Low profile DIP sockets LOP Series
height above PCB 2.41mm / .095"

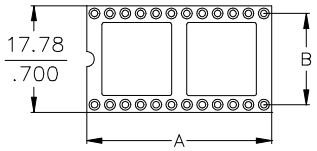


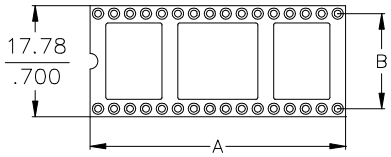
Low profile strips SLP Series
height above PCB 2.41mm / .095"

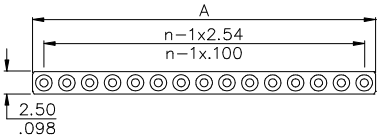


Insulator









Pin	Dimensions mm/inch "A"	"B"	Ordering Code
14	17,78/.700	7,62 .300	LOP - 314 - S083 - 95
16	20,32/.800		LOP - 316 - S083 - 95
18	22,86/.900		LOP - 318 - S083 - 95
20	25,40/1.000		LOP - 320 - S083 - 95
24	30,48/1.200		LOP - 324 - S083 - 95
24	30,48/1.200	15,24 .600	LOP - 624 - S083 - 95
28	35,56/1.400		LOP - 628 - S083 - 95
32	40,64/1.600	15,24 .600	LOP - 632 - S083 - 95
40	50,80/2.000		LOP - 640 - S083 - 95
10	25,40/1.000		SLP - 110 - S083 - 95
14	35,56/1.400		SLP - 114 - S083 - 95

Other sizes and flush head version on request

Pin-outs

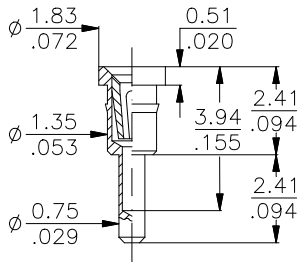
Other pin-outs available on request.

Despite the very low profile of these sockets the IC legs can be inserted completely.

Recommended PCB Layout

Recommended drilling hole dia ∅ 0,8mm/.031"

Low Profile Terminal



083 2.41mm / .095" over PCB

Plating

Standard:

- 95 = tin/gold *(tin leadfree)*

Alternative

- 55 = gold/gold
- 99 = tin/ tin *(leadfree)*

Specifications

Mechanical data

Insertion force	1,80 N (avg)
Extraction force	0,90 N (avg)
Contact life	> 100 cycles
Solderability	as per IEC 60068-2-58
Contact security:	
-Vibration	as per EN60352-4
-Shock	as per EN60352-4

Material

Insulator *(RoHS compliant)*	PBT UL 94 V-0
Terminal *(RoHS compliant)*	CuZn
Contact *(RoHS compliant)*	BeCu

Electrical data

Contact resistance at 1A	4,3 mΩ typ.
Current rating	1A max., 100V
Contact capacitance at 1MHz	2 pF max.
Insulation resistance at 500V DC	5 ×10⁹ Ω min.
Breakdown voltage at 60 Hz	500 V AC
Contact resistance	≤7 mΩ
Operating temperature	-55° C to +125° C
Pitch	2,54 mm (.100")

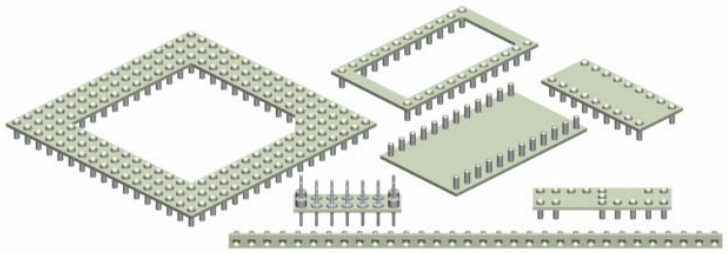
More information, for example about testresult please ref. to page 49 or contact E-tec.

Super Low Profile Sockets & Adapters

RoHS 2002/95/EC compliant

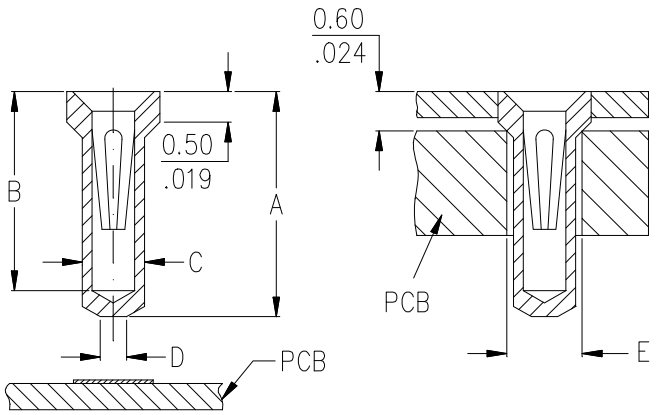
E-tec Interconnect

E-tec's super low profile sockets and adapters are designed for use in applications where height above board is most critical.
The sockets have a profile of 0,60mm above board and they can be combined with the adapters to achieve a board to board interconnection height of 2,20mm max.
Also available in this socket range are the ultra low profile SMT sockets with a height above board of only 3,45mm.



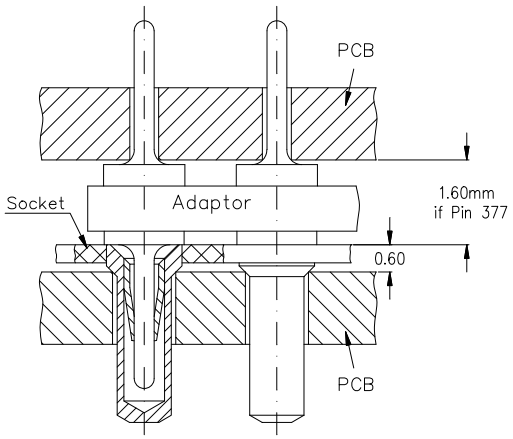
Super Low Profile Sockets

SMT use | through hole use

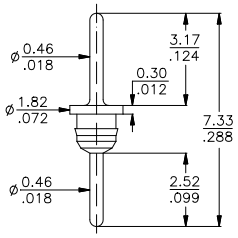


Terminal style	DIM "A"	DIM "B"	DIM "C"	DIM "D"	DIM "E"
144	3,45/.136	3,05/.120	0,94/.037	0,45/.018	1,15/.045

Super Low Profile Adapters



Adapter Pin



Style 377

Specifications

Mechanical data

Force per contact (avg)	0,70N insertion / 0.25N extraction
Contact life	>50 cycles min.
Solderability	as per IEC 60068-2-58

Material

Terminal *(RoHS compliant)*	BeCu
Insulator *(RoHS compliant)*	Glass Epoxy FR4

Electrical data

Breakdown voltage at 60 Hz	500 V AC
Contact resistance at 1A	4,3 mΩ typ
Insulation resistance	5×10^9 Ω min.
Current rating	1A max., 100V
Capacitance	2 pF max.
Operating temperature	–55 °C to +125 °C

How to order

XXX - x xx - E xxx (-xxX) - xx (/x)

Series

- **LSP** = DIP sockets
- **SSP** = SIP sockets
- **DSP** = 2-row SIP´s
- **PGS** = PGA sockets
- **ZZS** = Zig-Zag sockets

DIP spacing / Nbr of contacts

see pages

- for LSP series: POS
- for SSP series: SIB/SIS
- for DSP series: DIS
- for ZZS series: ZZP
- for PGS series: PGA (only nbr of contacts)

Terminal styles

See drawings above for 2,54mm and 2,00mm pitch.

For 1,27mm pitch please contact nearest sales office.

Plating

- **- 95** = tin/gold *(tin leadfree)* *(not available for adapter terminals)*
- **- 55** = gold/gold
- **- 99** = tin/tin *(leadfree)*

Pitch

Complete with

- **1** = 1,27mm
- **2** = 2,00mm

2.54mm pitch is standard.

Others available on request

Grid size & Configuration code *only for PGA sockets*

Please refer to PGA socket pages 29 to 31

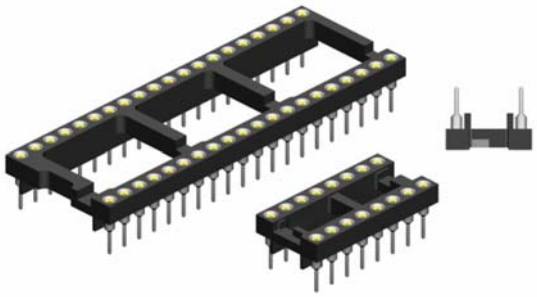
POA - Series 2,54 mm pitch

IC Sockets for Automatic Insertion

The terminals can be bent before and cut after the soldering process.

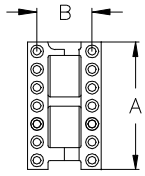
Open frame sockets with rails under the plastic as required by certain auto-insert machines.

Delivered in tubes with correct orientation.

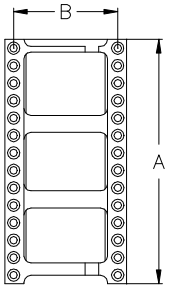


Socket Drawing "top view"

DIM "B" = 7,62mm / .300"

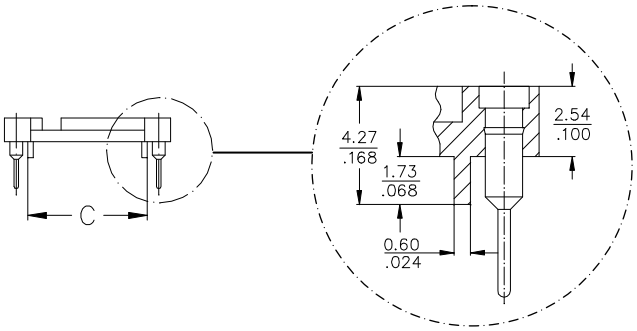


DIM "B" = 15,24mm / .600"

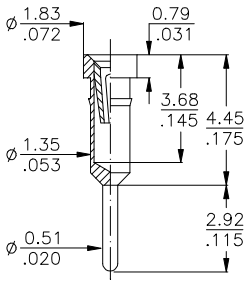


PIN	Dimensions mm/inch "A"	"B"	"C"	Ordering Code
08	10,16 / .400	7,62 .300	4,50 .177	POA-308-Sxxx-95
14	17,78 / .700			POA-314-Sxxx-95
16	20,32 / .800			POA-316-Sxxx-95
18	22,86 / .900			POA-318-Sxxx-95
20	25,40 / 1.000			POA-320-Sxxx-95
24	30,48 / 1.200			POA-324-Sxxx-95
28	35,56 / 1.400			POA-328-Sxxx-95
24	30,48 / 1.200	15,24 .600	12,00 .472	POA-624-Sxxx-95
28	35,56 / 1.400			POA-628-Sxxx-95
40	50,80 / 2.000			POA-640-Sxxx-95

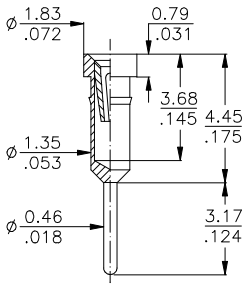
Socket Drawing "side view"



Terminal styles



001



010

Specifications

Mechanical data

Insertion force	1,80 N (avg)
Extraction force	0,90 N (avg)
Contact life	> 100 cycles
Solderability	as per IEC 60068-2-58
Contact security:	
-Vibration	as per EN60352-4
-Shock	as per EN60352-4

Material

Insulator *(RoHS compliant)*	PBT UL 94 V-0
Terminal *(RoHS compliant)*	CuZn
Contact *(RoHS compliant)*	BeCu

Electrical data

Contact resistance at 1A	4,3 mΩ typ.
Current rating	1A max., 100V
Contact capacitance at 1MHz	2 pF max.
Insulation resistance at 500V DC	5 $\times 10^9$ Ω min.
Breakdown voltage at 60 Hz	500 V AC
Contact resistance	≤7 mΩ

Operating temperature -55° C to +125° C

Pitch 2,54 mm (.100")

More information, for example about testresult please ref. to page 49 or contact E-tec.

How to order

POA - x xx - S xxx - xx

Series
POA = open insulator

DIP Spacing
see above drawing, DIM "B"
3 = .300" / 7,62mm
6 = .600" / 15,24mm

Nbr of contacts
see table

Terminal styles
see drawings

Plating
- 95 = tin/gold
- 99 = tin/tin *(tin leadfree)*

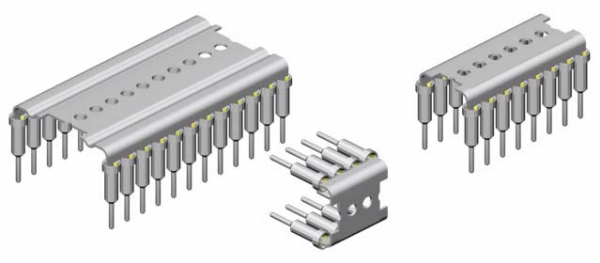
DCA/DCP/SCP - Series

Carrier Sockets & Strips 2,54mm pitch

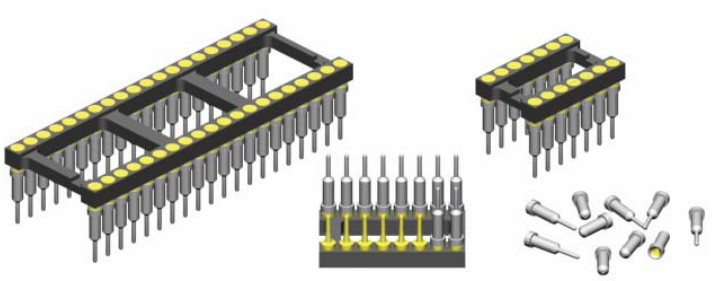
RoHS 2002/95/EC compliant

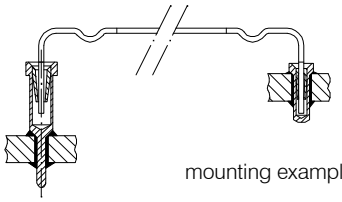
E-tec Interconnect

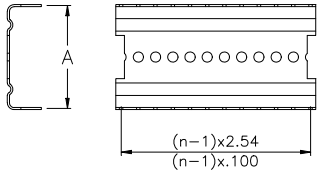
Aluminium carriers

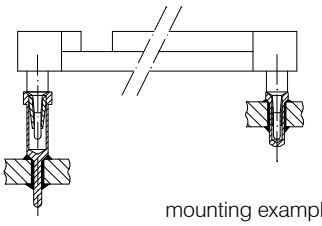


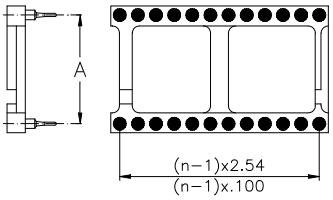
Plastic carriers

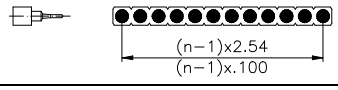




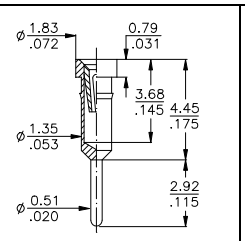




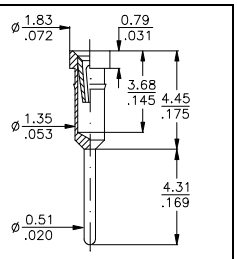




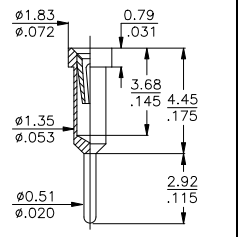
PIN	DIM "A" mm/inch	Ordering Code
6	7,62/.300	DCA-306-Sxxx-95
8		DCA-308-Sxxx-95
14		DCA-314-Sxxx-95
16		DCA-316-Sxxx-95
18		DCA-318-Sxxx-95
20		DCA-320-Sxxx-95
22		DCA-322-Sxxx-95
24	15,24/.600	DCA-624-Sxxx-95
28		DCA-628-Sxxx-95
40		DCA-640-Sxxx-95
6	7,62/.300	DCP-306-Sxxx-95
8		DCP-308-Sxxx-95
10		DCP-310-Sxxx-95
14		DCP-314-Sxxx-95
16		DCP-316-Sxxx-95
18		DCP-318-Sxxx-95
20		DCP-320-Sxxx-95
24		DCP-324-Sxxx-95
28		DCP-328-Sxxx-95
24	15,24/.600	DCP-624-Sxxx-95
28		DCP-628-Sxxx-95
32		DCP-632-Sxxx-95
36		DCP-636-Sxxx-95
40		DCP-640-Sxxx-95
48		DCP-648-Sxxx-95
2 to 32	single strip	SCP-1xx-Sxxx-95
4 to 80	double strip	SCP-2xx-Sxxx-95



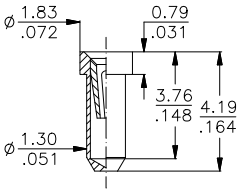
001



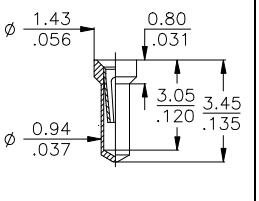
008



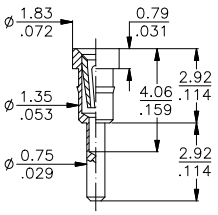
012



016



144



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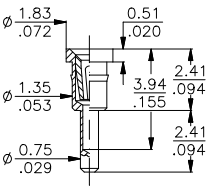


083

Specifications

See page 49 of this catalogue

Terminals

For other terminal styles please refer to the pages 46 to 48 of this catalogue or contact your closest sales office.

Carrier Material

DCP & SCP series : PBT or high temp plastic UL 94 V-0 depending on pincount

DCA series : Aluminum

How to order

XXX - x xx - S xxx - 95

Series

DCA	=	DIL Alu Carrier
DCP	=	DIL Plastic Carrier
SCP	=	SIL Plastic Carrier

Pitch

1	=	only for SCP Series
2	=	only for SCP Series
3	=	.300“ / 7,62mm
4	=	.400“ / 10,16mm
6	=	.600“ / 15,24mm
9	=	.900“ / 22,86mm

Nbr of contacts

see Ordering Code table above

Terminal style

see drawings above

or refer to pages 46 to 48 of this catalogue for other types.

Plating

- **95** = tin/gold *(tin leadfree)*

PSO/PSC - Series

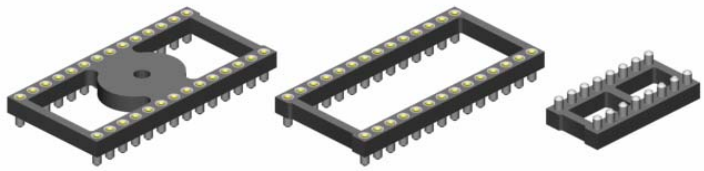
SMT IC Sockets

2,54mm pitch

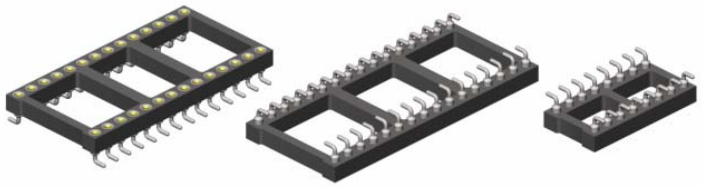
RoHS 2002/95/EC compliant

E-tec Interconnect

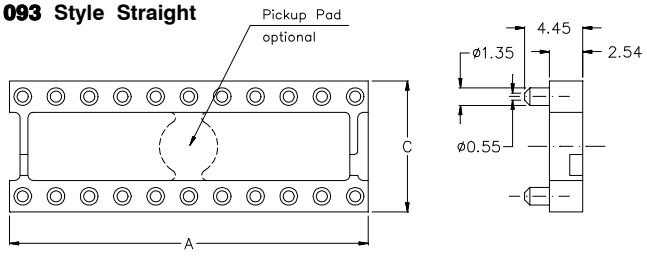
Straight Terminal SMT Sockets - 093 Style -



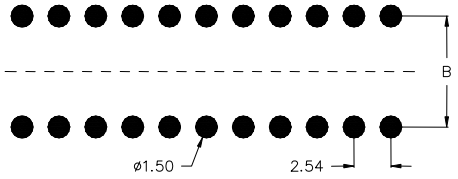
Gullwing Terminal SMT Sockets - 094 & R94 Style -



093 Style Straight

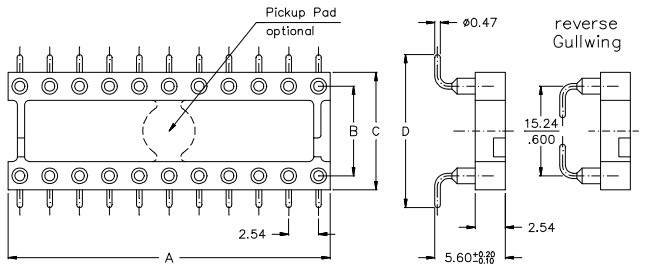


PCB layout

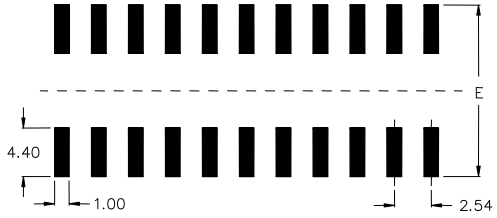


Pin	Dimensions (mm/inch) "A"	"B"	"C"			Ordering Code
6	7,62/.300	7,62 .300	10,16 .400			**PSO-306-H093-95**
8	10,16/.400					**PSO-308-H093-95**
10	12,70/.500					**PSO-310-H093-95**
14	17,78/.700					**PSO-314-H093-95**
16	20,32/.800					**PSO-316-H093-95**
18	22,86/.900					**PSO-318-H093-95**
20	25,40/1.000					**PSO-320-H093-95**
24	30,48/1.200	15,24 .600	17,78 .700			**PSO-624-H093-95**
28	35,56/1.400					**PSO-628-H093-95**
32	40,64/1.600					**PSO-632-H093-95**
36	45,72/1.800					**PSO-636-H093-95**
40	50,80/2.000					**PSO-640-H093-95**
48	60,96/2.400					**PSO-648-H093-95**

094 Style Gullwing **R94 Style**



PCB layout



Pin	Dimensions (mm/inch) "A"	"B"	"C"	"D"	"E" **094** Style	"E" **R 94** Style	Ordering Code
10	12,70/.500	5,08 .200	7,62 .300	10,46 .412			**PSO-210-H094-95**
6	7,62/.300	7,62 .300	10,16 .400	13,00 .512	15,00 .590		**PSO-306-H094-95**
8	10,16/.400						**PSO-308-H094-95**
10	12,70/.500						**PSO-310-H094-95**
14	17,78/.700						**PSO-314-H094-95**
16	20,32/.800						**PSO-316-H094-95**
18	22,86/.900						**PSO-318-H094-95**
20	25,40/1.000						**PSO-320-H094-95**
					"E" **094** Style	"E" **R 94** Style	
24	30,48/1.20	15,24 .600	17,78 .700	20.70 .815	22,70 .894	16,50 .650	**PSO-624-Hxxx-95**
28	35,56/1.40						**PSO-628-Hxxx-95**
32	40,64/1.60						**PSO-632-Hxxx-95**
40	50,80/2.00						**PSO-640-Hxxx-95**

Body types

Standard = Open frame (**PSO** Series)

Optional = Closed frame (PSC Series)

Insulator

high-temp plastic UL 94 V-0 *(RoHS compliant)*

For further technical data refer to page 49

Temperature

Operating temp. - 55 °C to +125 °C

Processing temp. +250°C +0/-5°C for 20~40sec.

