



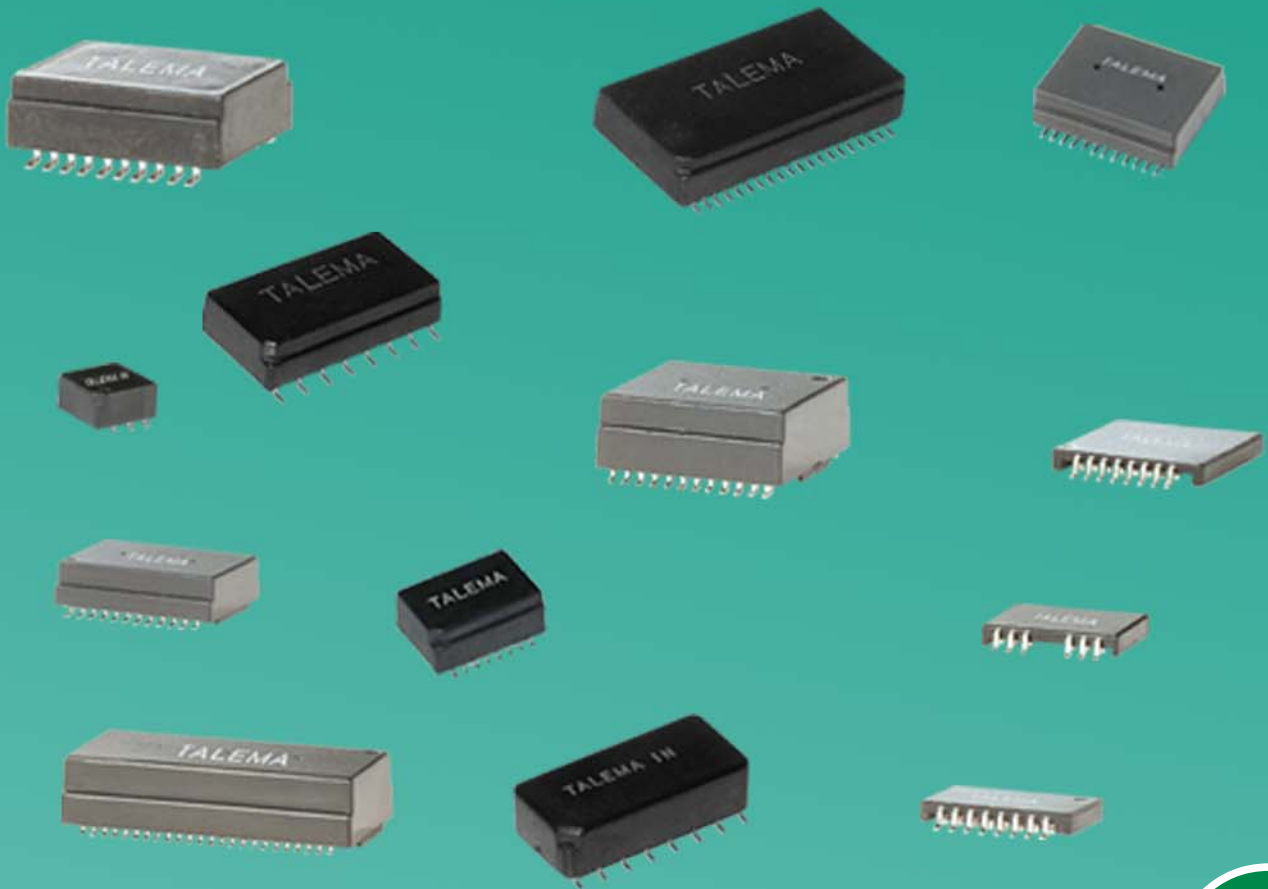
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- Interface Transformers •
- SMD and Through Hole •
- Common mode interface chokes •
- Single, Dual and Octal Transformer Packaging •

LAN Magnetic Components

Interface Transformers and Chokes for Ethernet & Telecom Applications



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TALEMA PROFILE

Founded in 1975, The TALEMA International Group has established itself as a world leader in the manufacture of toroidal transformers and related magnetic components. Our strong technical engineering expertise has contributed to the growth of our current workforce to over 1,200 employees in manufacturing locations in the Czech Republic and India.