How to order

PSO - xxx - Hxxx - 95 (/P) — if with Pickup Pad only 28- & 32-pin -others on request-

Series

PSO = open frame

PSC = closed frame

please contact sales office for more details

DIP spacing

in inch

see table, Dim "B"

Example:

3 for .300"

Nbr of contacts

see table

Example:

06 for 6 Pin

Terminal styles

093 = straight

094 = gullwing

R94 = reverse gullwing

933 = *floating on request*

Plating

- 95 = tin/gold *(tin leadfree)*

others on request

QIT - Series

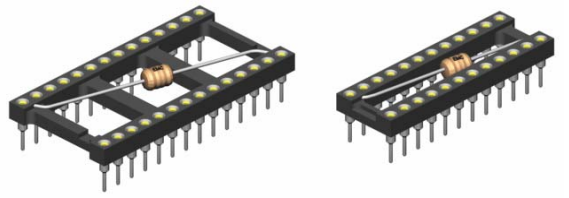
IC Sockets with Capacitors

2,54mm pitch

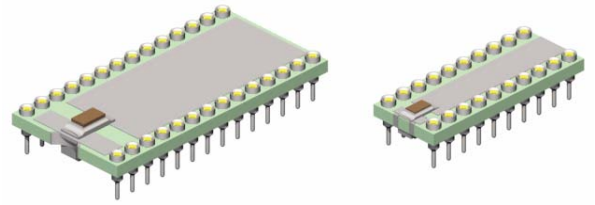
RoHS 2002/95/EC compliant

E-tec Interconnect

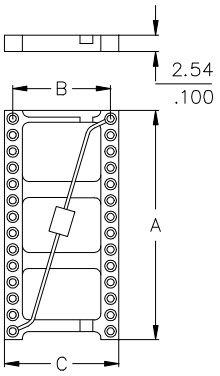
Wired capacitor sockets



SMD capacitor sockets

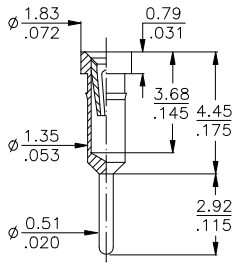


wired capacitor

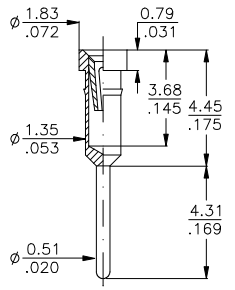


Pin	"A"	"B"	"C"	Ordering code
8	10,16/.400	7,62 .300	10.16 .400	QIT-308-W001-95
14	17,78/.700			QIT-314-W001-95
16	20,32/.800			QIT-316-W001-95
18	22,86/.900			QIT-318-W001-95
20	25,40/1.00			QIT-320-W001-95
24	30,48/1.20			QIT-324-W001-95
28	35,56/1.40			Not available
24	30,48/1.20	15,24 .600	17,78 .700	QIT-624-W001-95
28	35,56/1.40			QIT-628-W001-95
32	40,64/1.60			QIT-632-W001-95
40	50,80/2.00			QIT-640-W001-95

Terminals

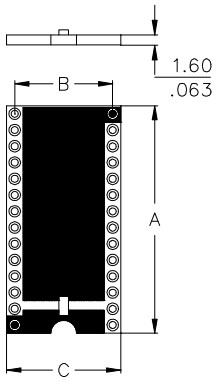


001 Standard terminal

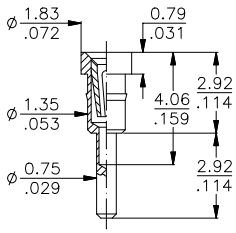


008

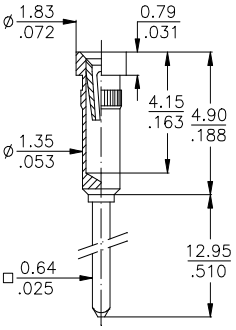
SMD capacitor



Pin	"A"	"B"	"C"	Ordering code
8	10,16/.400	7,62 .300	10.16 .400	QIT-308-S001-95
14	17,78/.700			QIT-314-S001-95
16	20,32/.800			QIT-316-S001-95
18	22,86/.900			QIT-318-S001-95
20	25,40/1.00			QIT-320-S001-95
24	30,48/1.20			QIT-324-S001-95
28	35,56/1.40			QIT-328-S001-95
24	30,48/1.20	15,24 .600	17,78 .700	QIT-624-S001-95
28	35,56/1.40			QIT-628-S001-95
32	40,64/1.60			QIT-632-S001-95
40	50,80/2.00			QIT-640-S001-95



047 Low profile terminal



003 3-level w/w

other terminals & pin-outs on request

Socket Specifications

Mechanical data

Insertion force	1,80 N (avg)
Extraction force	0,90 N (avg)
Contact life	> 100 cycles
Solderability	as per IEC 60068-2-58
Contact security:	
-Vibration	as per EN60352-4
-Shock	as per EN60352-4

Material

Insulator	*(RoHS compliant)*	Hi temp plastic UL 94 V-0 (wired version) Epoxy FR4 if with SMD capacitor
Terminal	*(RoHS compliant)*	CuZn
Contact	*(RoHS compliant)*	BeCu

Electrical data

Contact resistance at 1A	4,3 mΩ typ.
Current rating	1A max., 100V
Contact capacitance at 1MHz	2 pF max.
Insulation resistance at 500V DC	5 ×10^9 Ω min.
Breakdown voltage at 60 Hz	500 V AC
Contact resistance	≤7 mΩ
Operating temperature	-55° C to +125° C
Pitch	2,54 mm (.100")

More information, for example about testresult please ref. to page 49 or contact E-tec.

Capacitor Specifications

General data

Ceramic material	Z5U
Voltage	50 V

Available capacitor values

Standard type	100nF (0.1 µF)
Alternatives:	10nF (0.01 µF)

How to order

QIT - x xx - X xxx - 95 (/ x)

DIP spacing
in inch
see table dim. "B"

Nbr of contacts
see table

Capacitor style
W = wired
S = SMD

Terminal styles
see drawings

Plating
- 95 = tin/gold *(tin leadfree)*
others on request

Capacitor Options
(if other than 100nF)
1 = 10 nF (0,01 µF)

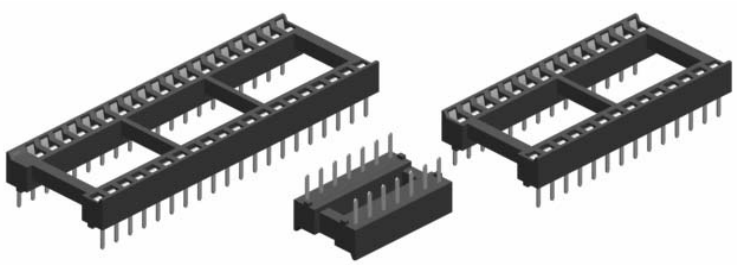
LOC - Series

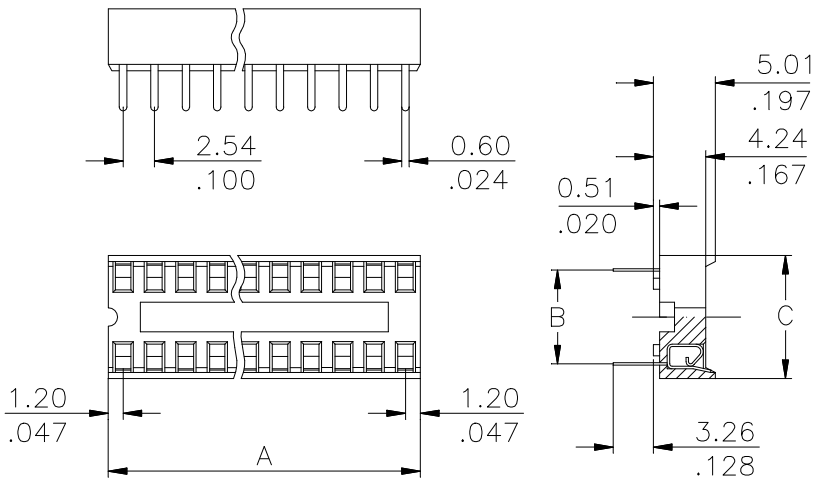
Low Cost DIP Sockets 2,54mm pitch

Available in sizes of 6 to 48 pins.

Low profile & dual-beam contact design.

Contact design incorporates anti-overstress feature.





Low Cost DIP are also available with the "Shrink" pitch 1,778mm / .070". Please request separate datasheets.

Pin	Dimensions mm/inch "A"	"B"	"C"	Ordering Code
6	7,49/.295	7,62 / .300	10,16 / .400	**LOC-306-T051-99**
8	10,03/.795			**LOC-308-T051-99**
14	17,65/.695			**LOC-314-T051-99**
16	20,19/.795			**LOC-316-T051-99**
18	22,73/.895			**LOC-318-T051-99**
20	25,27/.995			**LOC-320-T051-99**
24	30,35/1.195			**LOC-324-T051-99**
28	35,43/1.395			**LOC-328-T051-99**
22	27,81/1.095	10,16 .400	12,70 .500	**LOC-422-T051-99**
24	30,35/1.195	15,24 / .600	17,70 / .700	**LOC-624-T051-99**
28	35,43/1.395			**LOC-628-T051-99**
32	40,51/1.595			**LOC-632-T051-99**
40	50,67/1.995			**LOC-640-T051-99**
42	53,21/2.095			**LOC-642-T051-99**
48	60,83/2.395			**LOC-648-T051-99**

Specification

Mechanical data

Insertion force	2 N max.
Extraction force	0,5 N min.
Contact reliability	50 cycles min

Material

Insulator	*(RoHS compliant)*	std. temp PBT plastic UL 94 V-0
Contact	*(RoHS compliant)*	Phosphor bronze

Electrical data

Contact resistance	10 mΩ typ.
Current rating	1A max., 100V
Contact capacitance	0,5 pF
Insulation resistance	1000 MΩ min.
Breakdown voltage	1 KV min.

Operating temperature –50°C to +125°C

How to order

LOC - x xx - T051 - 99

DIP spacing
in inch
see table, Dim „B“

Nbr of contacts
see table

Plating
- 99 = tin *(leadfree)*

SD - Series

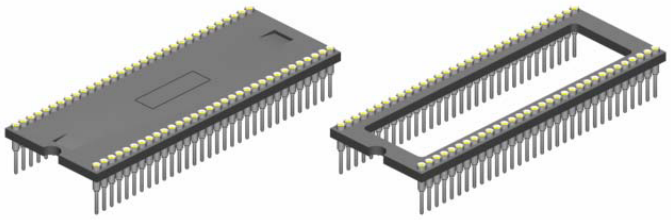
Precision Shrink Sockets

1,778mm/.070“ pitch

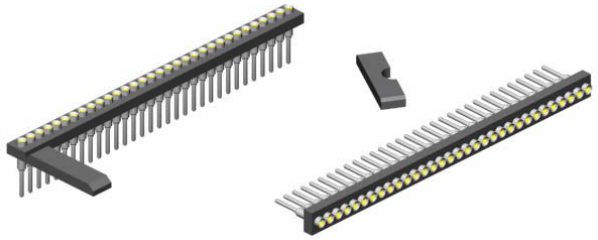
RoHS 2002/95/EC compliant

E-tec Interconnect

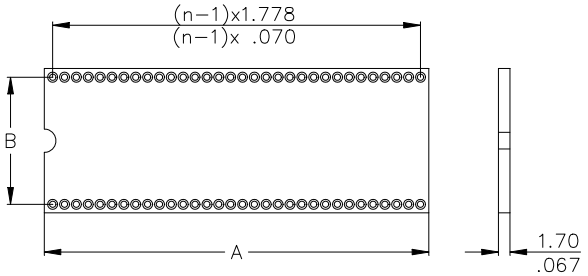
Closed & Open Frame Shrink DIP



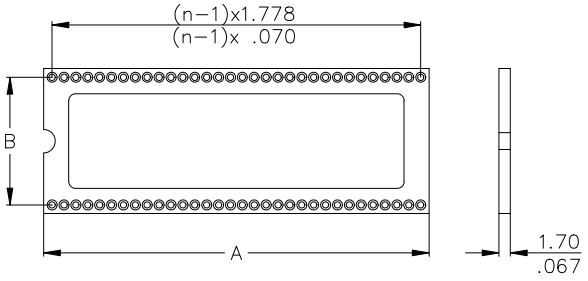
„Break-away“ Shrink SIP



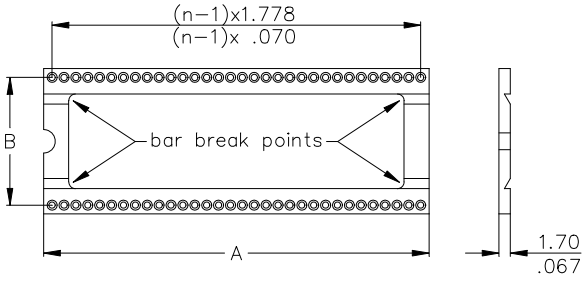
Closed frame insulator - SDC Series



Open frame insulator - SDO Series

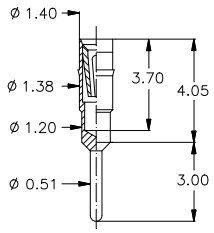


Shrink Strips - SDS Series (breakable insulator)

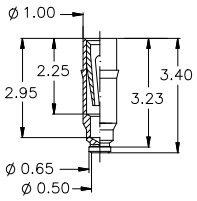


Pin	Dimensions mm/inch "A"	Dimensions mm/inch "B"	Ordering Code
24	22,09 / .870	10,16 .400	**SDC-424-Exxx-xx**
28	25,65 / 1.010	15,24 .600	**SDC-628-Exxx-xx**
40	36,32 / 1.430		**SDC-640-Exxx-xx**
42	36,32 / 1.430		**SDC-642-Exxx-xx**
64	57,65 / 2.270	19,05 .750	**SDC-764-Sxxx-xx**
64	57,65 / 2.270	19,05 .750	**SDO-764-Sxxx-xx**
2 x 32	57,65 2.270	19,05 .750	**SDS-232-Sxxx-xx**

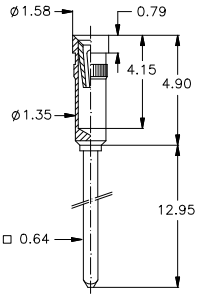
Terminal Styles



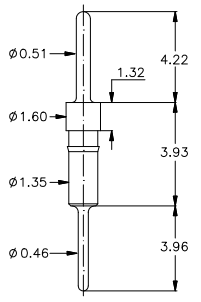
118 **Standard terminal**



119 SMT terminal



081 Wire-wrap terminal



372 Adapter terminal

Technical Data :

Insertion force 0.70 N (avg.)
Extraction force 0.25 N (avg.)

For further data refer to page 49 in this catalogue.

How to order

XXX - x xx - X xxx - xx

Series
SDC = closed frame
SDO = open frame
SDS = strips

DIP spacing
Dim "B" in inch
Example:
6 for .600”

Nbr of contacts
see table

Insulator
S = Plastic
E = FR 4 (Epoxy)

Terminal styles
see drawings
others on request

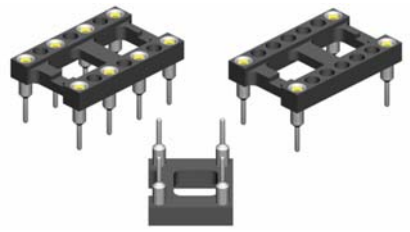
Plating
- **95** = tin/gold
(not for terminal 372)
- **55** = gold/gold
- **99** = tin/tin
(tin is leadfree)

Crystal Oscillator and Quad-in-Line Sockets

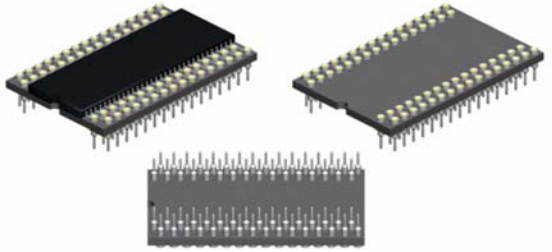
RoHS 2002/95/EC compliant

E-tec Interconnect

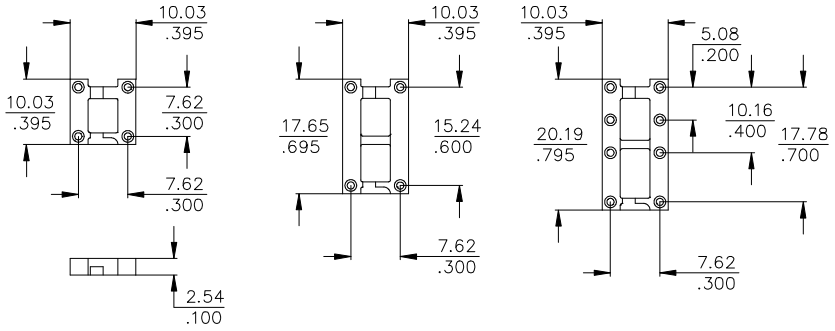
Crystal Oscillator Sockets



Quad-in-line Sockets

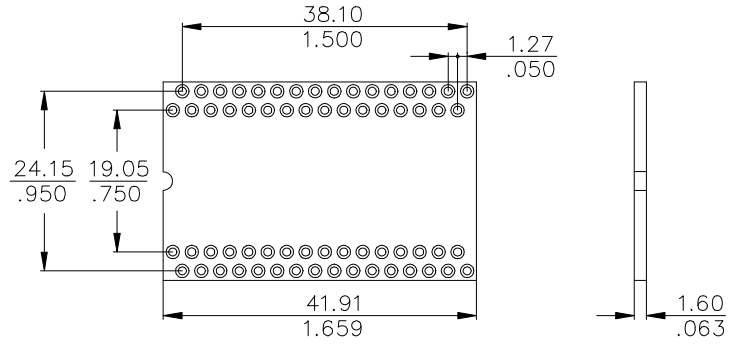


Crystal Oscillator Socket

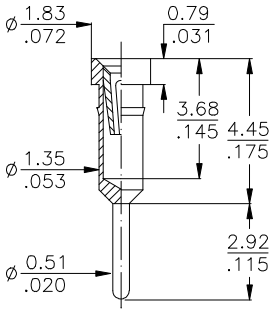


4 / 8 **4 / 14** **8 / 16**

Quad-in-Line Socket



Crystal Oscillator Sockets	
Pin	**Ordering Code**
4 / 8	**COS-084-S001-95**
4 / 14	**COS-144-S001-95**
8 / 16	**COS-168-S001-95**



001 **Standard Terminal**

Quad-in-line Socket	
Pin	**Ordering Code**
64	**QIL-764-S001-95**
for Rockwell & NEC Chip	

Other pin-outs available on request.

Specifications

Mechanical data

Insertion force	1,80 N for COS & 0.70N for QIL
Extraction force	0,90 N for COS & 0.25N for QIL
Contact life	> 100 cycles
Solderability	as per IEC 60068-2-58
Contact security:	
-Vibration	as per EN60352-4
-Shock	as per EN60352-4

Material

Insulator *(RoHS compliant)*	COS Series: hi temp plastic UL 94 V-0 QIL Series: PBT plastic UL 94 V-0
Terminal *(RoHS compliant)*	CuZn
Contact *(RoHS compliant)*	BeCu

Electrical data

Contact resistance at 1A	4,3 mΩ typ.
Current rating	1A max., 100V
Contact capacitance at 1MHz	2 pF max.
Insulation resistance at 500V DC	5×10^9 Ω min.
Breakdown voltage at 60 Hz	500 V AC
Contact resistance	≤7 mΩ
Operating temperature	-55° C to +125° C
Pitch	2,54 mm (.100")

More information, for example about testresult please ref. to page 49 or contact E-tec.

How to order

XXX - xxx - S001 - 95

Series

COS = Crystal Oscillator Socket

QIL = Quad in line Socket

Nbr of contacts & pitch

Refer to above table.

Other configurations on request.

Terminal style

see drawing

Plating

- 95 = tin/gold *(tin leadfree)*

LEH/LEV - Series

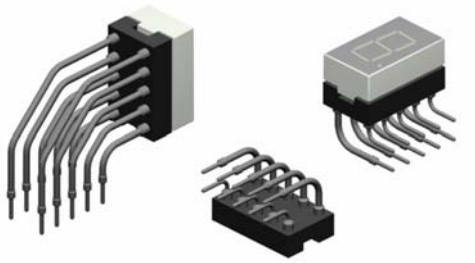
LED Sockets

2,54mm pitch

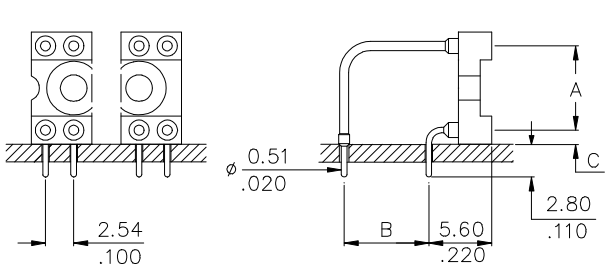
RoHS 2002/95/EC compliant

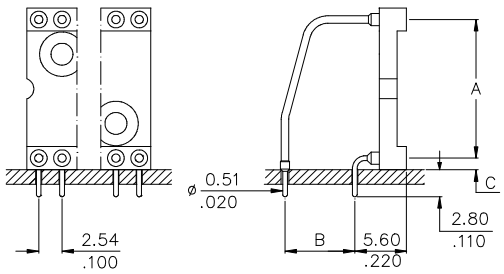
E-tec Interconnect

LED socket mounted with precision turned pins ensure perfect contact reliability.
The sockets are available in horizontal and vertical executions.
The contacts are designed to hold many different IC´s and LED´s with short leads.
The LED sockets are also designed to accept DIP Switches.



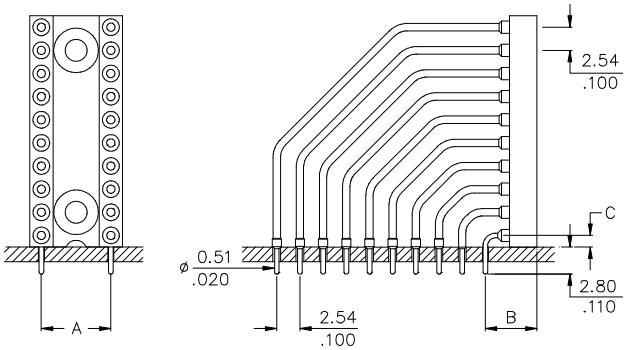
LEH Series - Horizontal -



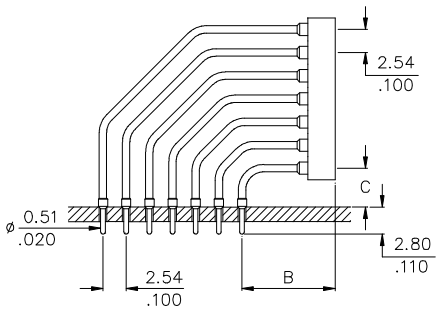


Ordering Code	Dimensions of the various socket types					
	Standard type -900-		Option -901	Option -902	Option -903	all types
pin-outs on request	Dim. "A"	Dim. "B"	Dim. "B"			Dim. "C"
LEH - 2 xx - S xxx - 95	5,08/.200	5,08/.200	2,54/.100	7,62/.300	-	1,27/.050
LEH - 3 xx - S xxx - 95	7,62/.300	7,62/.300	2,54/.100	5,08/.200	-	1,27/.050
LEH - 4 xx - S xxx - 95	10,16/.400	10,16/.400	2,54/.100	5,08/.200	7,62/.300	1,27/.050
LEH - 6 xx - S xxx - 95	15,24/.600	7,62/.300	15,24/.600	-	-	1,27/.050
LEH - 6 xx - S904 - 95	15,24/.600	7,62/.300	-	-	-	2,87/.112

LEV Series - Vertical -



Drawing for standard socket type -910



Drawing for all other options

Ordering Code	Dimensions								
	all types	Standard Type -910		Options -915		-916		-917	
pin-outs on request	"A"	"B"	"C"	"B"	"C"	"B"	"C"	"B"	"C"
LEV - 2 xx - S xxx - 95	5,08/.200	5,60/.220	1,27/.050	8,14/.320	3,81/.150	10.68/.420	6,35/.250	13,22/.520	
LEV - 3 xx - S xxx - 95	7,62/.300	5,60/.220	1,27/.050	8,14/.320	3,81/.150	10.68/.420	6,35/.250	13,22/.520	
LEV - 6 xx - S xxx - 95	15,24/.600	5,60/.220	1,27/.050	8,14/.320	3,81/.150	10.68/.420	6,35/.250	13,22/.520	
LEV - 3 xx - S911 - 95	7,62/.300	10,16/.400	4,87/.192						

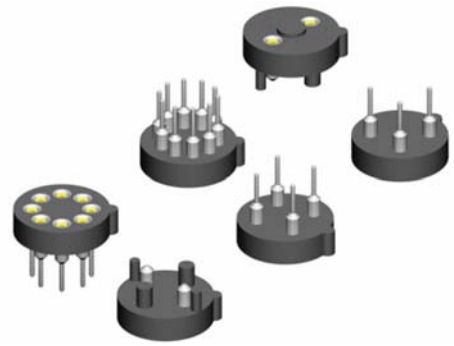
For technical specifications please refer to page 49

How to order

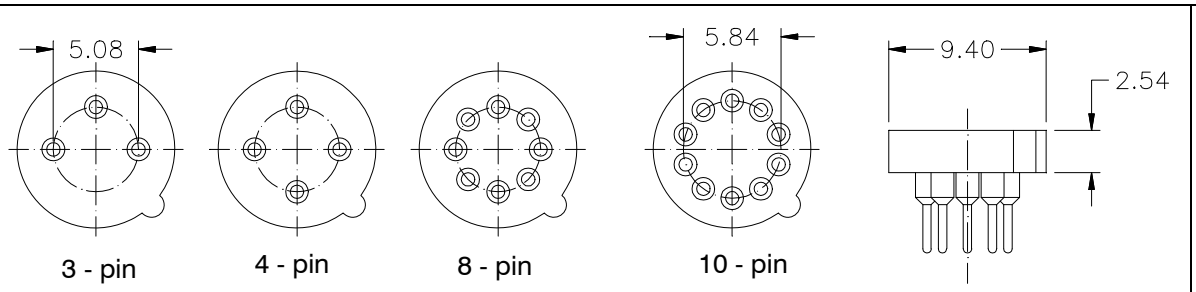
LE X - x xx - S xxx - 95

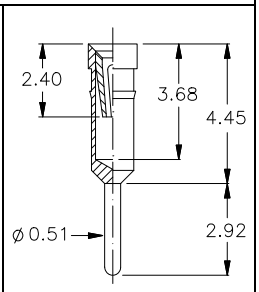
Execution	DIP spacing	Nbr of contacts	Socket Type	Plating
H = Horizontal **V** = Vertical	Dim "A" in inch	*on request*	see above drawings *Other options available on request.*	**- 95** = tin/gold *(leadfree)*

Sockets for TO-5 and TO-18 packages.
3-pole for transistors
and 2-pole TR-5 Fuse Holders shown on this page.
Embedded terminals prevent shortings.
High contact reliability with the 4-finger clips.



Transistor- & TO-Sockets





TOS-503-S118-95	TOS-504-S118-95	TOS-508-S118-95	TOS-610-S118-95	← **Order Codes**

Specifications

Mechanical data

Insertion force	1,80 N (avg)
Extraction force	0,90 N (avg)
Contact life	> 100 cycles
Solderability	as per IEC 60068-2-58
Contact security:	
-Vibration	as per EN60352-4
-Shock	as per EN60352-4

Material

Insulator *(RoHS compliant)*	PBT UL 94 V-0
Terminal *(RoHS compliant)*	CuZn
Plating	Sn *(leadfree)*, Ni underplated
Contact *(RoHS compliant)*	BeCu
Plating	Au, Ni underplated

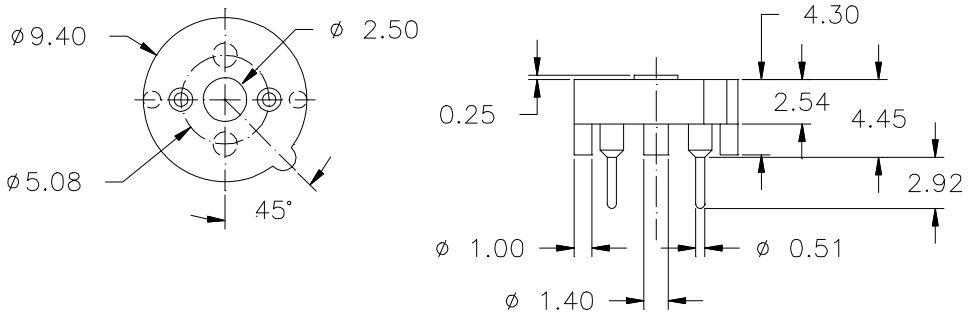
Electrical data

Contact resistance at 1A	4,3 mΩ typ.
Current rating	1A max., 100V
Contact capacitance at 1MHz	2 pF max.
Insulation resistance at 500V DC	5×10^9 Ω min.
Breakdown voltage at 60 Hz	500 V AC
Contact resistance	≤7 mΩ

Operating temperature -55° C to +125° C

More information, for example about testresult please ref. to page 49 or contact E-tec.

Socket for TR 5 Fuses



TOS-202-S001-95

Specifications

(vary from the above)

Electrical

Contact resistance at 1A	4,3 mΩ typ.
Current rating at 250 V; 1,6 W	6,3 A max.
short time 45 sec.	9 A
15 sec.	11 A
5 sec.	16 A

Mechanical

Insertion force	> 13 N
Extraction force	< 4 N
Probe diam.	0,58 - 0,62mm

Material

Insulator *(RoHS compliant)*	Stanyl PA 46 Type UL 94 V-0

Temperature

Operating temperature	-55° to +125°C
Processing temperature	+250°C +0/-5°C for 20~40sec.

PCB - Series

“F” Contact

2,50mm / 5,00mm / 7,50mm pitch

2,50mm / 5,00mm / 7,50mm pitch connector

for 90° board-to-board connections.

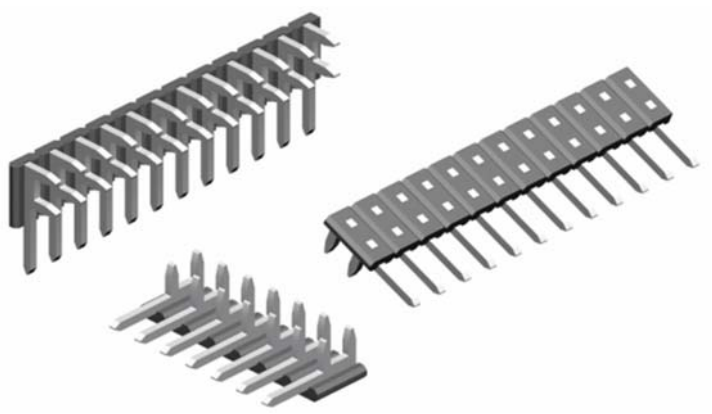
Compatible with ITT Cannon G09 connectors.

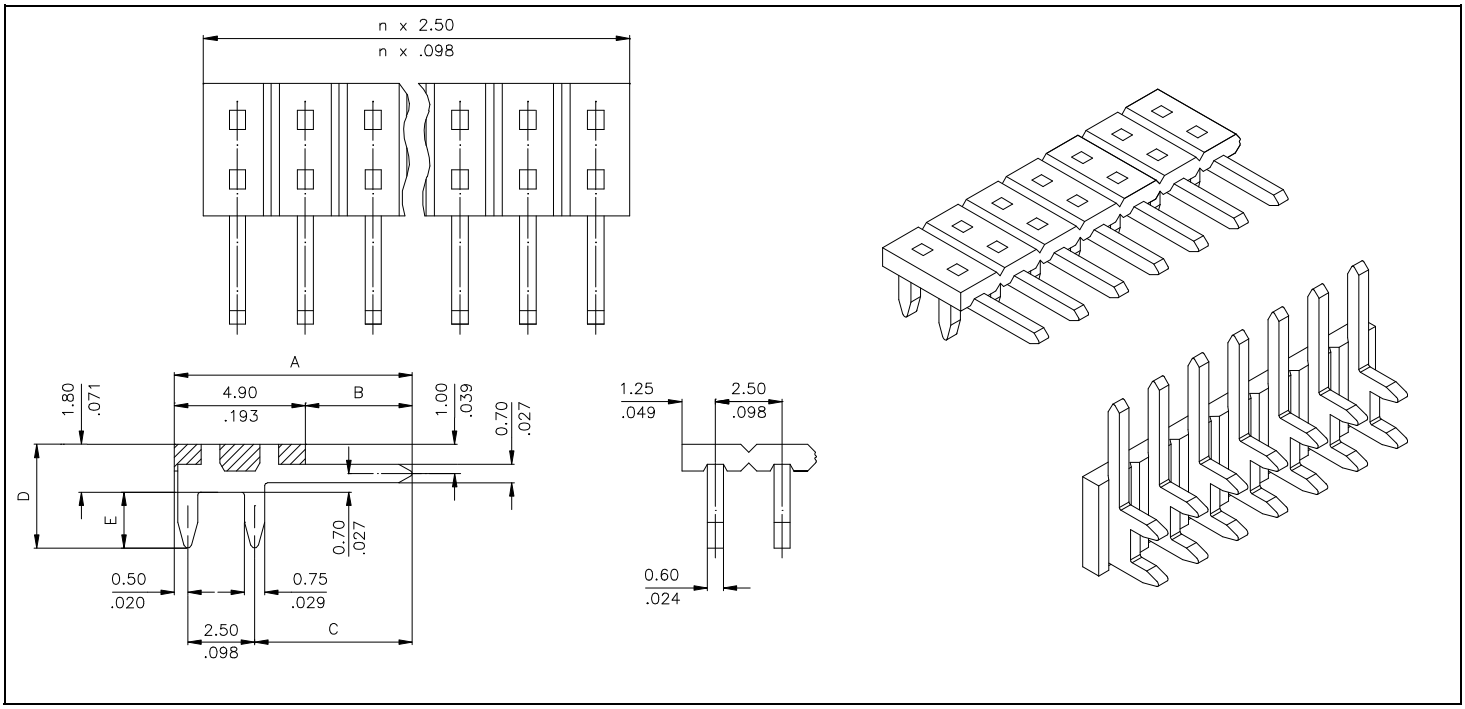
Ultra low profile with only 1.80mm above board.

Used in consumer as well as industrial applications.

Any pincount available between 1 and 27.

Plastic can be easily broken to desired size.





Specifications

Pitch		2,50 / 5,00 / 7,50mm	Insulation resistance		5 x 10^9 MΩ
Contact material	*(RoHS compliant)*	CuZn	Breakdown voltage		600 V AC
Insulator	*(RoHS compliant)*	high temp plastic UL 94 V-0	Contact resistance		<10 mΩ
Operating temperature		-55° C to +125° C	Current rating		3 A max., 250V

How to order

PCB - xxx - Rxxx - 99/x

Series

Nbr of contacts

001 to **027**

Terminal style

	Dim **"A"**	Dim **"B"**	Dim **"C"**	Dim **"D"**	Dim **"E"**
061	8,9mm	4,0mm	5,9mm	3,9mm	2,1mm
153	11,4mm	6,5mm	8,4mm	3,9mm	2,1mm
154	11,4mm	6,5mm	8,4mm	5,0mm	3,2mm

Plating

- 99 = tin *(ledfree)*

Pitch

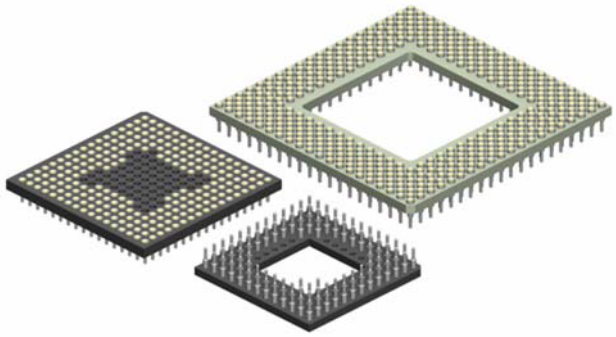
3 = 2,5mm
4 = 5,0mm
5 = 7,5mm

PGA/PGI/MGS - Series
Pin Grid Array Sockets

E-tec offers any configuration.
You may choose between open frame and closed frame socket bodies.

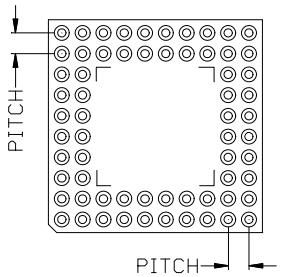
The E-tec PGA sockets with Insulator code “S” will be supplied either in plastic or FR4 Epoxy depending on material availability. If you wish to receive the sockets in FR4 Epoxy material only, then you need to specify the code “E” in the order code. If you only accept plastic, then you have to request E-tec for availability first.

All interstitial PGA (PGI) and Mini-Grid sockets (MGS) in any grid size and standard PGA sockets with grid size 19x19 or higher are delivered in FR4 Epoxy only.

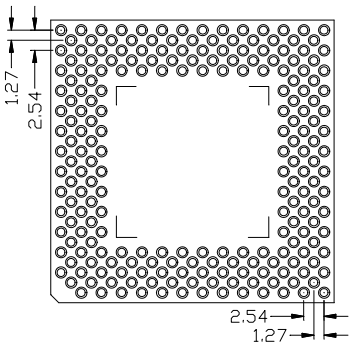


Series PGA & MGS

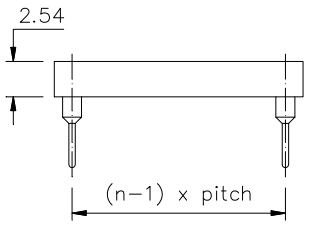
Pitch
1.27mm (.050”) or 2,54mm (.100”)



Series PGI
Interstitial
zig-zag pitch
2,54mm/1,27mm (.100”/.050”)

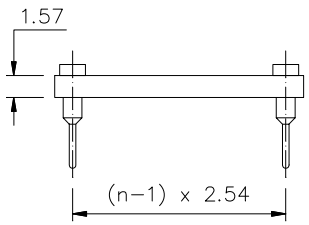


Plastic insulator dimensions



Epoxy FR4 insulator dimensions

For PGI Sockets generally



Specifications

Mechanical data

Insertion force (avg)	0,70 N for PGA / 0,40 N for PGI
Extraction force (standard)	0,25 N for PGA / 0,15 N for PGI
Contact life	> 100 cycles
Solderability	as per IEC 60068-2-58
Contact security:	
-Vibration	as per EN60352-4
-Shock	as per EN60352-4

Material

Insulator:	“S” version *(RoHS compliant)*	PBT UL 94 V-0
	“E” version *(RoHS compliant)*	Epoxy FR4
Terminal	*(RoHS compliant)*	CuZn
Contact	*(RoHS compliant)*	BeCu

Electrical data

Contact resistance at 1A	4,3 mΩ typ.
Current rating	1A max., 100V
Contact capacitance at 1MHz	2 pF max.
Insulation resistance at 500V DC	5×10^9 Ω min.
Breakdown voltage at 60 Hz	500 V AC
Contact resistance	≤7 mΩ
Operating temperature	-55° C to +125° C

More information, for example about testresult please ref. to page 49 or contact E-tec.

How to order

XXX - xxx - X xxx - xx X - xx

Series

PGA = Pin Grid Array
pitch 2,54mm (.100”)

PGI = Interstitial PGA
pitch 2,54mm / 1,27mm (.100“ / .050”)

MGS = Mini Grid Array
pitch 1,27mm (.050”)

please refer to page 32

Nbr of contacts

depends on pincount of chip

Insulator

S = Standard for PGA
PBT or FR4 Epoxy (Depending on availability)

E = Standard for PGI
Epoxy FR 4

Terminal styles

refer to page 30 & 31

Grid Code | **Config Code**

will be given by the factory after receipt of the chip datasheet

Refer also to www.e-tec.com for more information

Plating

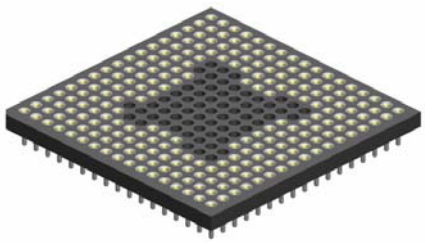
- **95** = tin/gold *(tin leadfree)*
not available for adapter terminals
- **55** = gold/gold
- **99** = tin/tin *(leadfree)*

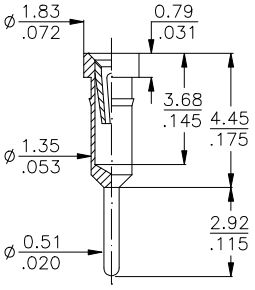
PGA/PGI - Series
Socket Terminal Styles

RoHS 2002/95/EC compliant

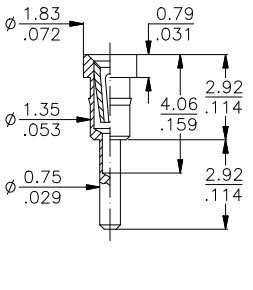
E-tec Interconnect

Standard PGA Socket

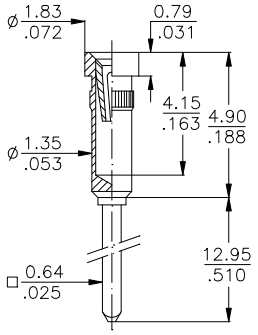




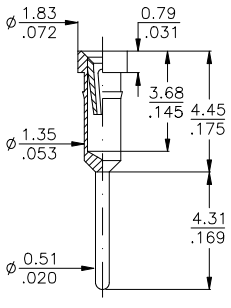
001 Standard terminal



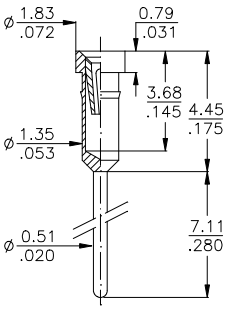
047 Low Profile terminal



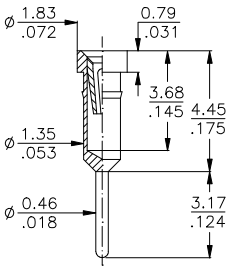
003 Wire Wrap terminal



008

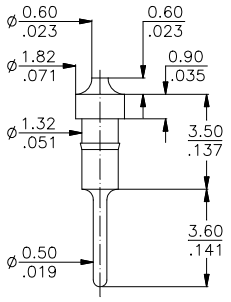


009

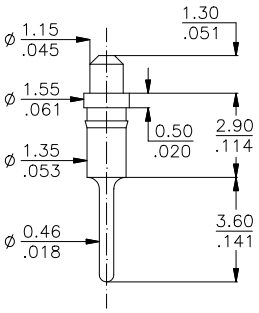


010

For Solder Adapter use



180



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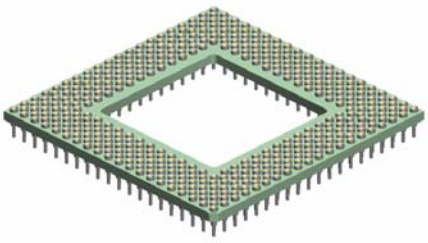
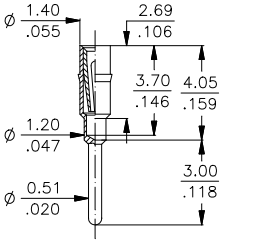
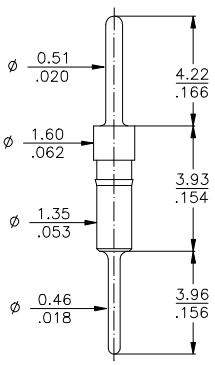
Interstitial PGA Socket (PGI)





118



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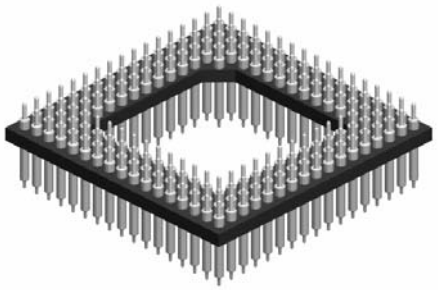
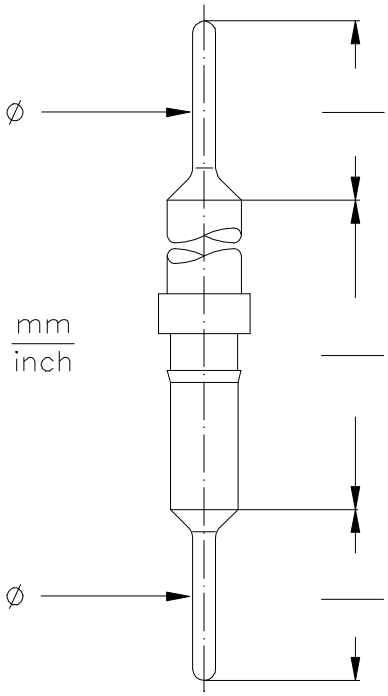
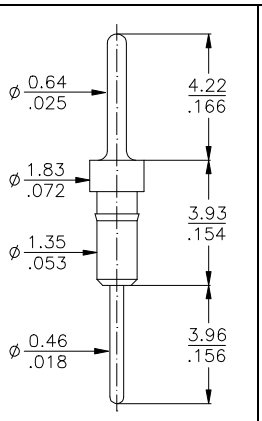
PGA/PGI - Series
Adapter Terminal Styles

PGA Adapter Socket

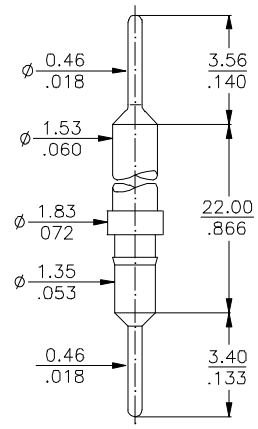


Draw your own Adapter Pin

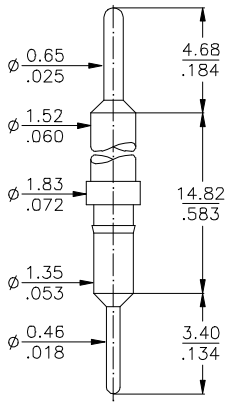




037



054



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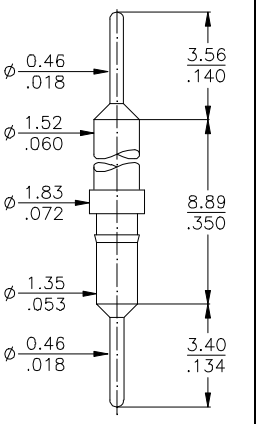
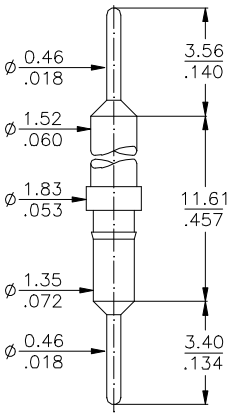
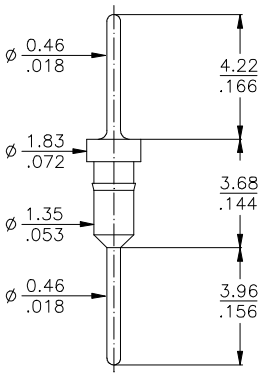


058



059



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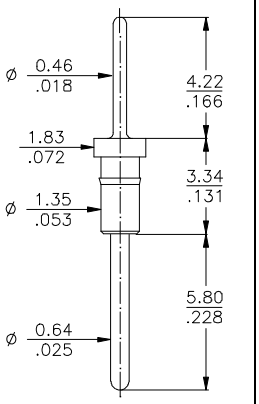

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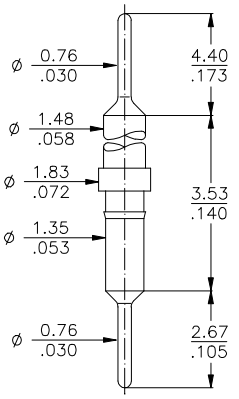
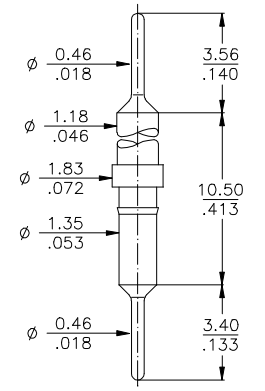
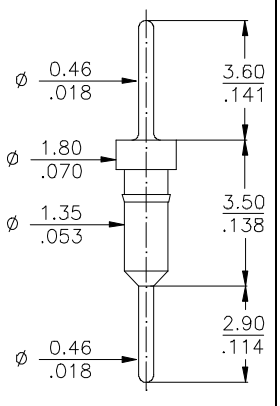


543

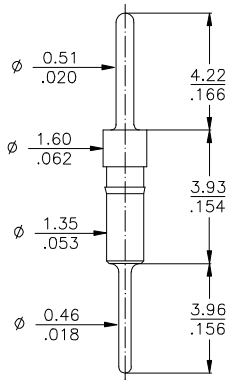


544



770

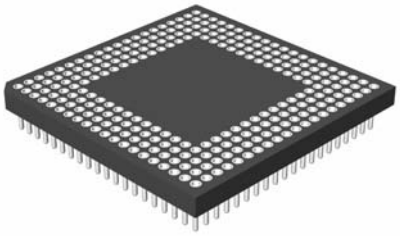
PGI Socket Adapter Pin

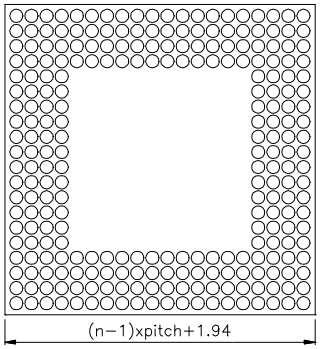


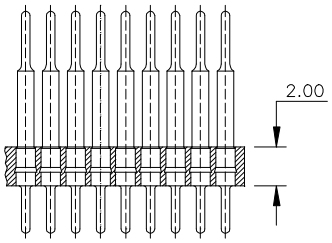
372 (only for PGI Sockets)

BGA MiniGrid Socket

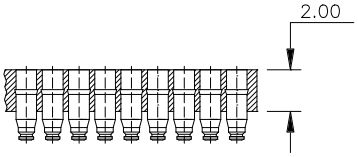
E-tec offers MiniGrid sockets in any pin-out, configuration and grid size adapted to the chip and customer requirements.
Open frame socket bodies are also available on request.
Special terminal designs are possible on request also.



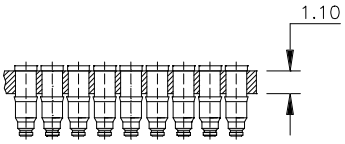




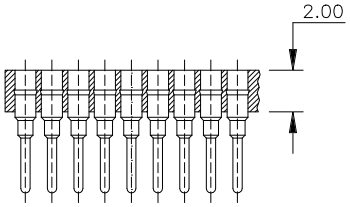
male Pin Type **774**



SMT Standard Type

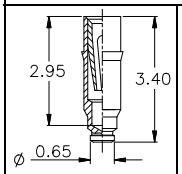


SMT floating Type *(only 1,27mm pitch)*

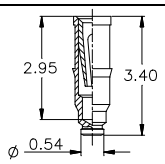


Soldertail Type *(only 1,27mm pitch)*

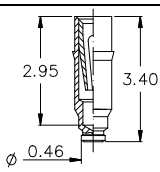
Terminal styles



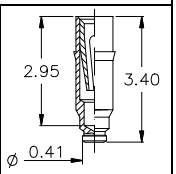
SMT Terminal Type **119**
if 1,50 & 2,00mm pitch



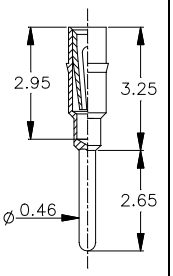
SMT **„floating"** Type **120**
if 1,50 & 2,00mm pitch



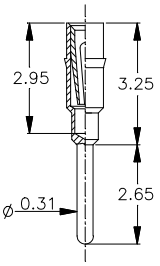
SMT Terminal Type **167**
if 1,27 and 1,00mm pitch



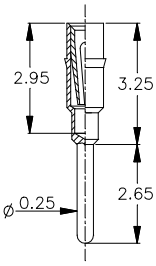
SMT Terminal Type **169**
if 0,80mm pitch



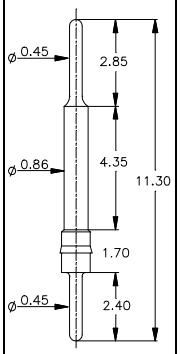
Soldertail Terminal Type **117**
if 1,50 & 2,00mm pitch



Soldertail Terminal Type **172**
if 1,27 and 1,00mm pitch



Soldertail Terminal Type **174**
if 0,80mm pitch



male pin Type **774**
if 1,27 ; 1,50 & 2,00mm pitch

Specifications

Terminal Type	Material	Plating
774	CuZn	Au over Ni over Cu
117, 119, 120, 167 169, 172, 174	Terminal : CuZn Contact clip : BeCu	Sn over Ni over Cu Au over Ni over Cu

Socket & Adapter
Material
FR 4 glass Epoxy UL 94V-0

Others
Operating Temperature
–55°C to +125°C ; 260°C for 60 sec.