Over the years The Talema Group has succeeded in designing, producing and delivering in excess of 50 million transformers to its customers. The recent incorporation of xDSL technology into our extensive range of Telecom and LAN magnetics offerings, such as ISDN, 10Base-T, Ethernet transformers for 100/1000Base-T, has broadened our market offering to an even higher level.

QUALITY

The TALEMA Group has a total commitment to quality and employs Lean Six Sigma training for engineering, production and administrative staff to help achieve a goal of zero defects. All facilities maintain very stringent Quality Control and Quality Assurance procedures and are certified to and manufacture in accordance with ISO-9001:2000, TS-16949:2002 and meet a broad range of International Standards including UL, VDE, IEC and EN.

ENVIRONMENT

All TALEMA International Group manufacturing facilities are RoHS compliant and all chokes, inductors and HF components are produced in an Environment Management System (EMS) facility which is certified to ISO-14001:2004.



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IC Selection Guide for 10Base-T Isolation Transformer Modules

Talema manufactures a broad range of Isolation Transformer Modules for 10Base-T, 100Base-T, 1000Base-T, AUI and ATM applications. Many of the modules include a common mode choke for noise attenuation matched to the specified transceiver and are designed for extended temperature range (-40°C to +85°C) applications. All parts are fullyRoHS compliant and manufactured in an ISO-14001:2004 certified Talema factory.