How to order

MGS xxxx - Exxx - xx X 95 xx

Nbr of contacts
as per device

Terminal styles
Please refer to the drawings shown above.

Accepted male pin diameters:
Pins 119, 120, 117 : 0.38 to 0.51mm
Pins 167, 172 : 0.18 to 0.33mm
Pins 169, 174 : 0.15 to 0.28mm

Grid size | **Config Code**

will be given by the factory after receipt of the chip datasheet.

Plating
95 = tin/gold *(tin leadfree)*
for male pin **-774** plating gold only
= **55**

Pitch of Grid Array
08 = 0.80mm
10 = 1.00mm
12 = 1.27mm
15 = 1.50mm
20 = 2.00mm
others on request

LCC - Series

LCC Sockets JEDEC Type "C"

Production sockets for JEDEC Type "C" LCC chips.

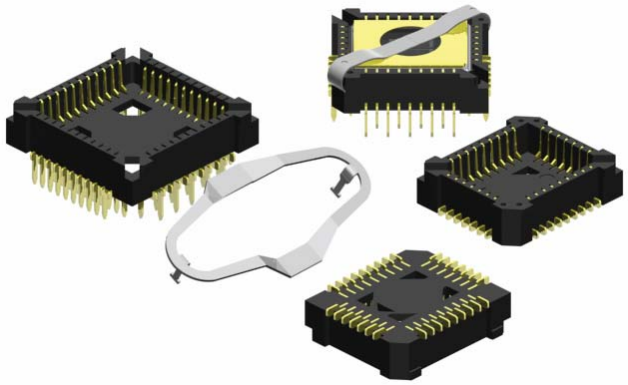
Socket design for automatic assembly and vacuum pick and place machines, available in soldertail and SMT version.

In order to ensure compatibility with newer generation 44-pin LCC chip packages we have replaced the previous H200 contact style by new style H403. The previous generation 44-pin chip packages are also adapted to this new contact style.

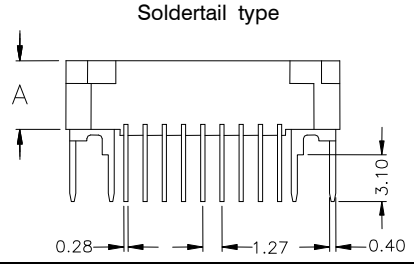
The SMT terminals extend beyond the side of the socket body, which permits direct access of the infrared heat to the terminal, thus preventing an undesired heat exposure of the insulator.

Optional retention clips are available, which can be mounted and demounted without any tools.

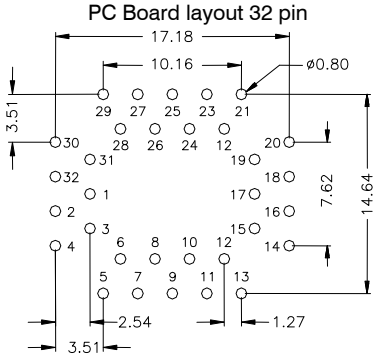
Chips can be easily removed with the Universal extraction tool PUL-200.



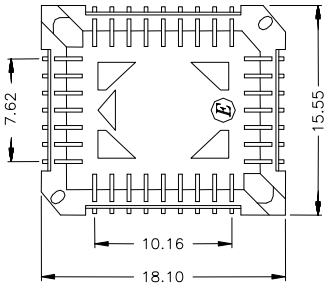
Soldertail type



PC Board layout 32 pin

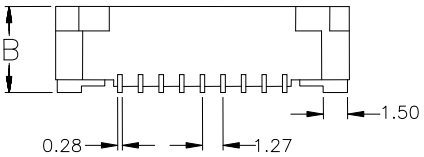


32 pin socket

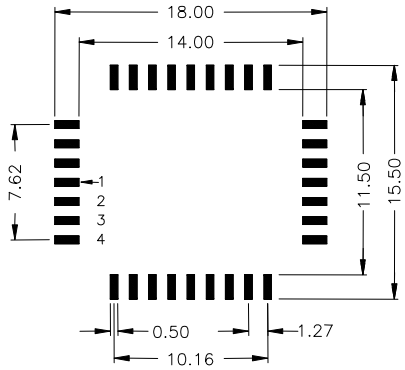


Special Retention Clip for 32 pin socket (HCL-032/S)

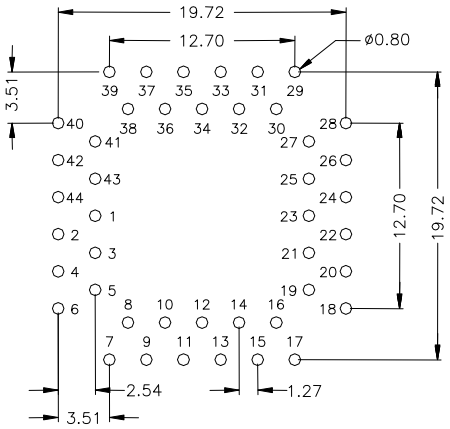
SMT type



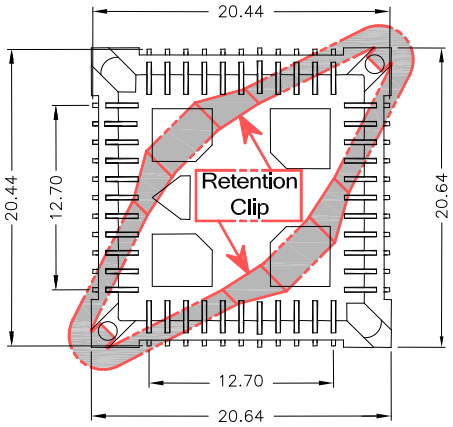
PC Board layout 32 pin



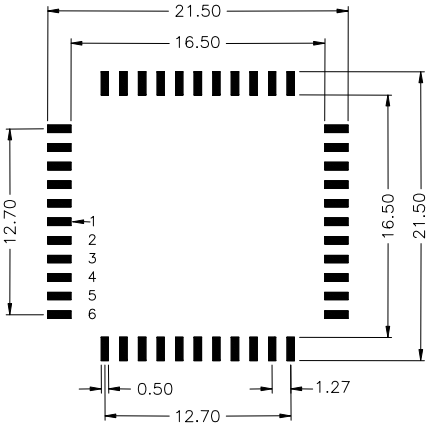
PC Board layout 44 pin



44 pin socket



PC Board layout 44 pin



Pin	Soldertail Type Ordering Code	DIM "A"
32	**LCC-032-H210-55**	5,20/.244
44	**LCC-044-H210-55**	6,80/.268

Retention Clip Styles - Ordering Code		
32-pin	=	**HCL-032/S** (square)
32-pin	=	**HCL-032** (diagonal)
44-pin	=	**HCL-044**

Pin	SMT Type Ordering Code	DIM "B"
32	**LCC-032-H200-55**	5,40/.213
44	**LCC-044-H403-55** previous OC: LCC-044-H200-55	6,00/.236

Specifications

Mechanical data

Contact material	*(RoHS compiant)*	BeCu
Plating		Au over Ni over Cu (Sn on request)
Insulator	*(RoHS compiant)*	high temp plastic UL 94 V-0
Operating temperature		–55°C to +125°C
Processing temperature		250°C +0/-5°C for 20~40 Sec.

Electrical data

Insulation resistance at 500V DC	1000 MΩ min.
Breakdown voltage at 60 Hz	700V AC for one min
Contact resistance at 10 mA	30 mΩ max.
Capacitance	1pF max.
Current rating	1 A max., 100V
Pitch	1,27 mm (.050")

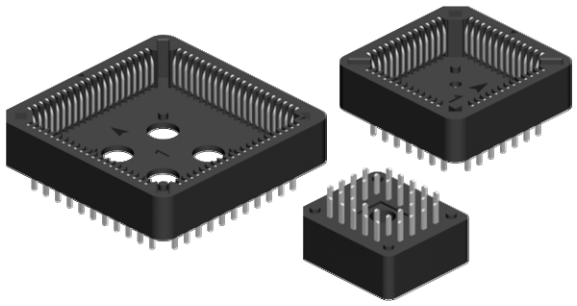
PLE - Series
„Commercial“ PLCC Sockets

The „commercial“ PLE sockets have very solid solder legs for safe assembly to PCB.

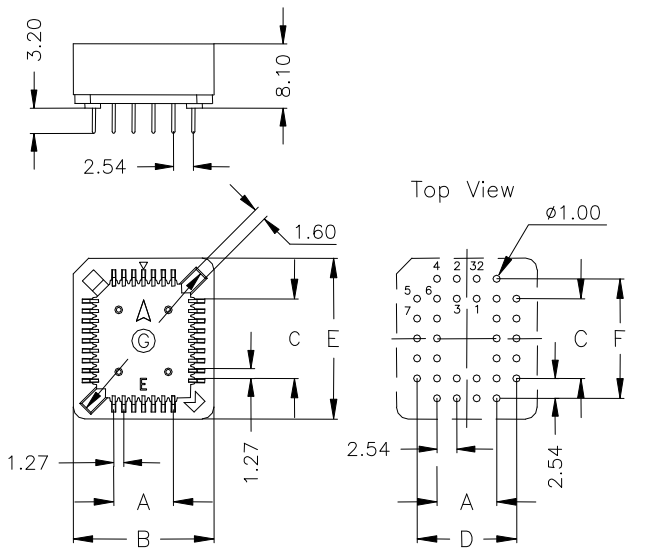
The sockets are designed to accept PLCC Chips according to JEDEC standards.

The sockets are correctly oriented in the tubes for automatic pick and place.

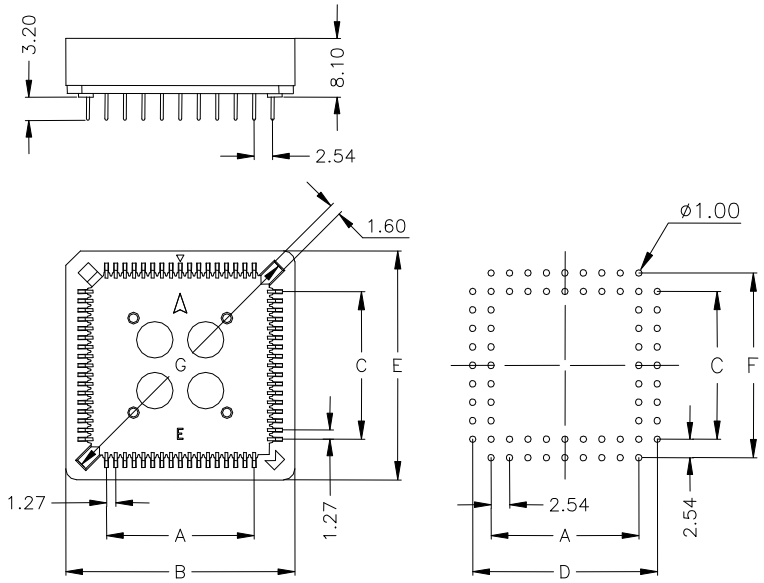
Chips can be easily removed with the Universal extraction tool PUL - 200.



32 pin



20, 28, 44, 52, 68, 84 pin



Specifications

Mechanical data

Insulator *(RoHS compiant)*	High temp plastic UL 94 V-0
Contact *(RoHS compiant)*	Copper Alloy
Plating	Sn *(leadfree)* over Ni
Insertion force	0.60N max.
Extraction force	0.15N min.
Mating cycles	50 min.

Electrical data

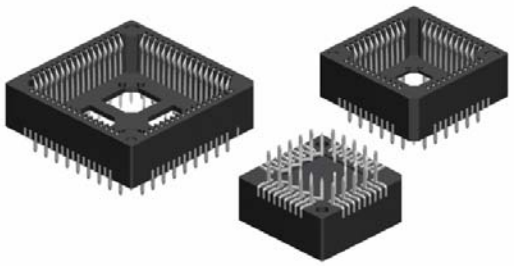
Withstanding voltage	600 V RMS for 1 Minute
Contact resistance	20 mΩ max.
Insulation resistance	1000 MΩ min.
Current rating	1 A max., 250V AC
Operating temperature	-40°C to +105°C
Processing temperature	260°C ±5°C for 5 Sec.

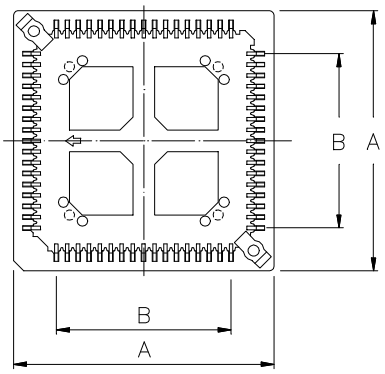
PIN	Ordering Code "Commercial" PLCC through hole type	Dimensions (mm) "A"	"B"	"C"	"D"	"E"	"F"	"G"
20	**PLE - 020 - N115 - 99**	5,08	15,50	5,08	10,16	15,50	10,16	17,06
28	**PLE - 028 - N115 - 99**	7,62	18,04	7,62	12,70	18,04	12,70	20,70
32	**PLE - 032 - N115 - 99** (rectangular)	7,62	18,04	10,16	12,70	20,60	15,24	22,56
44	**PLE - 044 - N115 - 99**	12,70	23,48	12,70	17,78	23.48	17,78	28,40
52	**PLE - 052 - N115 - 99**	15,24	25,88	15,24	20,32	25.88	20,32	31,76
68	**PLE - 068 - N115 - 99**	20,32	31,04	20,32	25,40	31.04	25,40	39,16
84	**PLE - 084 - N115 - 99**	25,40	36,04	25,40	30,48	36.04	30,48	46,22
	PUL -200	Universal extraction tool for all socket sizes (see also page 44)						

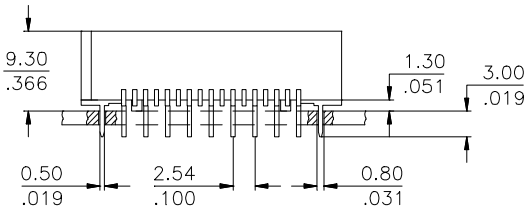
PLP - Series

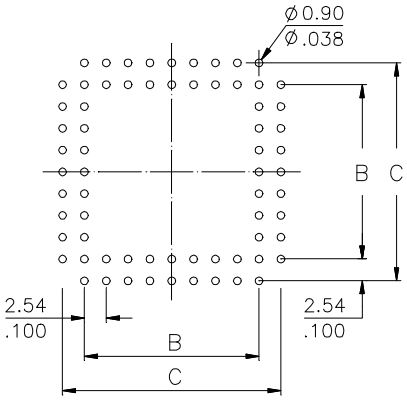
„Hi-rel“ Soldertail PLCC Sockets

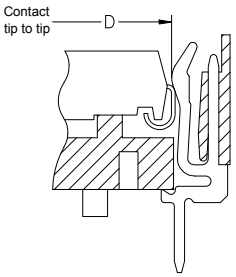
E-tec „hi-rel“ soldertail PLCC sockets correspond to JEDEC Norms.
Precision stamped contact design provides special „push-down effect“ onto the leads of the chip.
Optional retention clips for very high shock and vibration applications.
Inside polarisation corner prevents wrong insertion of the chips.
Stand-off's under the base prevent solder shorts.
Chips can be easily removed with the Universal extraction tool PUL - 200.





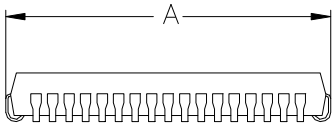


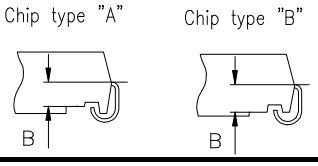




Optional: Chip **Retention Clip**

JEDEC Specification for Plastic Leaded Chip Carrier





Jedec Nbr	Nbr of Pins	Dimensions mm/inch			
		"A" min.	"A" max.	„B“ min.	„B“ max.
MO-047 AB	28	12,32 / .485	12,57 / .495	1,37 / .054	2,36 / .093
MO-052 AE	32 rectang.	14,86 x 12,32 .585 x .485	15,11 x 12,57 .595 x .495	1.37 / .054	2,36 / .093
MO-047 AB	44	17,40 / .685	17,65 / .695	1,37 / .054	2,36 / .093
MO-047 AB	52	19,94 / .785	20,19 / .795	1,37 / .054	2,36 / .093
MO-047 AB	68	25,02 / .985	25,27 / .995	1,37 / .054	2,36 / .093
MO-047 AB	84	30,10 / 1.185	30,35 / 1.195	1,37 / .054	2,36 / .093

Specifications

Mechanical data

Plating	Sn *(leadfree)* over Ni
Mating cycles	min. 50
Insertion force	max. 1,30N per contact
Extraction force	min. 0,90N per contact

Temperature

Operating temp.	- 55° to +125 °C

Material

Insulator *(RoHS compiant)*	high temp plastic UL 94 V-0
Contact *(RoHS compiant)*	Phosphor Bronze
Retention Clip	Spring steel

Electrical data

Operating voltage	100 V RMS / 150V DC
Breakdown voltage	>600 V RMS
Contact resistance	<20 mΩ
Insulation resistance	>5000 MΩ
Current rating	1 A max., 100V
Capacitance	<2 pF

PIN	Ordering Code	Dimensions mm/inch			
		"A"	"B"	"C"	"D"
28	**PLP - 028 - N110 - 99**	17,60/.693	7,62/.300	12,70/.500	11,50/.453
32	**PLP - 032 - N110 - 99** (rectangular)	17,60 x 20,14 .693 x .793	10,16 x 7,62 .400 x .300	12,70 x 15,24 .500 x .600	11,50 x 14,04 .453 x .553
44	**PLP - 044 - N110 - 99**	22,68/.893	12,70/.500	17,78/.700	16,58/.653
52	**PLP - 052 - N110 - 99**	25,22/.993	15,24/.600	20,32/.800	19,12/.753
68	**PLP - 068 - N110 - 99**	30,30/1.193	20,32/.800	25,40/1.000	24,20/.953
84	**PLP - 084 - N110 - 99**	35,38/1.393	25,40/1.000	30,48/1.200	29,28/1.153

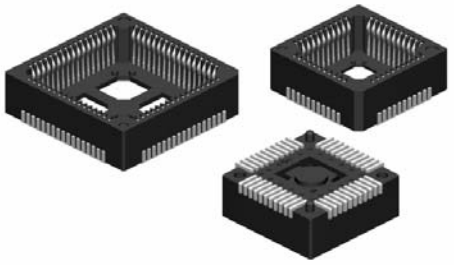
Order Code for optional **Retention Clip : HCP - xxx** (replace **"xxx"** with nbr of pins. Example. –028 if for 28-pin Socket)

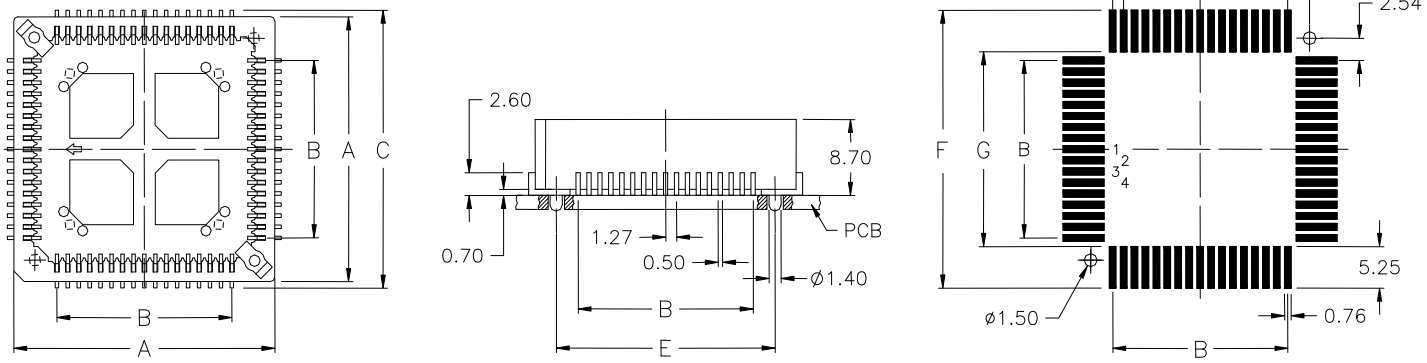
PUL - 200 Universal extraction tool for all socket sizes (see also page 44)

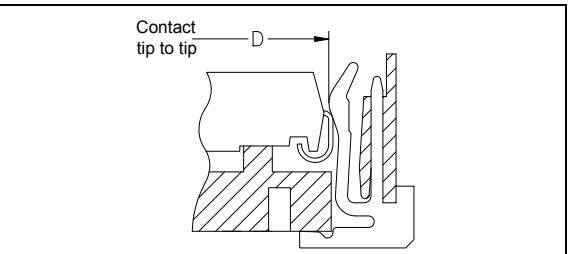
PLP - Series

„Hi-rel“ **SMT** PLCC Sockets

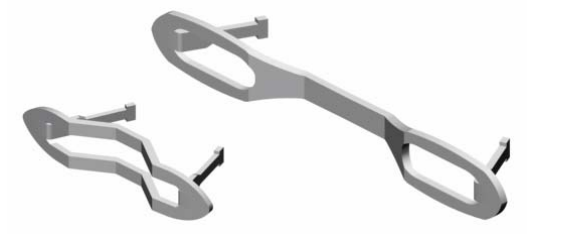
E-tec „hi-rel“ SMT PLCC sockets correspond to JEDEC Norms.
Precision stamped contact design provides special *„push-down effect“* onto the leads of the chip.
For very high shock and vibration applications a chip retention clip can be obtained on request.
Inside polarisation corner prevents wrong insertion of the chips.
Stand-off's under the base prevent solder shorts.
Chips can be easily removed with the Universal extraction tool PUL-200.



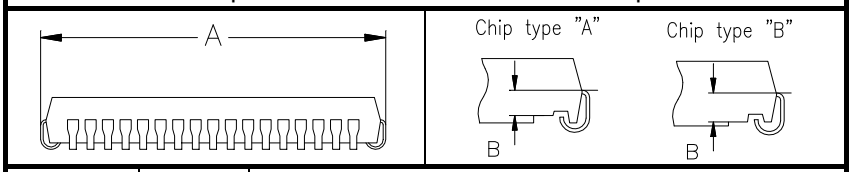




Optional: Chip **Retention Clip**



JEDEC Specification for Plastic Leaded Chip Carrier



Jedec Nbr	Nbr of Pin	Dimensions mm/inch			
		"A" min.	"A" max.	„B“ min.	„B“ max.
MO-047 AB	28	12,32 / .485	12,57 / .495	1,37 / .054	2,36 / .093
MO-052 AE	32 rectang.	14,86 x 12,32 .585 x .485	15,11 x 12,57 .595 x .495	1.37 / .054	2,36 / .093
MO-047 AB	44	17,40 / .685	17,65 / .695	1,37 / .054	2,36 / .093
MO-047 AB	52	19,94 / .785	20,19 / .795	1,37 / .054	2,36 / .093
MO-047 AB	68	25,02 / .985	25,27 / .995	1,37 / .054	2,36 / .093
MO-047 AB	84	30,10 / 1.185	30,35 / 1.195	1,37 / .054	2,36 / .093

Specifications

Mechanical data

Plating	Sn *(leadfree)* over Ni; Au on request
Mating cycles	min. 50
Insertion force	max. 1,30N per contact
Extraction force	min. 0,90N per contact

Temperature

Operating temp.	- 55°C to +125°C
Soldering temp.	+250°C +0/-5°C for 20~40 sec.

Material

Insulator *(RoHS compiant)*	high temp plastic UL 94 V-0
Contact *(RoHS compiant)*	Phosphor Bronze
Retention Clip	Spring steel

Electrical data

Operating voltage	100 V RMS / 150V DC
Breakdown voltage	>600 V RMS
Contact resistance	<20 mΩ
Insulation resistance	>5000 MΩ
Current rating	1 A max., 100V
Capacitance	<2 pF

PIN	Ordering Code PLCC SMT Type	Dimensions mm/inch "A" +0,10 -0,20	"B"	"C" +0,10 -0,05	"D"	"E" +0,10 -0,15	"F" +0,05 -0,00	"G" +0,00 -0,05
28	**PLP - 028 - H100 - 99 (/x)**	17,60/.693	7,62/.300	19,10/.752	11,50/.453	12,70/.500	19,60/.772	9,10/.358
32	**PLP - 032 - H100 - 99 (/x)** (rectangular)	17,60 x 20,14 .693 x .793	7,62 x 10,16 .300 x .400	19,10 x 21,64 .752 x .852	11,50 x 14,04 .453 x .553	12,70 x 15,24 .500 x .600	19,60 x 22,14 .772 x .872	9,10 x 11,14 .358 x .438
44	**PLP - 044 - H100 - 99 (/x)**	22,68/.893	12,70/.500	24,18/.952	16,58/.653	17,78/.700	24,68/.972	14,18/.558
52	**PLP - 052 - H100 - 99 (/x)**	25,22/.993	15,24/.600	26,72/1.052	19,12/.753	20,32/.800	27,22/1.072	16,72/.658
68	**PLP - 068 - H100 - 99 (/x)**	30,30/1.193	20,32/.800	31,80/1.252	24,20/.953	25,40/1.000	32,30/1.272	21,80/.858
84	**PLP - 084 - H100 - 99 (/x)**	35,38/1.393	25,40/1.000	36,88/1.452	29,28/1.153	30,48/1.200	37,38/1.472	26,88/1.058

for sockets with index pins please add: **/1** = 1 pin in right angle corner **/2** = 1 pin in slanted corner **/3** = 2 pins diagonal

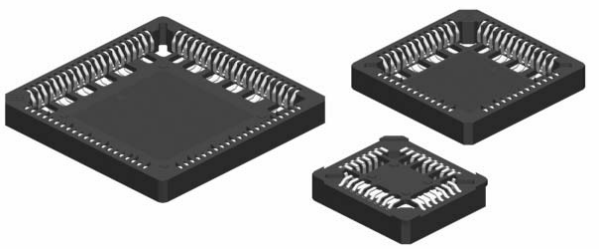
Order Code for optional **Retention Clip : HCP - xxx** (replace **"xxx"** with nbr of pins. Example. –028 if for 28-pin Socket)

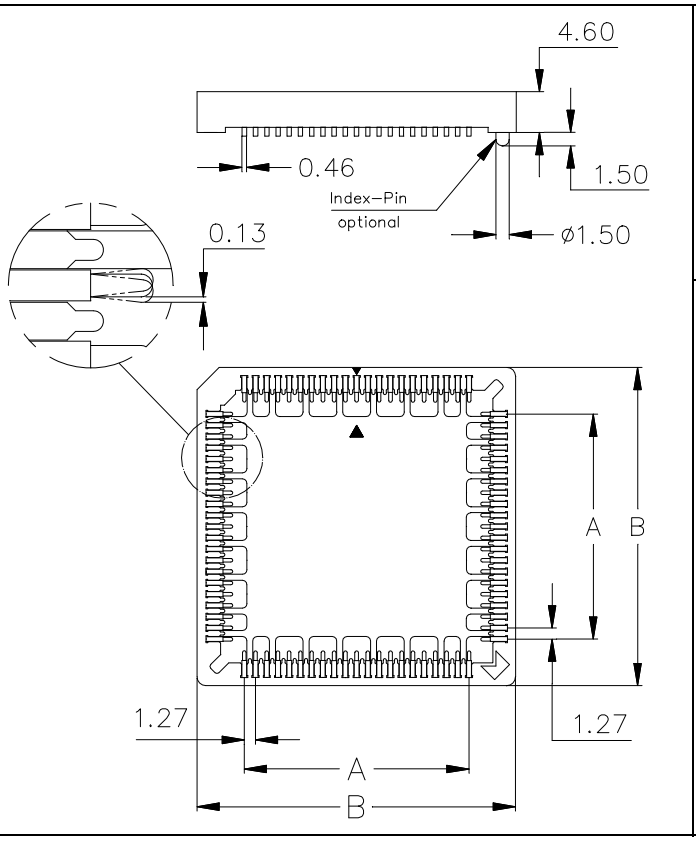
PUL - 200 Universal extraction tool for all socket sizes (see also page 44)

PLS - Series
Standard SMT PLCC Sockets

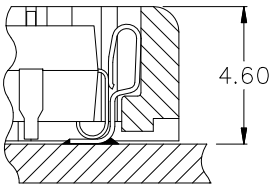
Only 4.60mm height above board.
Identical PCB layout for socket and chip.
Solder terminals visible for post solder checks.
Available with index pins under the insulator for correct orientation of the sockets.
Diagonal slots for easy extraction of the chip with the Universal extraction tool PUL-200.
Sockets correspond to JEDEC Norms.

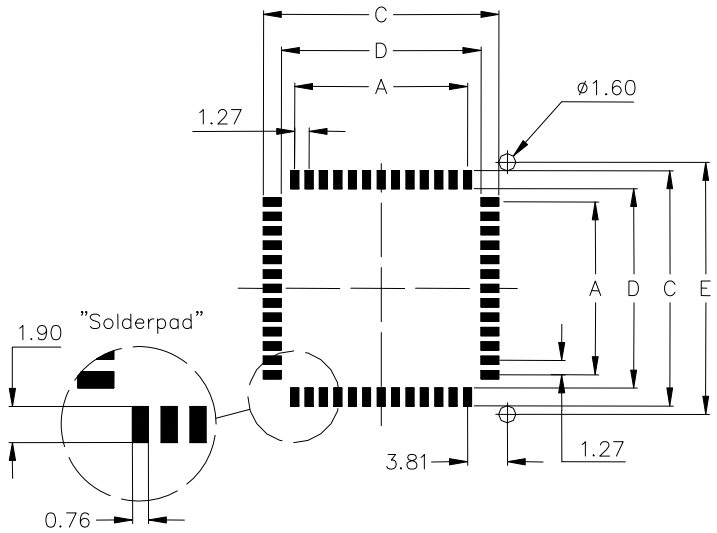
Also available in reel packaging.





Contact Design





Specifications

Mechanical data

Contact *(RoHS compiant)*	Phosphor bronze
Plating	Sn *(leadfree)* over Ni
Insulator *(RoHS compiant)*	High temp plastic black UL 94 V-0

Temperature

Operating temp.	- 40°C to +105°C
Processing temp.	+250°C +0/-5°C for 20~40sec.

Electrical data

Measuring voltage	100 V RMS / 150V DC
Breakdown voltage	>600 V RMS
Contact resistance	<20 mΩ
Insulation resistance	>5000 MΩ
Current rating	1 A max., 100V
Capacitance	<2 pF

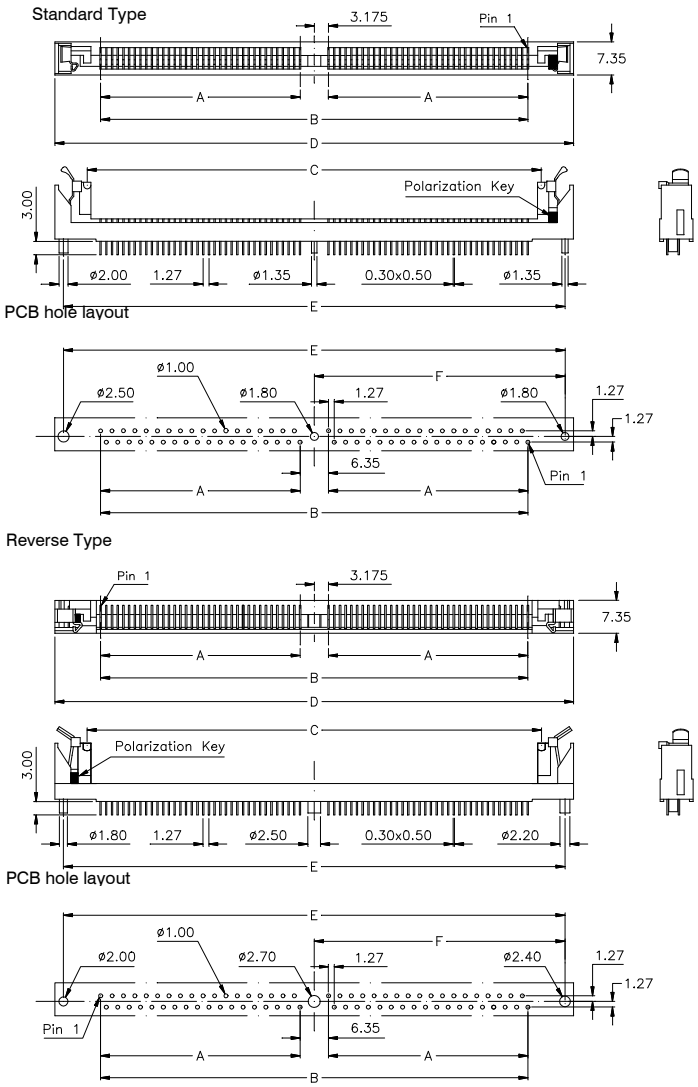
	Ordering Code		Dimensions mm				
PIN	PLCC SMT without index pins	PLCC SMT with index pins	"A"	"B"	"C"	"D"	"E"
20	**PLS - 020 - H105 - 99**	**PLS - 020 - H105 - 99/4**	5,08	15,58	10,50	6,70	12,70
28	**PLS - 028 - H105 - 99**	**PLS - 028 - H105 - 99/4**	7,62	18,12	12,61	8,81	15,24
32	**PLS - 032 - H105 - 99** (rectangular)	**PLS - 032 - H105 - 99/4** (rectangular)	7,62 x 10,16	20,66 x 18,12	13,04 x 15,58	9,24 x 11,78	17,78
44	**PLS - 044 - H105 - 99**	**PLS - 044 - H105 - 99/4**	12,70	23,20	18,12	14,32	20,32
52	**PLS - 052 - H105 - 99**	**PLS - 052 - H105 - 99/4**	15,24	25,74	20,86	17,06	22,86
68	**PLS - 068 - H105 - 99**	**PLS - 068 - H105 - 99/4**	20,32	30,82	25,74	21,94	27,94
84	**PLS - 084 - H105 - 99**	**PLS - 084 - H105 - 99/4**	25,40	35,90	30,39	26,59	33,02
For reel packing pls. order with **- 99/R**							
PUL -200 Universal extraction tool for all sizes (see also page 44)							

SM Series - SIMM Sockets

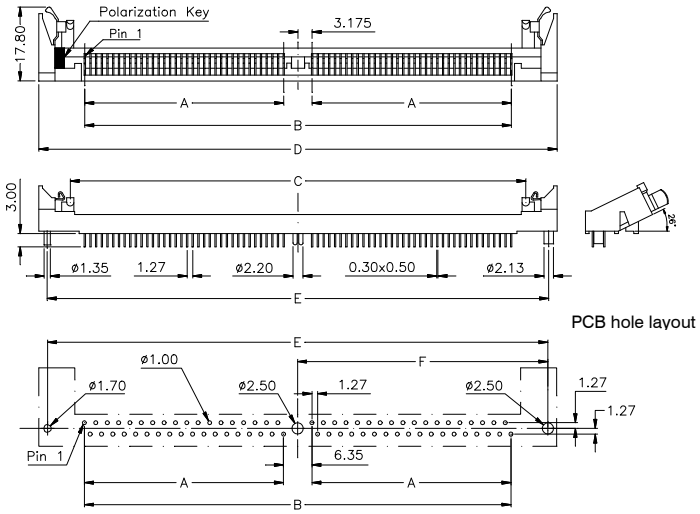
1,27mm pitch

SIMM sockets are made of hi-temp resistant LCP.
Single row types are available in vertical and slanted version (26°).
Insertion & extraction of the module can be made without any tools.
Positive polarization prevents wrong insertion of the module.
Contacts are designed with an anti-overstress feature.

Single row - vertical



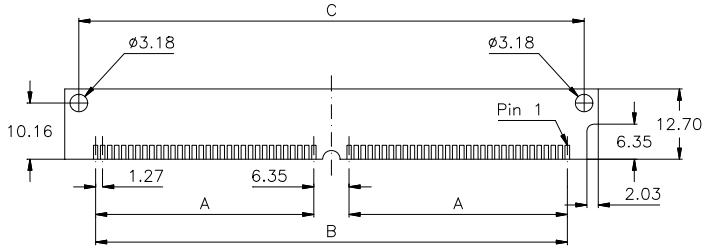
Single row - 26° slanted



Specifications

Current rating	:	1 A max., 100V
Contact resistance	:	30 mΩ max.
Breakdown voltage	:	1,5 KV RMS max.
Insulation resistance	:	10^4 MΩ min.
Capacitance	:	2 pF max.
Contact force	:	2 N min. (Module: 1.19mm to 1.37mm thick)
Operating temperature	:	-55 °C to + 150 °C min.
Insulator *(RoHS compiant)*	:	high temp plastic (ivory) UL 94 V-0
Contact *(RoHS compiant)*	:	Phosphor bronze
Plating	:	Sn *(leadfree)* over Ni

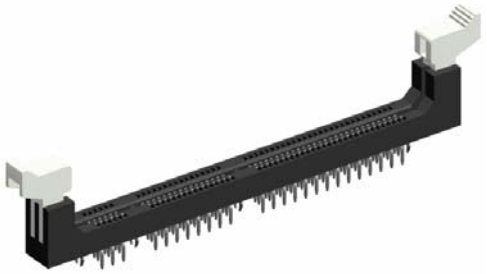
Dimensions for 1,27mm pitch SIMM Modules

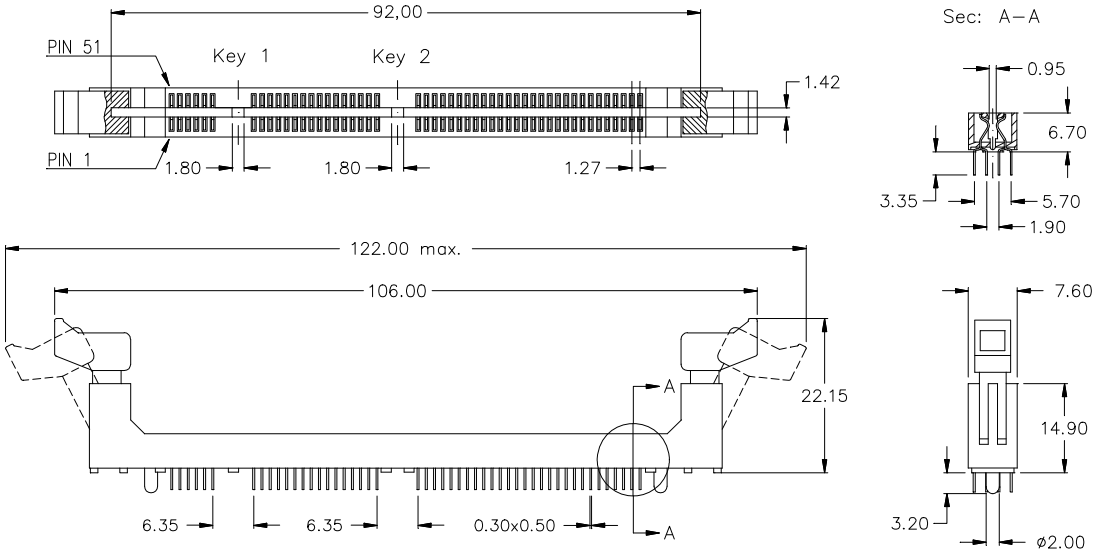


Pin	Execution	Ordering Code		Dimensions mm					
		Standard Type	Reverse Type	"A" +/- 0.15	"B" +/- 0.15	"C" +0.60 / - 0.30	"D" +/- 0.30	"E" +/- 0.25	"F" +/- 0.25
72	vertical	**SM1 - 072 - TV99 - 99 / 1M**	**SM1 - 072 - TV99 - 99 / 1MR**	44,45	95,25	101,20	115,45	111,56	55,78
80	vertical	**SM1 - 080 - TV99 - 99 / 1M**	**SM1 - 080 - TV99 - 99 / 1MR**	49,53	105,40	111,35	125,75	121,80	60.90
72	26° slanted	**SM1 - 072 - TS99 - 99 / 1M**		44,45	95,25	101,20	115,45	111,56	55,78
80	26° slanted	**SM1 - 080 - TS99 - 99 / 1M**		49,53	105,40	111,35	125,75	121,80	60.90

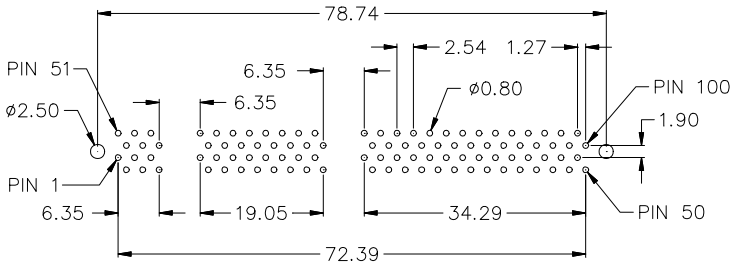
DM - Series DIMM Sockets
vertical type 100-pin 4bit

DIMM sockets are only available as long latch type
(Module locking extractors).
Insertion & extraction of the module can be made without any tools.
Positive polarization prevents wrong insertion of the module.
Contacts are designed with an anti-overstress feature for long
contact life. Selective Gold/Tin plated. Gold only in contact area.

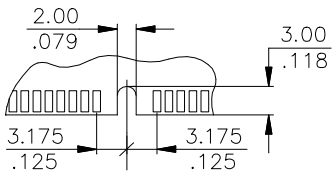




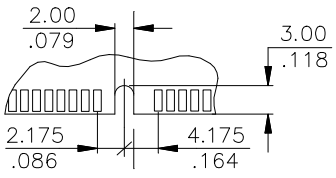
PC Board hole layout



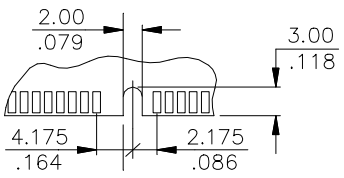
Module keying Type "A"



Module keying Type "B"



Module keying Type "C"



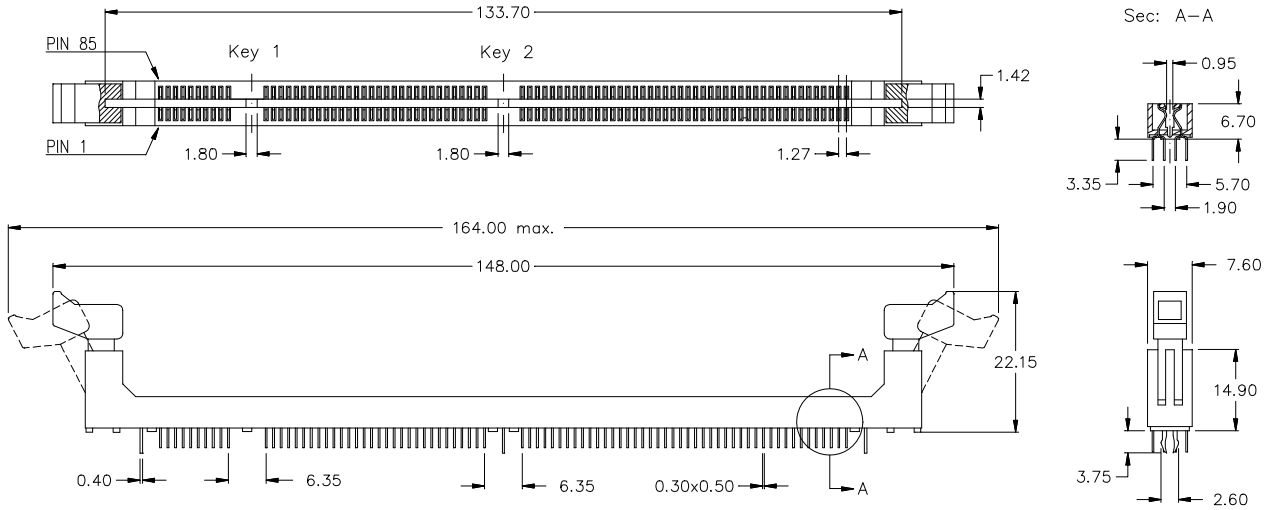
Specification

Current rating	1 A max., 250V AC	Operating temperature	-55° C to +105° C min.
Contact resistance	30 mΩ max.	Insulator *(RoHS compliant)*	high temp plastic UL 94 V-0
Breakdown voltage	1,5 KV RMS max.	Contact *(RoHS compliant)*	Copper Alloy
Insulation resistance	10^4 MΩ min.	Plating	Au / Sn *(leadfree)* over Ni
Capacitance	1 pF max.		

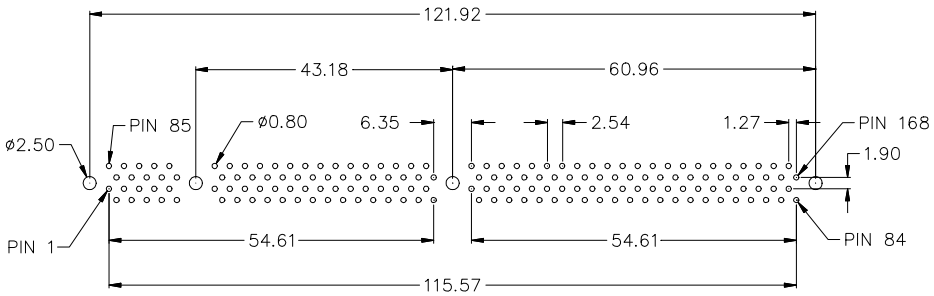
Pin	Socket Type	Key No. 1	Key No. 2	**Ordering Code**
100 pin	DRAM 5 Volt	Type "A"	Type "B"	Please contact E-tec sales office for availability.
100 pin	SDRAM 5 Volt	Type "B"	Type "B"	Please contact E-tec sales office for availability.
100 pin	UDRAM 5 Volt	Type "C"	Type "B"	Please contact E-tec sales office for availability.
100 pin	DRAM 3,3 Volt	Type "A"	Type "A"	Please contact E-tec sales office for availability.
100 pin	SDRAM 3,3 Volt	Type "B"	Type "A"	Please contact E-tec sales office for availability.
100 pin	UDRAM 3,3 Volt	Type "C"	Type "A"	**DM1 – 100 – VCA9 – 95/1L**

DM - Series DIMM Sockets
vertical type 168-pin

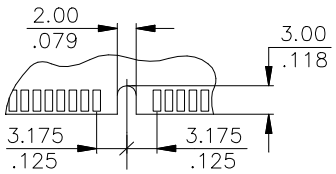
DIMM sockets are only available as long latch type
(Module locking extractors).
Insertion & extraction of the module can be made without any tools.
Positive polarization prevents wrong insertion of the module.
Contacts are designed with an anti-overstress feature for long
contact life. Selective Gold/Tin plated. Gold only in contact area.



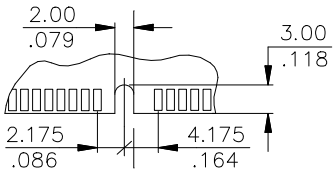
PC Board hole layout



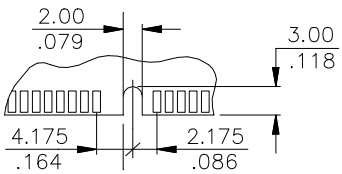
Module keying Type "A"



Module keying Type "B"



Module keying Type "C"



Specification

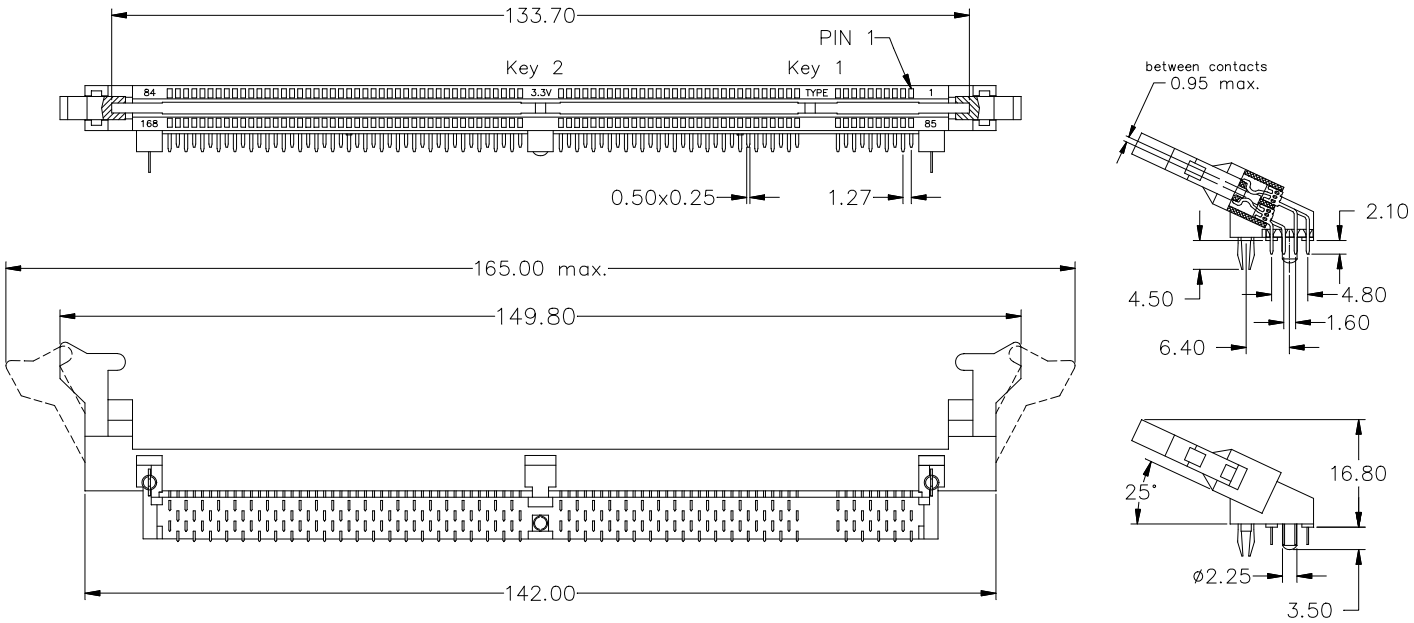
Current rating	1 A max., 250V AC	Operating temperature	-55° C to +105° C min.
Contact resistance	30 mΩ max.	Insulator *(RoHS compliant))*	high temp plastic UL 94 V-0
Breakdown voltage	1,5 KV RMS max.	Contact *(RoHS compliant))*	Copper Alloy
Insulation resistance	10^4 MΩ min.	Plating	Au / Sn *(leadfree)* over Ni
Capacitance	1 pF max.		