IC Manufacturer	IC Part Number	Turns Ratio		Talema Part Number				
		Transmit	Receive	Miniature Single Port 12.8x9.6x6.0	Standard Single Port 20.0x12.7x5.8	Quad Port 28.0 x 16.0 x 5.8 CMC Tx/Rx	Quad Port 28.0 x 16.0 x 5.8 CMC Tx only	Quad Port 28.0 x 16.0 x 5.8 No CM Choke
AMD	AM79C984 AM79C985 AM79C988 AM79C989	1ct:1ct	1 : 1			TMQ-100A1/E1K1/N1-J TMQ-140A1-J	TMQ-100G1/J1/M1/P1-J TMQ-140G1-J	TMQ-100B1/F1/L1/O1-J TMQ-140B1-J
		1ct:1ct	1ct:1ct	TMM-100A1-J TMCM-100A1-J TMCM-200A1-J	TMS-100A1-J TMCS-100A1-J TMCS-200A1-J			
		1ct:1.414ct	1:1			TMQ-140A2/C2/E2-J	TMQ-140G2/H2/J2-J	TMQ-140B2/D2/F2-J
		1ct:1.414ct	1ct:1ct	TMCM-200A2-J TMCM-140A2-J TMM-140A2-J	TMCS-200A2-J TMCS-140A2-J TMS-140A2-J			
Cirrus Logic (Crystal)	CS8900A-CQ/IQ, CS8904-CM5 CS8920	1ct:1.414ct	1:1					
		1ct:1.414ct	1ct:1ct	TMCM-200A2-J TMCM-140A2-J TMM-140A2-J	TMCS-200A2-J TMCS-140A2-J TMS-140A2-J			
	CS8900A-CQ3/IQ3 CS8904-CM3	1ct:2.5ct	1:1	TMM-200A4-J TMCM-200A4-J	TMS-200A4-J TMCS-200A4-J	TMQ-200K4-J		
Fujitsu	MB86951 MB86961 MB86964 MB86965B	1ct:1.414ct	1ct:1ct	TMCM-200A2-J TMCM-110B2-J TMM-140A2-J	TMCS-200A2-J TMCS-110B2-J TMS140A2-J			
	LXT901, LXT901A LXT907, 914, 915 LXT916, 917, 944	1ct:1.414ct	1ct:1ct	TMCM-200A2-J TMCM-110B2-J TMM-140A2-J	TMCS-200A2-J TMCS-110B2-J TMS140A2-J			
	LXT905 LXT908	1:2 (2x) 1ct2ct	1:1(2x) 1ct:1ct					
		1ct:1.414ct	1:1			TMQ-140A2/C2/E2-J	TMQ-140G2/H2/J2-J	TMQ-140B2/D2/F2-J
Intel (Level One)	LXT914, 915, 916 LXT917, 918, 944		1:1 (4x)					TMM-140B1-J TMM-140B2-J
		1:1.414 (4x)						
		1ct:1.414ct	1ct:1ct	TMCM-140A6-J TMM-100A6-J	TMCS-140A6-J TMS-100A6-J			
µLinear	ML2652, ML2653 ML4652, ML4658	2ct:1ct	1ct:1ct					
	ML2652	2ct:1ct	1:1			TMQ-150A6/E6/K6-J		TMQ-B6/F6/L6-J
National Semi- conductor		1ct:2ct	1:1			TMQ-200A3/E3/K3-J	TMQ-200G3/J3/M3-J	TMQ-200B3/F3/L3-J
		1:2 (2x)	1:1 (2x)					
	DP83953 DP83907 DP83924A	1ct:2ct	1ct:1ct	TMCM-140A3-J TMCM-120A3-J TMCM-200A5-J	TMCS-140A3-J TMCS-120A3-J TMCS-200A5-J			
		1ct:1ct	1:1			TMQ-100A1/E1K1/N1-J TMQ-140A1-J	TMQ-100G1/J1/M1/P1-J TMQ-140G1-J	TMQ-100B1/F1/L1/O1-J TMQ-140B1-J
Realtek	RTL8301 80C24	1ct:1ct	1:1					
		2ct:1ct	1ct:1ct	TMCM-140A6-J TMM-100A6-J	TMCS-140A6-J TMS-100A6-J			
SEEQ	80C24, 80C25	2ct:1ct	1:1			TMQ-150A6/E6/K6-J		TMQ-B6/F6/L6-J
Texas Instruments	TNETE100A	1ct:1.414ct	1ct:1ct	TMCM-200A2-J TMCM-110B2-J TMM-140A2-J TMCM-140A2-J	TMCS-200A2-J TMCS-110B2-J TMS-140A2-J TMCS-140A2-J			
		1ct:1.414ct	1:1			TMQ-140A2/C2/E2-J	TMQ-140G2/H2/J2-J	TMQ-140B2/D2/F2-J
	TNETE2004	1ct:1.414ct	1ct:1ct	TMCM-200A2-J TMCM-110B2-J TMM-140A2-J	TMCS-200A2-J TMCS-110B2-J TMS140A2-J			
	TNETE2008	1ct:1ct	1:1	TMM-100A1-J TMCM-100A1-J TMCM-200A1-J	TMS-100A1-J TMCS-100A1-J TMCS-200A1-J	TMQ-100A1/E1K1/N1-J TMQ-140A1-J	TMQ-100G1/J1/M1/P1-J TMQ-140G1-J	TMQ-100B1/F1/L1/O1-J TMQ-140B1-J



TM Series • 10 Base-T Single Port SMD Transformer Modules

Features

- Low profile and light weight 10 Base-T modules facilitate pick and place compatibility and speed of placement
- Meets requirements of IEEE 802.3
- Consistent and reliable coplanarity
- Excellent quality at extremely competitive price due to high volume production
- Manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- Fully RoHS compliant and meets lead free reflow level J-STD-020C



Electrical Specifications @ 25°C

Minimum isolation voltage: 1500 Vrms
 Operating Temperature Range: -40°C to +85°C
 Storage Temperature: -40°C to +125°C

Test Frequency: Inductance, Interwinding Capacitance and Leakage Inductance measured @ 100kHz/20mVrms

Standard Packing: Tape and Reel

Quality and consistency are guaranteed through 100% testing of the specified parameters for primary inductance, leakage inductance, turns ratio, DC resistance and interwinding capacitance. This ensures that the return loss and pulse wave shape requirements can be fully maintained. Additionally, all parts are tested for 1500V minimum isolation.