Pin	Socket Type	Key No. 1	Key No. 2	**Ordering Code**
168 pin	DRAM 5 Volt	Type "A"	Type "B"	**DM1 – 168 – VAB9 – 95/1L**
168 pin	SDRAM 5 Volt	Type "B"	Type "B"	**DM1 – 168 – VBB9 – 95/1L**
168 pin	UDRAM 5 Volt	Type "C"	Type "B"	**DM1 – 168 – VCB9 – 95/1L**
168 pin	DRAM 3,3 Volt	Type "A"	Type "A"	**DM1 – 168 – VAA9 – 95/1L**
168 pin	SDRAM 3,3 Volt	Type "B"	Type "A"	**DM1 – 168 – VBA9 – 95/1L**
168 pin	UDRAM 3,3 Volt	Type "C"	Type "A"	**DM1 – 168 – VCA9 – 95/1L**

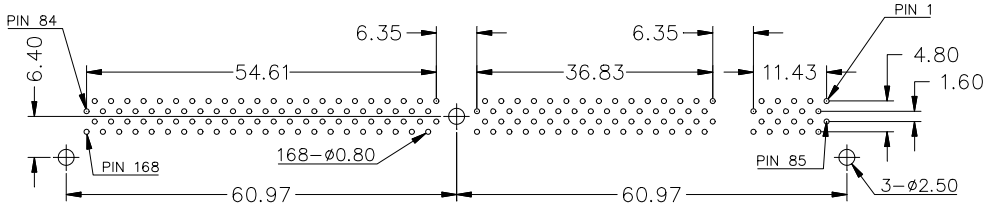
DM - Series DIMM Sockets

25° slanted type 168-pin

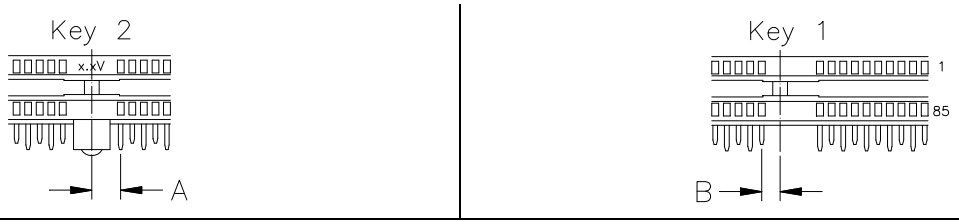
DIMM sockets are only available as long latch type
(Module locking extractors).
Insertion & extraction of the module can be made without any tools.
Positive polarization prevents wrong insertion of the module.
Contacts are designed with an anti-overstress feature for long
contact life. Selective Gold/Tin plated. Gold only in contact area.



PC Board hole layout



Module keying



Specification

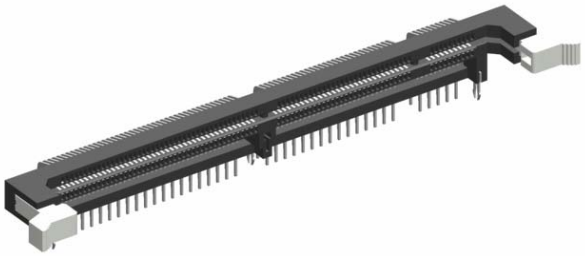
Current rating	1 A max., 250V AC	Operating temperature	-25° C to +105° C min.
Contact resistance	30 mΩ max.	Insulator *(RoHS compliant)*	high temp plastic UL 94 V-0
Breakdown voltage	1,5 KV RMS max.	Contact *(RoHS compliant)*	Copper Alloy
Insulation resistance	1000 MΩ min.	Plating	Au / Sn *(leadfree)* over Ni
Capacitance	1 pF max.		

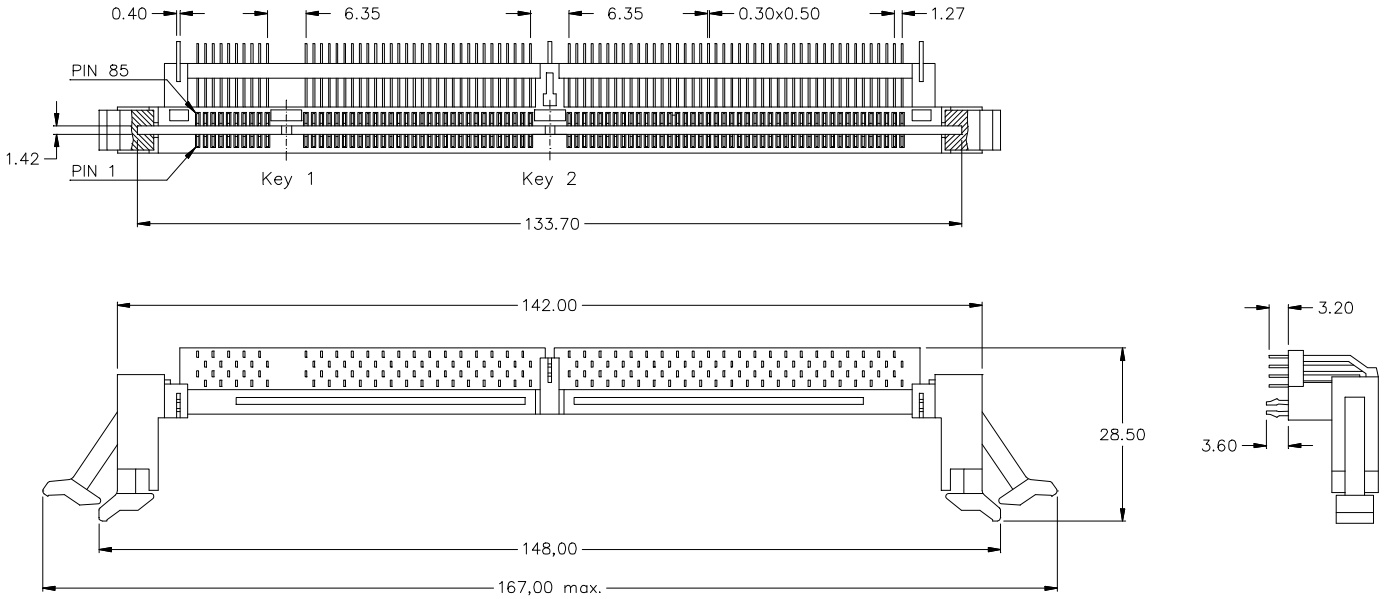
Pin	Socket Type	Key No. 1	Key No. 2	Type	Ordering Code
168 pin	DRAM 3,3 Volt	DIM "B" = 3.175 mm	DIM "A" = 3.175 mm	AA	**DM1 – 168 – SAA8 – 95/1L**
168 pin	SDRAM 3,3 Volt	DIM "B" = 4.175 mm	DIM "A" = 3.175 mm	BA	**DM1 – 168 – SBA8 – 95/1L**
168 pin	UDRAM 3,3 Volt	DIM "B" = 2.175 mm	DIM "A" = 3.175 mm	CA	**DM1 – 168 – SCA8 – 95/1L**

DM - Series DIMM Sockets

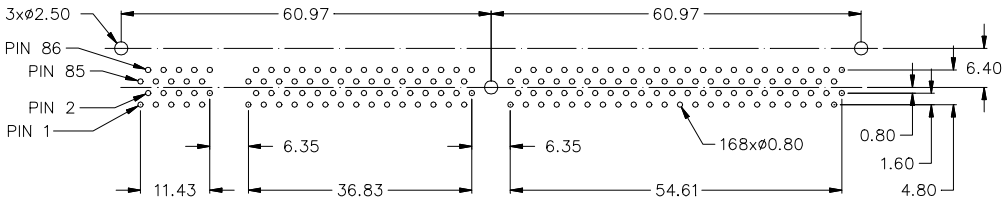
90° right angle type 168-pin

DIMM sockets are only available as long latch type
(Module locking extractors).
Insertion & extraction of the module can be made without any tools.
Positive polarization prevents wrong insertion of the module.
Contacts are designed with an anti-overstress feature for long contact life. Selective Gold/Tin plated. Gold only in contact area.

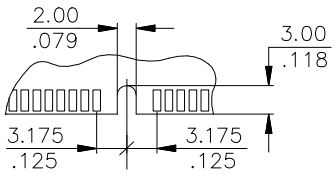




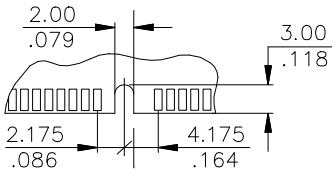
PC Board hole layout



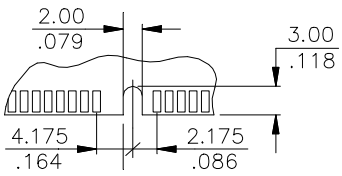
Module keying Type "A"



Module keying Type "B"



Module keying Type "C"



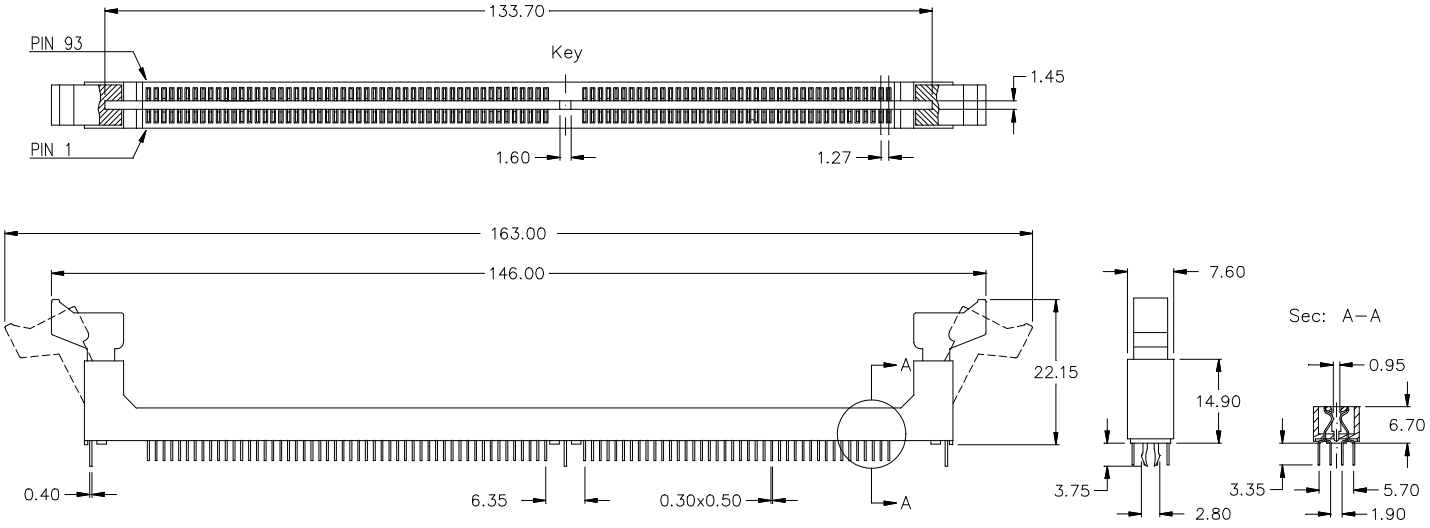
Specification

Current rating	1 A max., 250V AC	Operating temperature	-55° C to +105° C min.
Contact resistance	30 mΩ max.	Insulator *(RoHS compliant)*	high temp plastic UL 94 V-0
Breakdown voltage	1,5 KV RMS max.	Contact *(RoHS compliant)*	Copper Alloy
Insulation resistance	10^4 MΩ min.	Plating	Au / Sn *(leadfree)* over Ni
Capacitance	1 pF max.		

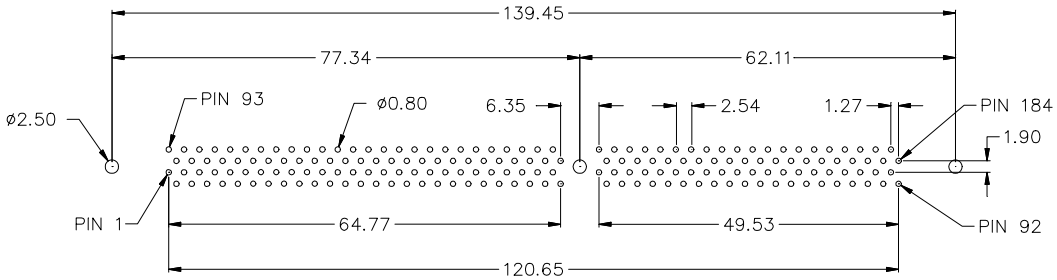
Pin	Socket Type	Key No. 1	Key No. 2	**Ordering Code**
168 pin	DRAM 5 Volt	Type "A"	Type "B"	Please contact E-tec sales office for availability.
168 pin	SDRAM 5 Volt	Type "B"	Type "B"	Please contact E-tec sales office for availability.
168 pin	UDRAM 5 Volt	Type "C"	Type "B"	Please contact E-tec sales office for availability.
168 pin	DRAM 3,3 Volt	Type "A"	Type "A"	Please contact E-tec sales office for availability.
168 pin	SDRAM 3,3 Volt	Type "B"	Type "A"	Please contact E-tec sales office for availability.
168 pin	UDRAM 3,3 Volt	Type "C"	Type "A"	**DM1 – 168 – RCA9 – 95/1L**

DR - Series DIMM Sockets
for DDR Module vertical type 184-pin

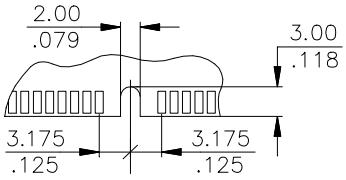
DIMM sockets for DDR module are only available as long latch type (Module locking extractors).
Insertion & extraction of the module can be made without any tools.
Positive polarization prevents wrong insertion of the module.
Contacts are designed with an anti-overstress feature for long contact life. Selective Gold/Tin plated. Gold only in contact area.



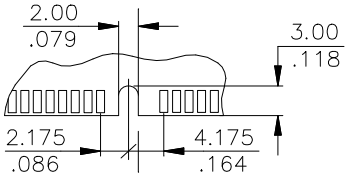
PC Board hole layout



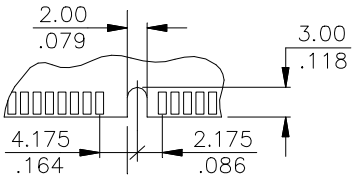
Module keying Type "A"



Module keying Type "B"



Module keying Type "C"



Specification

Current rating	1 A max., 250V AC	Operating temperature	-55° C to +105° C min.
Contact resistance	30 mΩ max.	Insulator *(RoHS compliant)*	high temp plastic UL 94 V-0
Breakdown voltage	1,5 KV RMS max.	Contact *(RoHS compliant)*	Copper Alloy
Insulation resistance	10^4 MΩ min.	Plating	Au / Sn *(leadfree)* over Ni
Capacitance	1 pF max.		

Pin	Socket Type	Voltage Key		**Ordering Code**
184 pin	1,8 Volt	Type "A"		Please contact E-tec sales office for availability.
184 pin	2,5 Volt	Type "B"		**DR1 – 184 – VBZ9 – 95/1L**
184 pin	3,3 Volt	Type "C"		Please contact E-tec sales office for availability.

DMD Series - SO - DIMM Sockets
200-pin for DDR Module

RoHS 2002/95/EC compliant

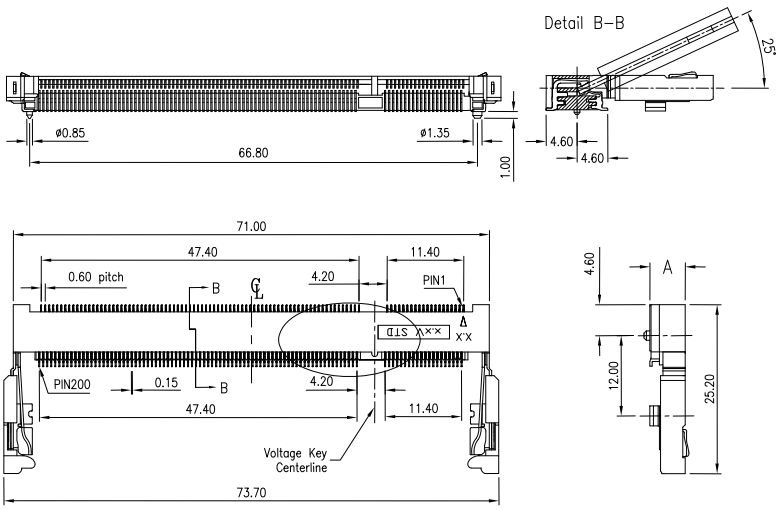
E-tec Interconnect

SO-DIMM sockets for **200-pin DDR Module** are made of hi-temp resistant LCP.

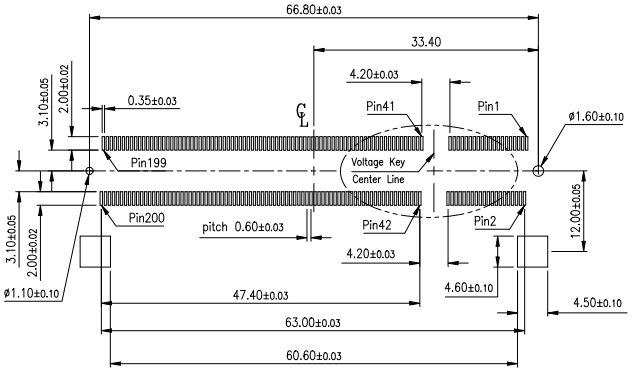
Insertion & extraction of the module can be made without any tools.
Positive polarization prevents wrong insertion of the module.

Contacts are designed with an anti-overstress feature for long contact life.

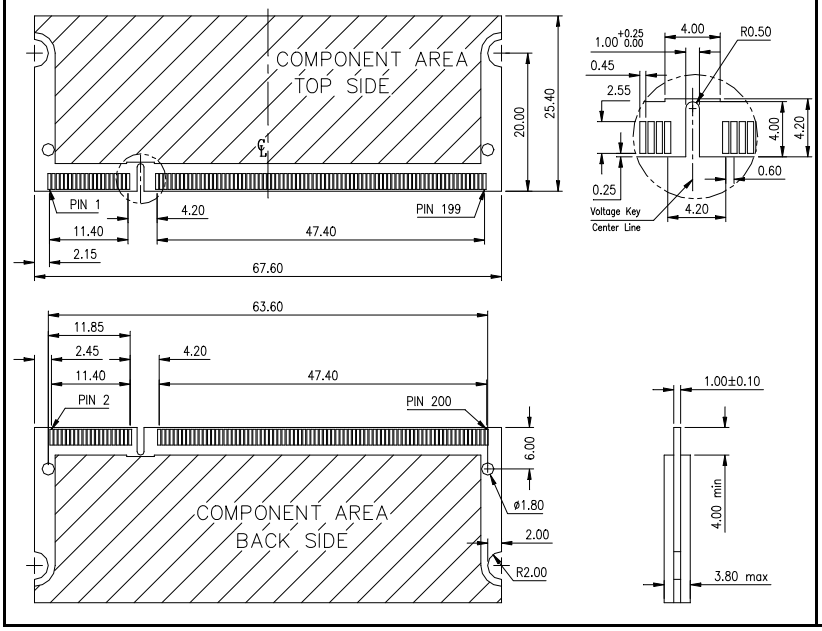
Socket dimension



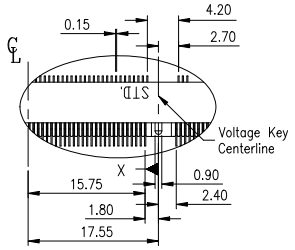
PC Board SM Layout



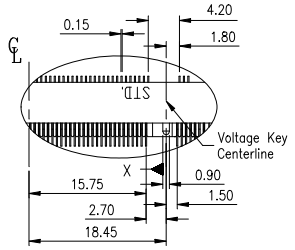
Module feature



Detail for Key Type “D” 1.8V



Detail for Key Type “E” 2.5V



Specification

Current rating	0.5 A	Insulator	*(RoHS compliant)*	LCP **black** UL 94 V-0
Voltage rating	50 V AC			ivory on request
Insulation resistance	500 MΩ min. (initial)	Contact		*(RoHS compliant)*
	100 MΩ max. (final)	Plating	*(RoHS compliant)*	Au over Ni
Contact resistance	50 mΩ max.	Lifetime		25 cycles min.
Operating temperature	-40°C to +80°C min.	Latch	*(RoHS compliant)*	Stainless Steel, Sn *(leadfree)* plated
Processing temperature	+250°C +0/-5° for 20~40 Sec.			

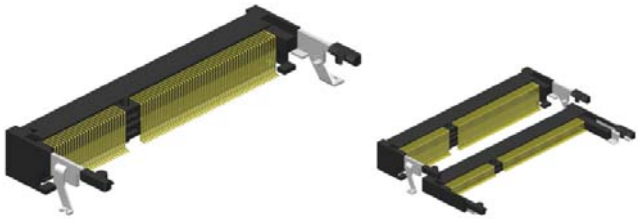
Pin	SDRAM “**Standard**” Socket Type	Connector Dimension “A“	**Ordering Code** 1.8 Volt Key Type “D“	**Ordering Code** 2.5 Volt Key Type “E“
200 pin	Low-Profile	4.00 mm	**DMD - 200 - RLD9 - 55**	**DMD - 200 - RLE9 - 55**
200 pin	Standard-Profile	5.20 mm	**DMD - 200 - RSD9 - 55**	**DMD - 200 - RSE9 - 55**

DMD Series - SO - DIMM Socket
200-pin for DDR Module "9.20mm height"

This **9.20mm height** SO-DIMM socket for 200-pin DDR Module, made of hi-temp resistant LCP, can be also used in combination with the 4.00mm & 5.20mm height type as **"Piggyback"**.

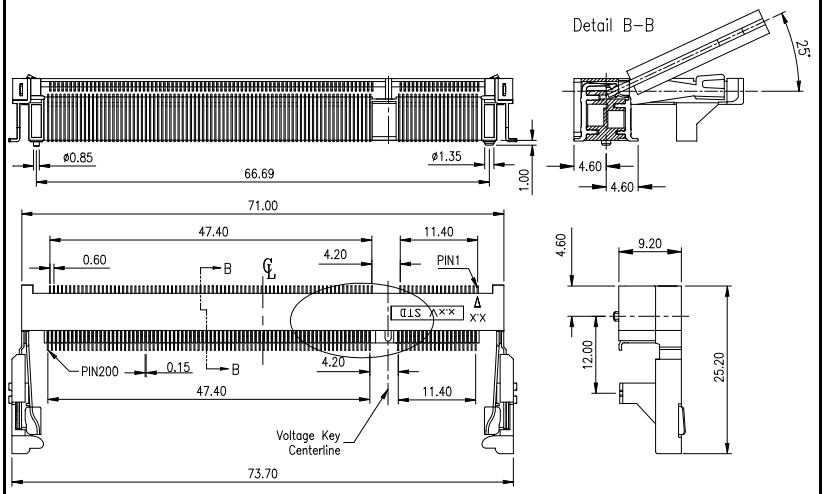
Insertion & extraction of the module can be made without any tool.
Positive polarization prevents wrong insertion of the module.

Contacts are designed with an anti-overstress feature for long contact life.

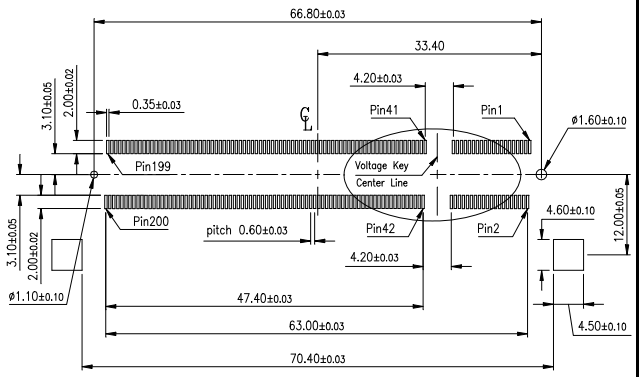


Piggyback application

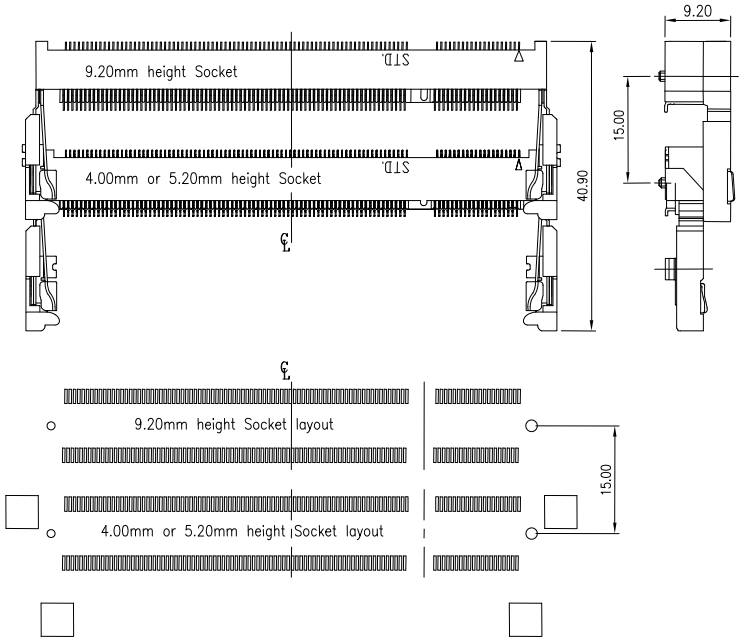
Socket dimension



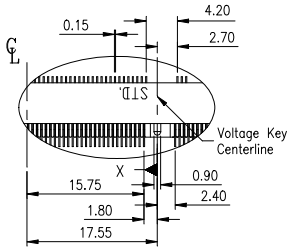
PC Board SM Layout



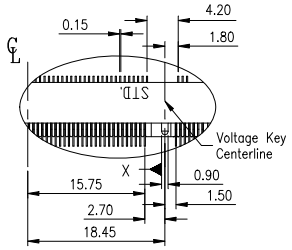
"Piggyback" use feature



Detail for Key Type "D" 1.8V



Detail for Key Type "E" 2.5V



Note: Module feature same as for the DMD-200-Rxx9-55 Type

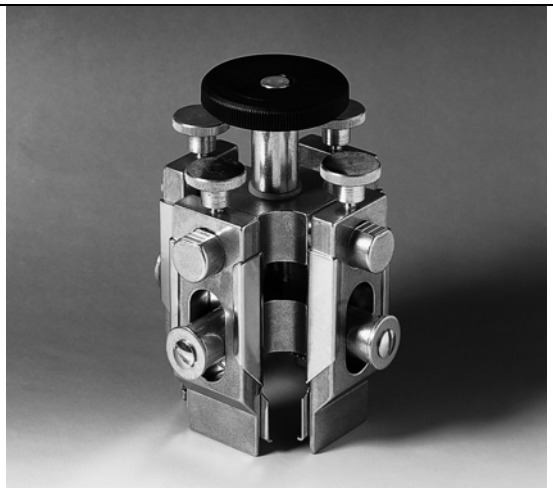
Specification

Current rating	0.5 A	Insulator	*(RoHS compliant)*	LCP **black** UL 94 V-0
Voltage rating	50 V AC			ivory on request
Insulation resistance	500 MΩ min. (initial)	Contact		*(RoHS compliant)*
	100 MΩ max. (final)	Plating	*(RoHS compliant)*	Au over Ni
Contact resistance	50 mΩ max.	Lifetime		25 cycles min.
Operating temperature	-40°C to +80°C min.	Latch	*(RoHS compliant)*	Stainless Steel, Sn *(leadfree)* plated
Processing temperature	+250°C +0/-5° for 20~40 Sec.			

Pin	SDRAM "**Standard**" Socket Type	Connector Dimension "A"	**Ordering Code** 1.8 Volt Key Type "D"	**Ordering Code** 2.5 Volt Key Type "E"
200 pin	"Piggyback" - Type	9.20 mm	**DMD - 200 - RPD9 - 55**	**DMD - 200 - RPE9 - 55**

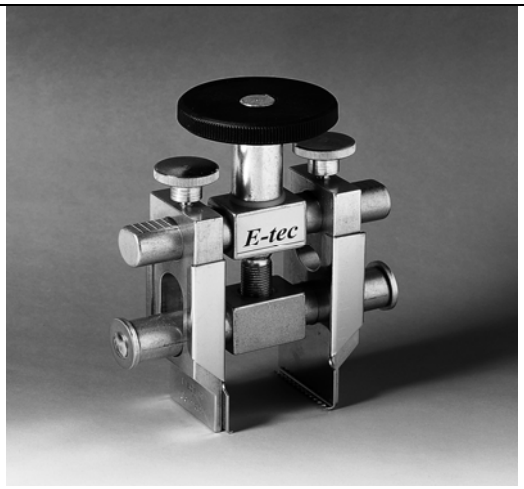
PGA Extraction Tools

for changing multi-pole PIN-GRID-ARRAYS



For extraction of PIN-GRID-ARRAYS from sockets with high extraction force, the **four side grip claw type** is recommended in order to prevent damaging the Array.

Order Code: PUL – 2300 – D/26



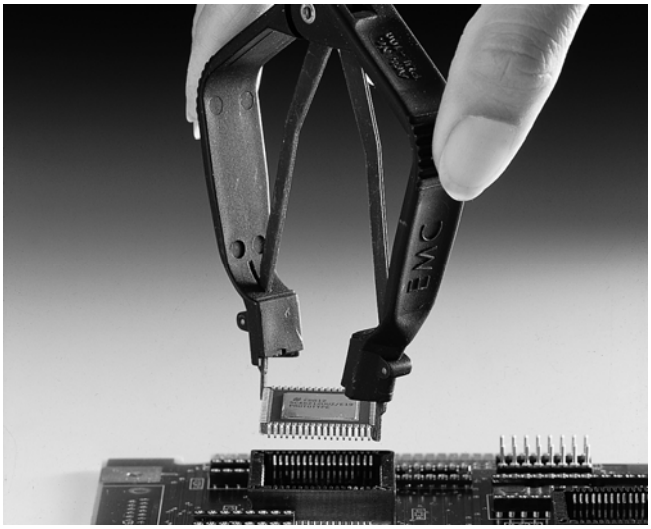
The multi-range tools have spindle actuation and a lifting mechanism with movable support jaws. Solid aluminium crossbars ensure even load distribution during the extraction operation. Their relatively large lift of approx. 15mm also permits safe extraction of arrays with bonded-on heat sinks.

Order Code: PUL – 2300 – S

PLCC , SOJ & LCC "Universal" Extraction Tool

WHY UNIVERSAL ?

It only requires ONE tool for extracting PLCC & SOJ chips of all pin configurations and LCC 32- and 44-pin chips (E-PROM's). The plastic arms sit on the side, thus avoiding an extraction force on the socket itself. This is most important for SMD sockets, which would otherwise be torn off the board.
The same tool can be used for all sockets built according to JEDEC standards and having diagonal entry slots.



Order Code: PUL – 200

PGA Insertion Tools

for inserting multi-pole PIN-GRID-ARRAYS

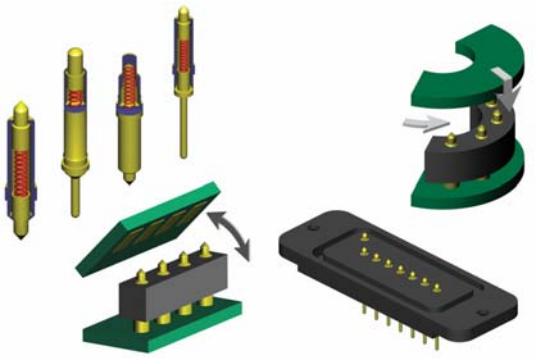
Inserting multi-pole PGA's into Sockets with precision contacts causes the same difficulties as extracting them.
When inserting a PGA into a corresponding socket, even pressure must be applied to the top of the PGA.
E-tec recommends the use of this PUS-2060 Series in order to avoid tilting and damaging the contact pins.

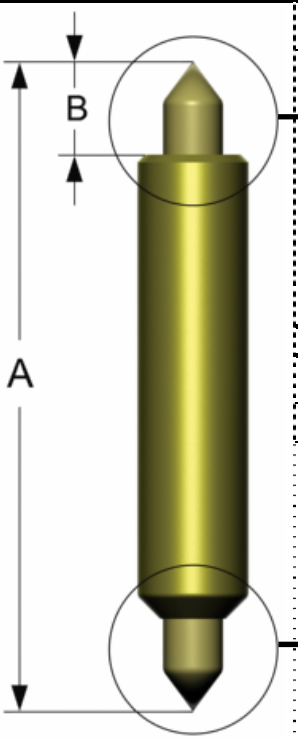
Please consult your closest sales office for detailed information and order codes.

Probe Pins (Spring loaded Contacts)

Probe Pin Connectors

Spring loaded contacts and connectors can be found in numerous environments for consumer and professional electronic applications in fixed or mobile equipments for communications, automotive, loading stations, SIM card connectors, docking stations, test & measurement instruments, cameras (picture & film), medical apparatus and many more. The probe pin and connector designs are generally specifically adapted to customer requirements.





Plunger tip types (please circle your requirement below)


Single point tip


Crown tip


Convex tip


Concave tip

Probe pin types (please circle your requirement below)

Solderless


Single point tip


Crown tip

SMT


Round tip


Flat tip

Thru-hole


Soldertail

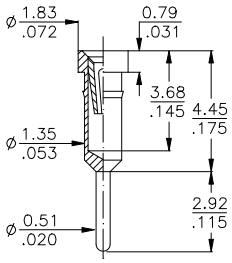
Probe pin and Connectors are generally produced to custom specifications.

Please supply a datasheet or a sketch of the required probe pin and/or connector dimensions and highlight the critical requirements for your application.
The list above and below covers some of the probe pin aspects which need to be determined or which may be critical for your application.
Please complete and/or tick your requirements and send this page to your closest E-tec sales office.
If you need any further assistance, please do not hesitate to call.

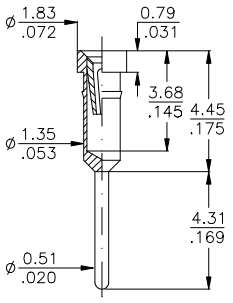
Overall height DIM. "A"		Plunger travel (stroke) DIM "B"		Pitch	
Contact force		Current rating		Mechanical life	
Bandwidth		Operating temperature			

Material specs for plunger	
Material specs for spring	
Material specs for barrel	
Material specs for connector body	

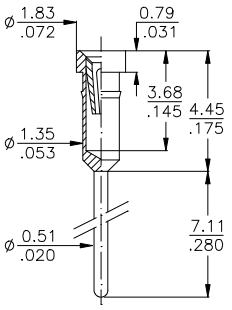
Socket Terminals



001



008



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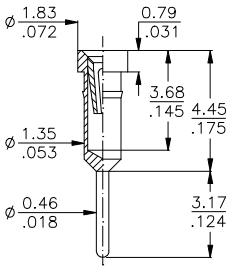
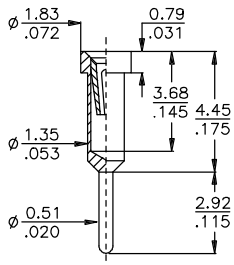
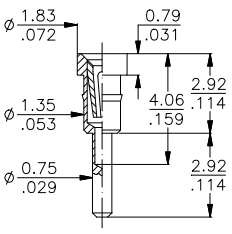


010

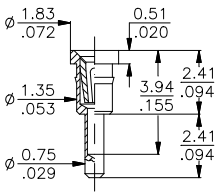
Terminal for Carrier use



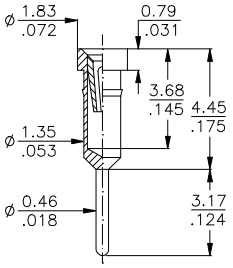
012



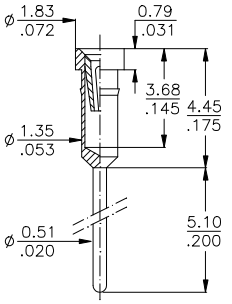
047



083

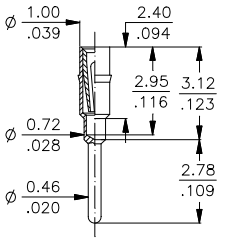


095 (soft brass)



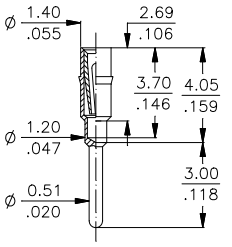
250

for pitch 1,27mm/.050" & 1,50mm/.059"



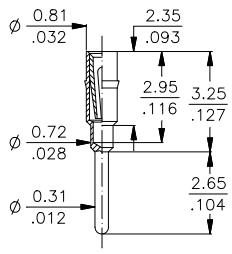
117

for pitch 1,778mm/.070" & 2,00mm/.079"



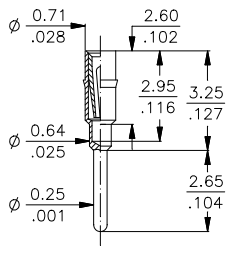
118

for pitch 1,00mm/.039"



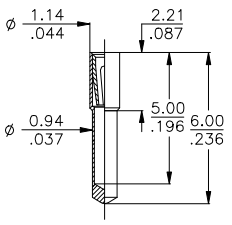
172

for pitch 0,80mm/.031"



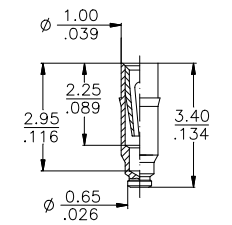
174

for pitch 1,27mm/.050"



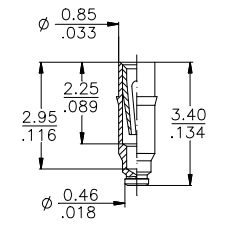
148

for SMT pitch 1,27mm/.050" 1,50mm/.059" – 2,00mm/.079"



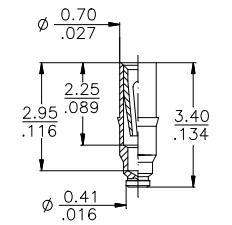
119

for SMT pitch 1,00mm/.039"



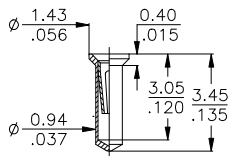
167

for SMT pitch 0,80mm/.031"



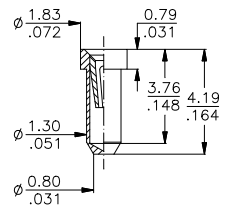
169

for SMT use possible



014

for SMT use possible



016

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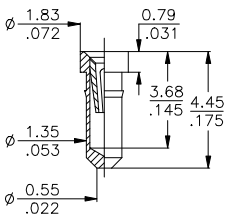
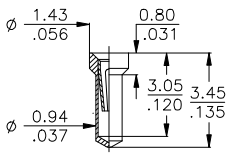


093

for SMT use possible



144

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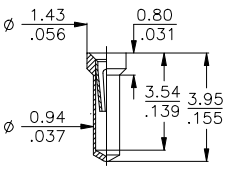

147

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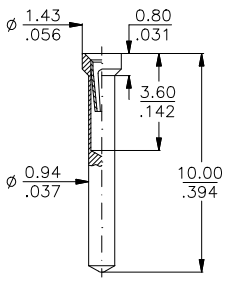
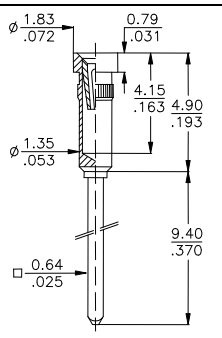


157

Wire Wrap Terminals



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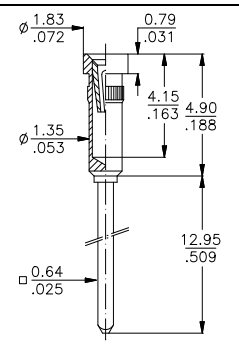

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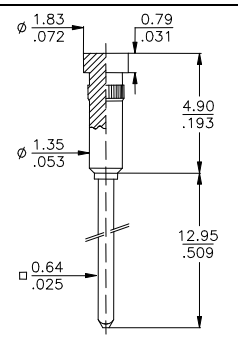
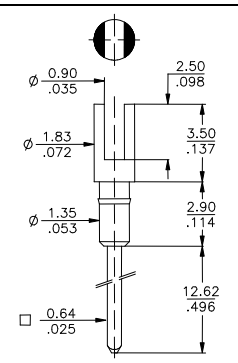
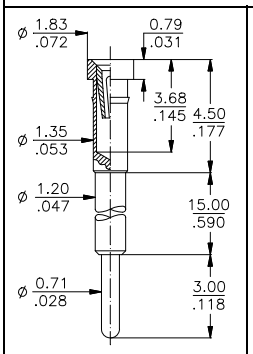


030 (Nail Head)



038

Raised Terminals



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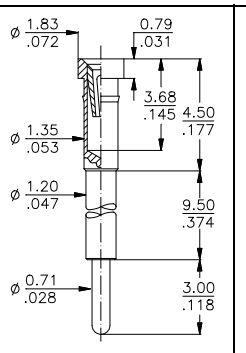

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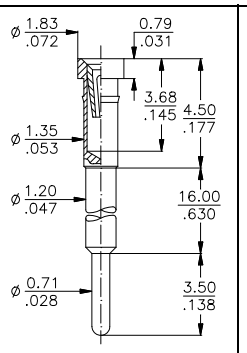

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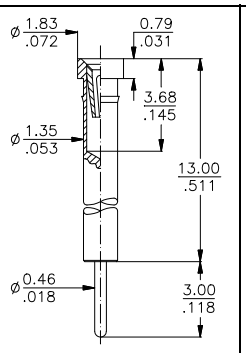

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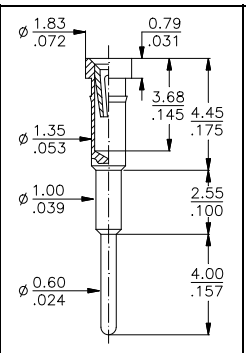

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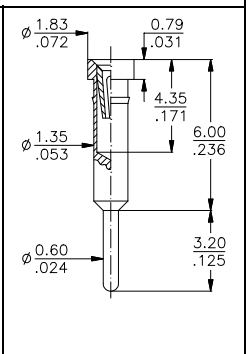

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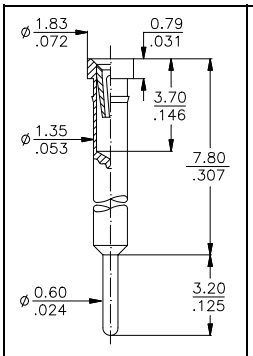

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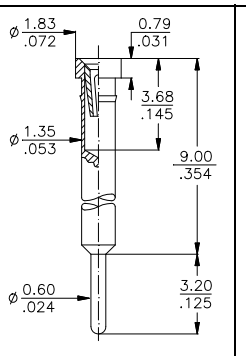

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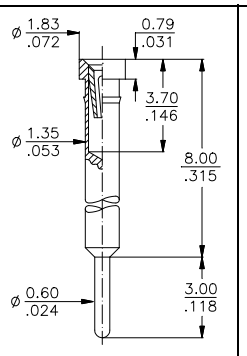

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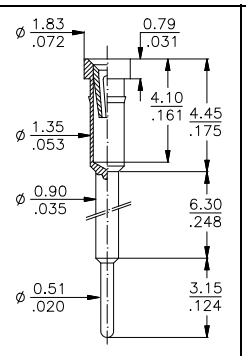
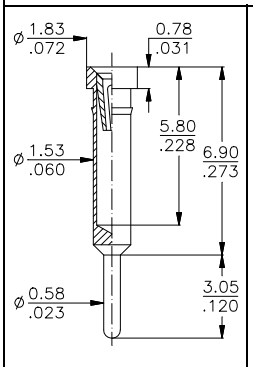


623

„Jumbo“ Contact & Male Terminals

(Contact accepts 0,64mm/.025” sq. & 0,90mm/.036” dia. Pins)



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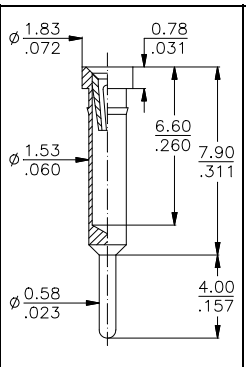

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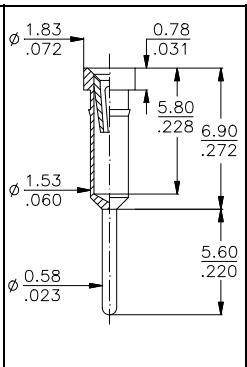

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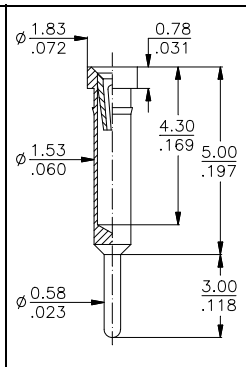
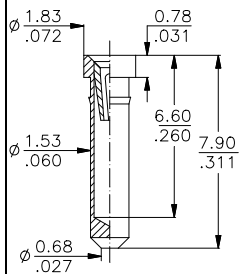


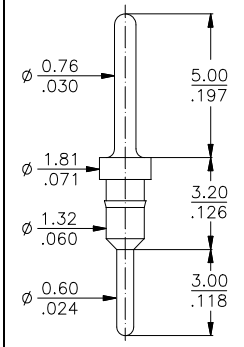
706

for SMT use



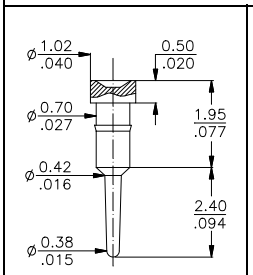
702

male Terminal



379

Solder Adapter Terminals



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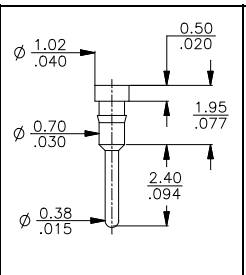

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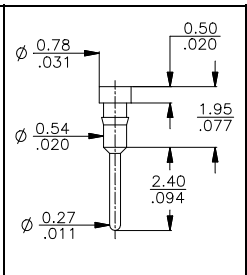

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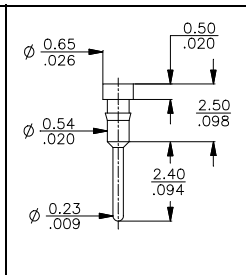

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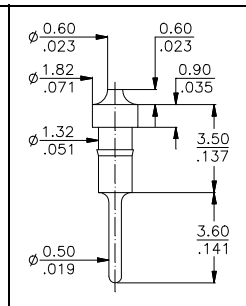

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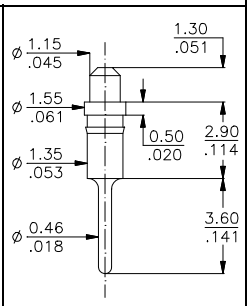
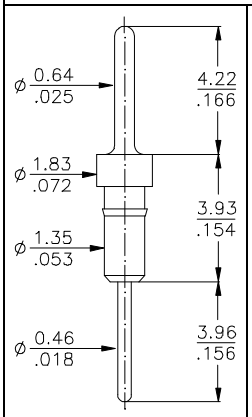


182

RoHS 2002/95/EC compliant

E-tec Interconnect

Board to Board Terminals



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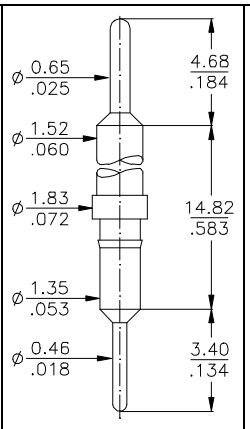

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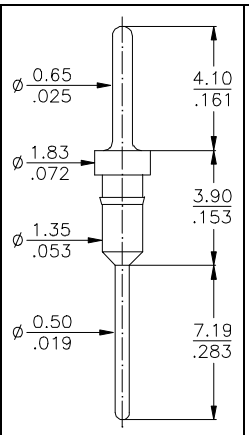

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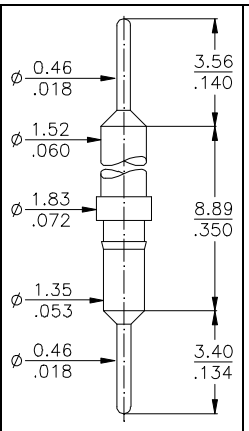

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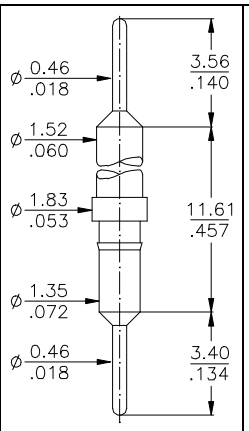

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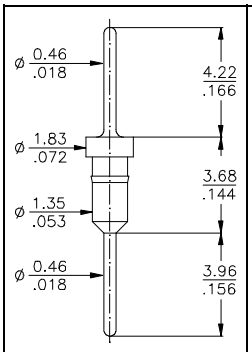

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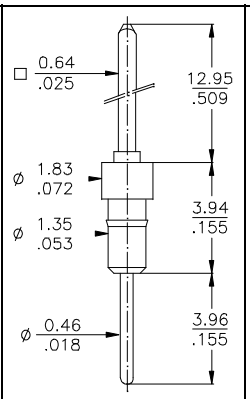