Applications

Talema 10Base-T transformer modules contain transmit and receive isolation transformers to maintain consistent wave shape and suppression of common mode noise while providing equipment isolation per IEEE 802.3. High impedance common mode quad chokes for additional EMI suppression have been added on some models as required for FCC and CISPR 22 Class B certification.

TM Series • 10 Base-T Single Port SMD Transformer Modules

Part Number	Turns Ratio ±5%		Pri. OCL (µH Min)	L _L (µH Max) Pri / Sec	C _{WW} (pF Max) Pri / Sec	DCR (Ohms Max.)				V _P (Vrms)	Schematic
	1-3:16-14	6-8:11-9				1-3	16-14	6-8	11-9		
TM__-100A1-J	1ct:1ct	1ct:1ct	100	0.25	9	0.30	0.30	0.30	0.30	1500	A
TM__-100A6-J	2ct:1ct	1ct:1ct	100	0.25	12	0.60	0.30	0.30	0.30	1500	A
TM__-112A3-J	1ct:1ct	1ct:2ct	112	0.30	8	0.30	0.30	0.30	0.60	1500	A
TM__-140A2-J	1ct:1ct	1ct:1.414ct	140	0.20	12	0.30	0.30	0.30	0.45	1500	A
TM__-140A3-J	1ct:1ct	1ct:2ct	140/25	0.30	12	0.30	0.30	0.30	0.45	1500	A
TM__-150A6-J	2ct:1ct	1ct:1ct	150	0.20	12	0.60	0.30	0.30	0.30	1500	A
TM__-200A1-J	1ct:1ct	1ct:1ct	200	0.20	10	0.30	0.30	0.30	0.30	1500	A
TM__-200A2-J	1ct:1ct	1ct:1.414ct	200	0.50	15	0.30	0.30	0.30	0.45	1500	A
TM__-200A4-J	1ct:1ct	1ct:2.5ct	200/35	0.40	15	0.30	0.30	0.30	0.80	1500	A
TM__-200A5-J	1ct:2ct	1ct:1ct	50/200	0.20	12	0.30	0.60	0.30	0.30	1500	A
TM__-140B1-J	Pri. Winding:Sec. Winding		140	0.20	12	Pri. Windings		Sec. Windings		1500	B
	1:1 (4x)					0.30	0.30				
TM__-140B2-J	1:1.41(4x)		140	0.20	12	0.30	0.45		1500	B	

Ordering Information:

TM__-XXX-X X-J * Specify desired Package Style "S" or "M".

"S" = Chip style surface mount, 0.100" (2,54mm) terminal spacing.

"M" = Chip style miniature surface mount, 0.050" (1,27mm) terminal spacing.

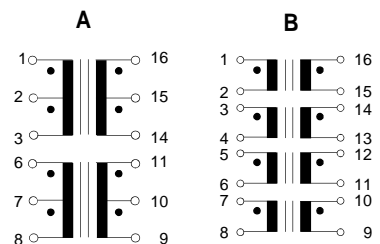
Example: Without choke, "S" style package and schematic "A" - TMS-100 A1
 Without choke, "M" style package and schematic "B" - TMM-140 B2.

With choke, "S" style package, Schematic "B" - TMCS-110 B2

With choke, "M" style package, Schematic "A" - TMC~~M~~-100 A1

See next page for electrical specifications for modules with common mode chokes for EMI noise suppression and for packaging styles, dimensions and schematics.