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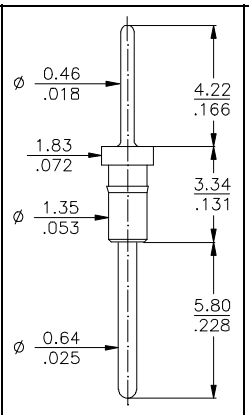

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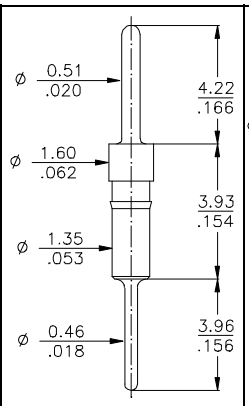

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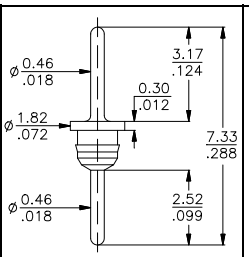

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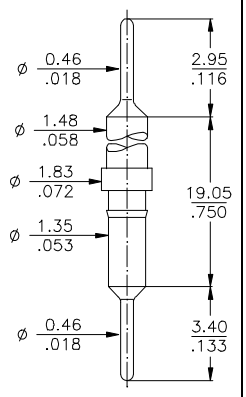

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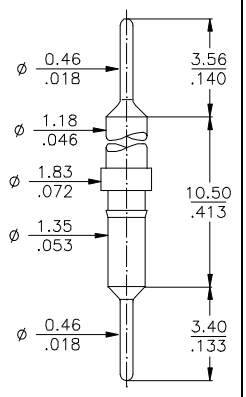

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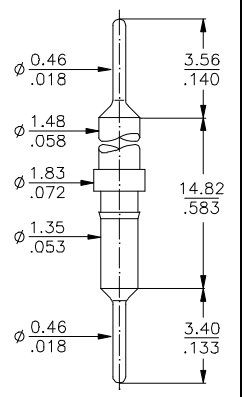

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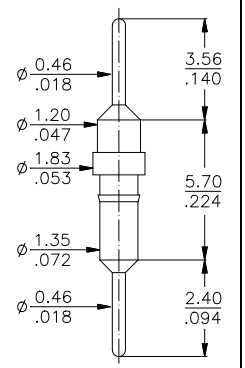

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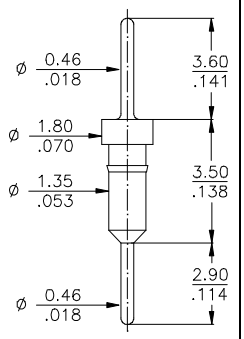
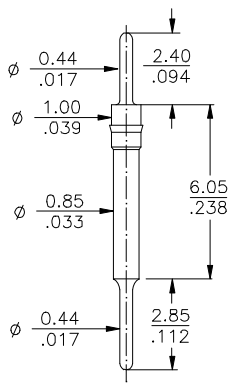


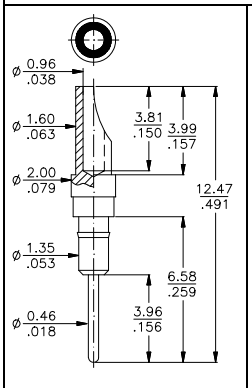
770

for pitch 1,27mm/.050“



774

Header Terminals



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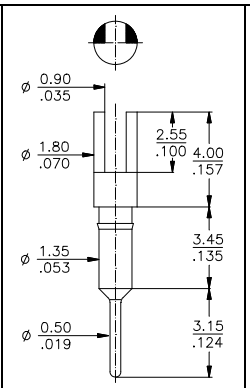

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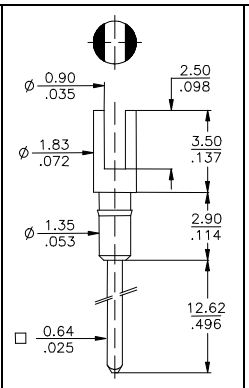


038 (Wire Wrap)

General Specifications for Precision Pin Sockets

Mechanical data

Average forces for available clip types:	
Standard type	1.80N insertion / 0.90N extraction
Low force type	0.70N insertion / 0.25N extraction
Super low force type	0.40N insertion / 0.15N extraction
High force type	4.00N insertion / 2.50N extraction
„Jumbo“ contact	1.40N insertion / 0.25N extraction
Other clips and forces available on request	
Contact life	min. 100 cycles
Vibration as per EN60352-4	sinusoidal, 10 to 500 Hz, 10g, 1 octave/min, 10 cycles for each axis
Shock as per EN60352-4	half sine, 50g, 11ms, 3 shocks in 3 axes
Thermal shock as per IEC 60068-2-14	-55°C/+125°C, 5 cycles, 30 minutes
Solderability as per IEC 60068-2-58	245°C to 255°C 5 sec; Sn97Ag3 solder alloy
Dry heat steady state as per IEC 60068-2-2	260°C for 20 sec.
Cold stead state as per IEC 60068-2-1	-55°C, 2h
Damp heat cyclic as per IEC 60068-2-30	55°C, 90-100%rH, 24h
Moisture sensitivity Level (JEDEC J-STD-020C)	2 for PBT & Nylon 1 for all other materials
PCB holes for 2.54mm pitch standard connectors	1.00mm diameter
Coplanarity thru-hole	0.30mm
General tolerances	+/- 0.10mm
Operating temperature (standard)	–55°C to +125°C

Processing temperature

injection molded insulator (high temp)	+250°C +0/-5°C for 20~40 sec. (reflow solder)
injection molded insulator (PBT)	+250°C +0/-5°C for 10 sec. (wave solder only)
Epoxy FR4 (Standard)	+220°C min. for 10 sec.
Epoxy FR4 (hi temp)	+260°C min. for 60 sec.

Electrical data

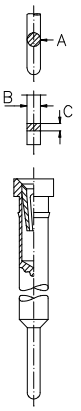
Contact resistance at 1A	4,3 mΩ typ.
Current rating (except “Jumbo” contact)	1A max.
“Jumbo” contact	3A max.
Contact capacitance at 1MHz	2pF max.
Insulation resistance at 500V DC for std & hi-temp	5×10^9 Ω min.
Insulation resistance at 500V DC for FR4 Epoxy	$>10^4$ MΩ
Breakdown voltage at 60 Hz	500 V AC min.
Contact resistance after 1000 ins./ext. cycles	≤ 7 mΩ

Material *(RoHS compliant)*	**Belongs to page:**
Standard temperature plastic: PBT UL 94 V-0	14, 15, 16, 23, 17,19, 20, 24 25, 26, 27, 29
High-temp plastic: Nylon, PCT, SPS, PPS, LCP UL 94 V-0	5, 6, 7, 8, 9, 10, 11, 12, 13, 14 15, 16, 21, 22, 20, 25, 26, 27 28, 33, 34, 35, 36, 37, 38, 39 40, 41, 42, 43
Epoxy FR4: UL 94 V-0 & UL 94 V-1	32, 5, 6, 7, 18, 22, 24, 29
PBT, Nylon, PCT, SPS, PPS, LCP & Epoxy FR4	If necessary pls. contact E-tec for Material specification.

Terminal: CuZn
Contact: BeCu

Male pin dimensions for standard clip
(except „Jumbo Contact“)
(DIN 41 870, IEC 191 for square IC-legs)

DIM	min.	max.
„A“ ∅	0,42 .016“	0,56 .022“
„B“ ▯	0,36 .014“	0,55 .023“
„C“ ▭	0,20 .008“	0,30 .014“



General information concerning the E-tec interconnect products

Plating:

Standard tin plating:
min. 2.50µm Sn *(leadfree)* over Ni

Standard gold plating:
flash, max. 0,10µm Au over Ni

Higher gold platings are offered on request

Specifications:

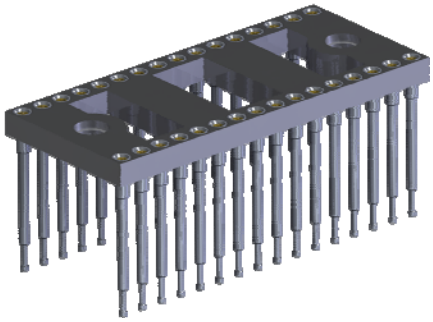
The data contained in this catalog is of general nature and refers to standard products.
For example a „Current rating“ at an ambient temperature of 25° C reflects the value per individual contact.
Should you require any further data or test reports, you can obtain this information from your nearest E-tec sales office.
The E-tec connectors conform with signal integrity requirements at high data and frequency rates. However we cannot offer a general information about the max. frequency or data transmission rate. For such a statement, it would require more information about the chosen configuration and pin-out, the length of the cable and/or any other specific requirements regarding the application itself and its related signal integrity.

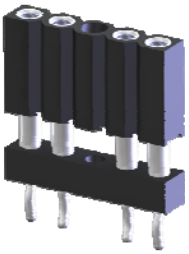
E-tec SMT connectors, male or female, are offered with a coplanarity of max. 0,10mm. They are adapted to all modern SMT soldering processes and they can be handled easily with all currently existing placing techniques. Customers may choose between various packaging options, such as tray, tube and tape & reel.

GENERAL POLICY

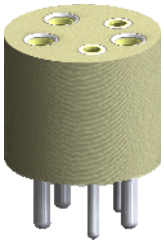
Contact your closest office for customized products

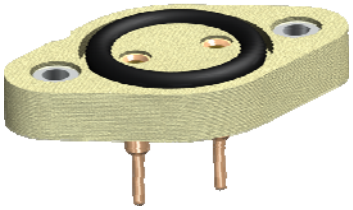
Consumer Electronics examples



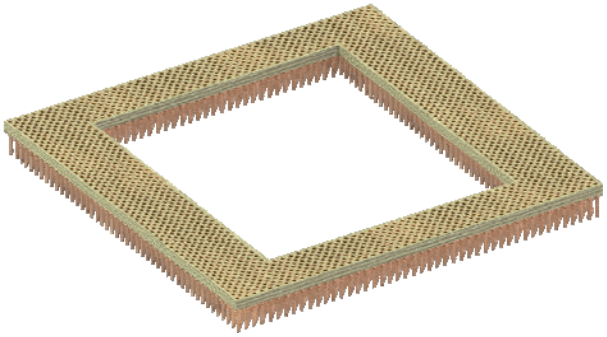


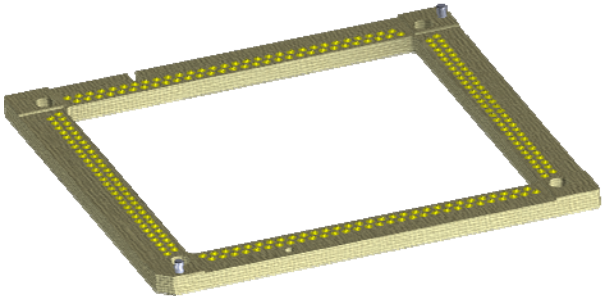
Industrial Electronics examples



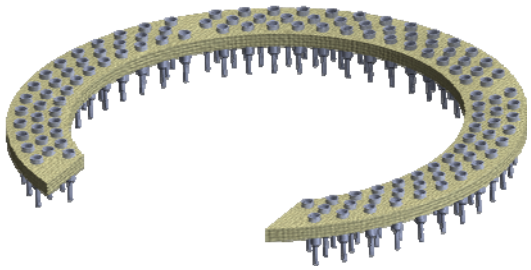


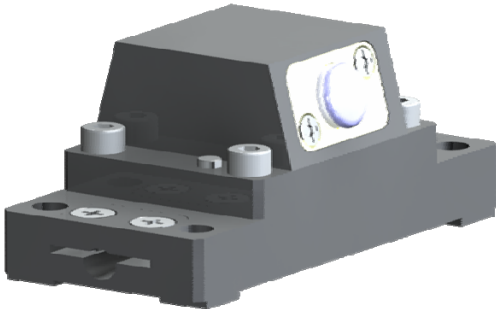
Military & Aerospace Electronics examples





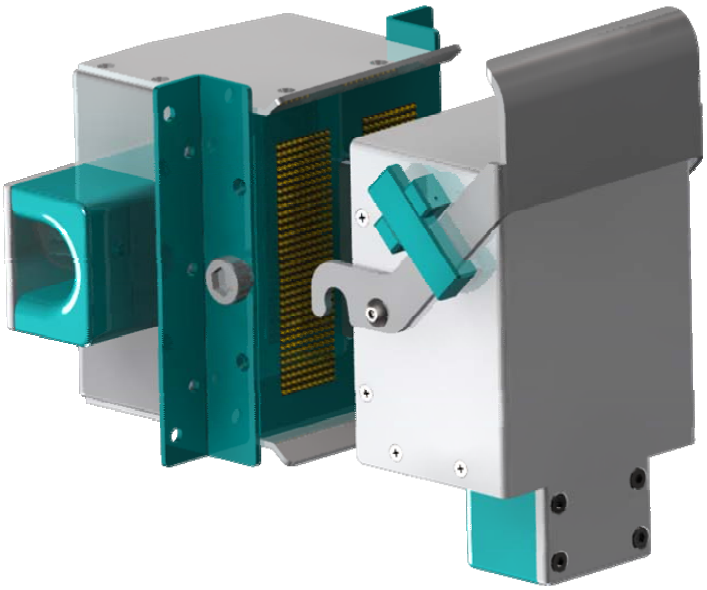
Test- & Measuring Electronics examples

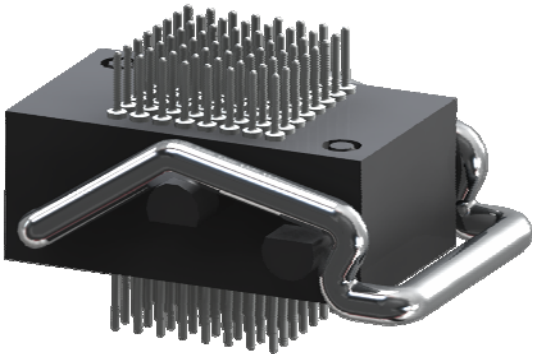


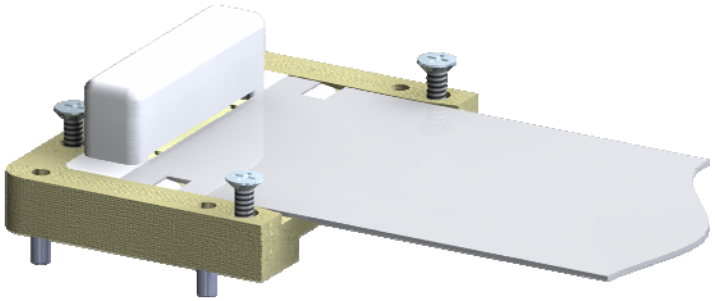


Contact your closest office for customized products

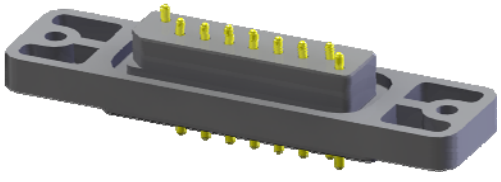
Medical Electronics examples

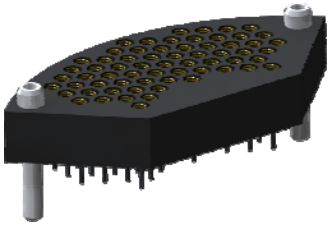


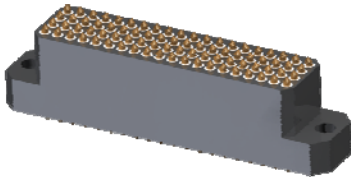




Telecommunication examples



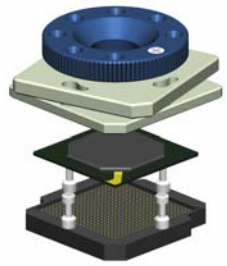
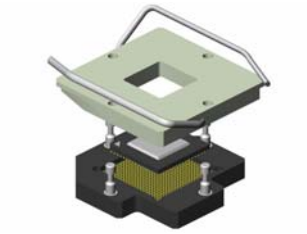
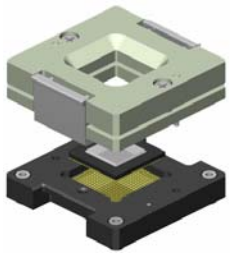
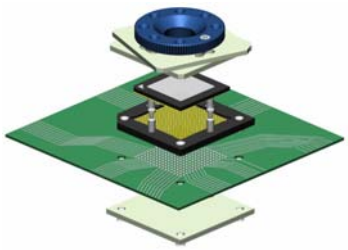
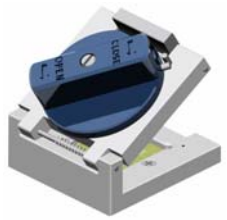
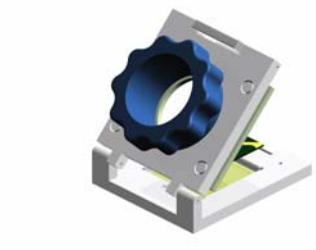
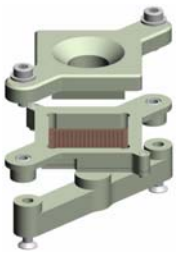
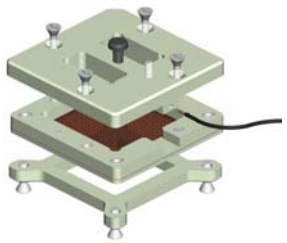
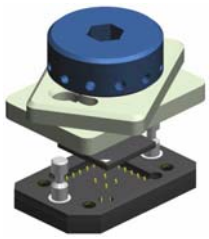
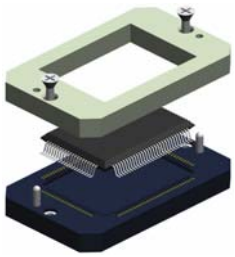




E-tec test sockets are custom made high temperature sockets to test IC packages on a PCB (BGA, LGA, CGA, QFN, GullWing type, etc.).
Generally used for prototyping, pre-production and test & burn-in, the E-tec test sockets allow the customer to insert an IC package into the socket, test it in its original condition and remove it again for final soldering to the PCB after all tests have been completed. The sockets are easily adaptable to customer requirements.

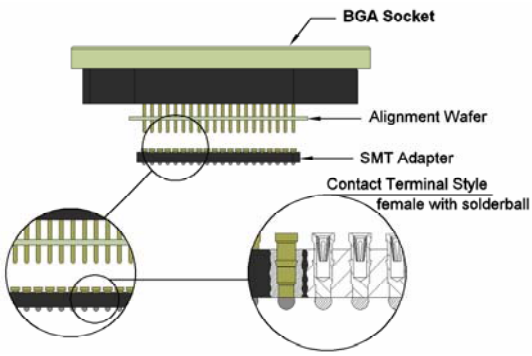
For more information please refer to our Test Socket catalog TS-01

Test Sockets (BGA, LGA, CGA, QFN, GullWing Type) available with a large variety of locking systems

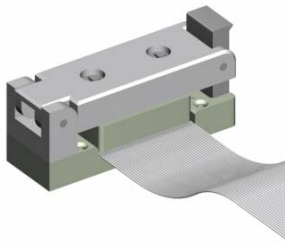
Adapter Solutions

An alternative to direct soldering of test sockets to the PCB.
A light weight SMT adapter is soldered to the PCB first, and then the test socket can be plugged into this adapter and unplugged again.



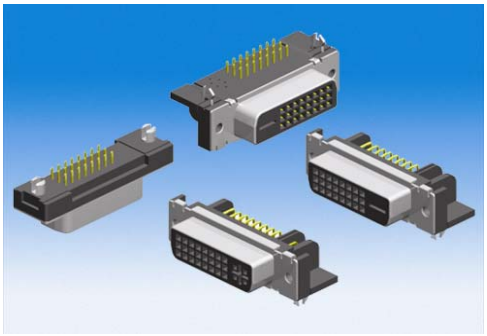
ZIF Test Sockets for Flex Cable

Used for testing components (scanner, membrane switch, etc) which need to be connected via a FFC/FPC cable.

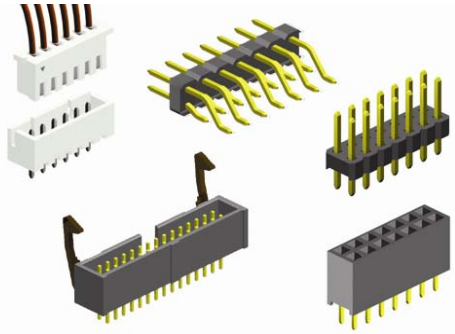



Other products from E-tec

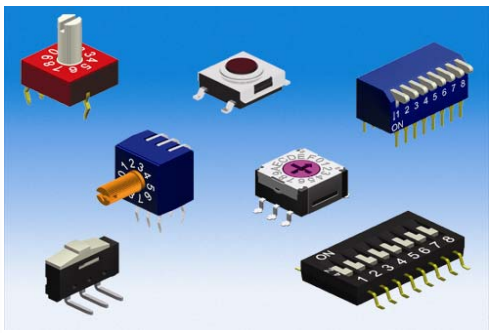
Please contact your closest sales office for further information.



DVI Connectors

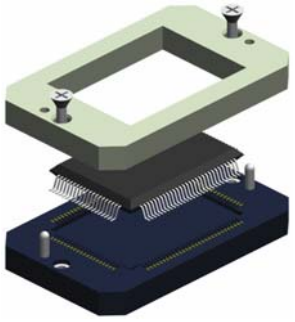


PCB Connectors

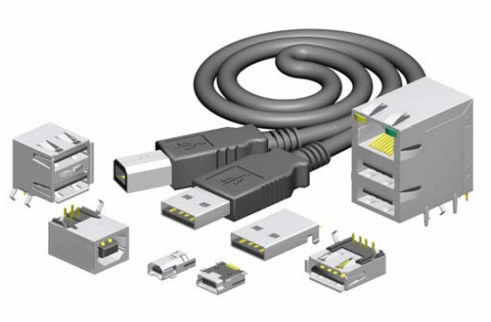


DIP Switch

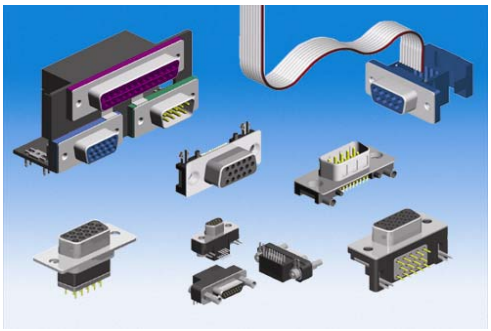
Mini DIN Connectors



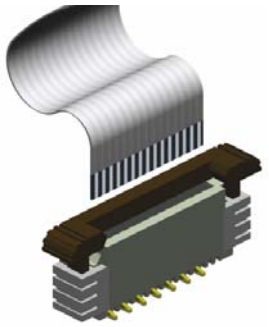
Gullwing Chip Sockets



USB & IEEE 1394 Connectors

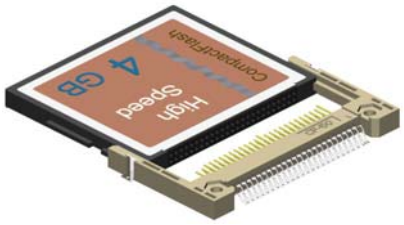


D-Sub Connectors

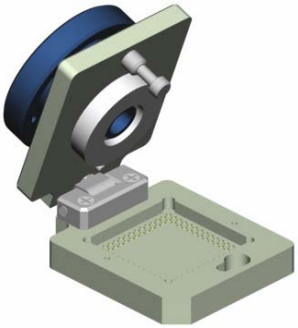


Flex Cable Connectors

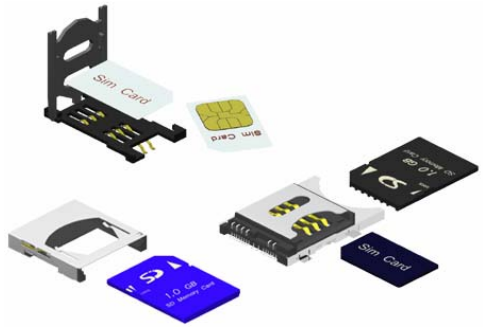
HDMI Connectors



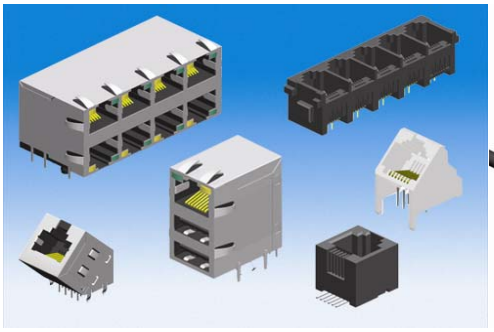
Compact Flash Connector



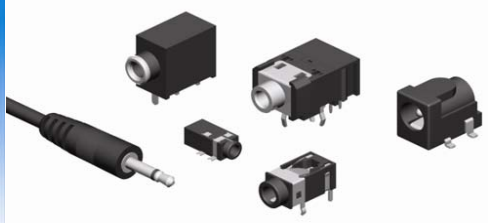
Ball / Land Grid Array Sockets



Multi Media Card Connectors



Modular Plugs & Jacks



Phono - & DC - Power Connectors

RF - Connectors

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