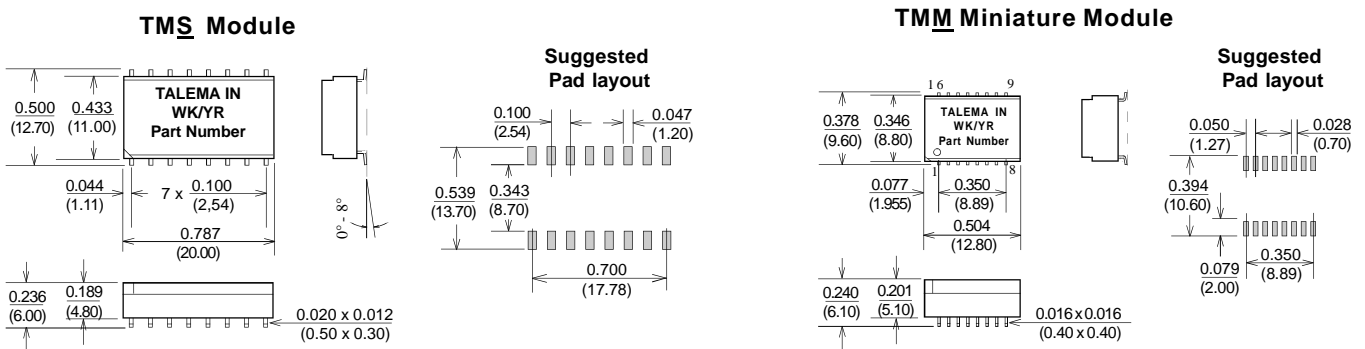
Schematics without Choke



TM Series • 10 Base-T Transformers with Common Mode Choke for EMI Suppression

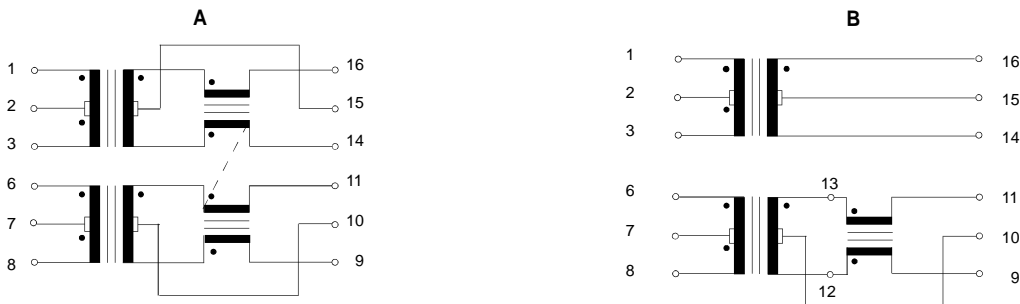
Part Number	Turns Ratio ±5%		Pri. OCL (µH Min)	L _L (µH Max) Pri / Sec	C _{WW} (pF Max) Pri / Sec	DCR (Ohms Max.)				V _P (Vrms)	Schematic
	1-3:16-14	6-8:11-9				1-3	16-14	6-8	11-9		
TMC_-100A1-J	1ct:1ct	1ct:1ct	100	0.30	8	0.30	0.30	0.30	0.30	1500	A
TMC_-110B2-J	1ct:1ct	1ct:1.414ct	110	0.40	15	0.30	0.30	0.30	0.90	1500	B
TMC_-112B3-J	1ct:1ct	1ct:2ct	112	0.30	8	0.30	0.30	0.30	0.90	1500	B
TMC_-120A3-J	1ct:1ct	1ct:2ct	120/20	0.40	9	0.90	0.90	0.90	0.90	1500	A
TMC_-140A2-J	1ct:1ct	1ct:1.414ct	140	0.40	20	0.40	0.40	0.40	0.40	1500	A
TMC_-140A3-J	1ct:1ct	1ct:2ct	140	0.2	12	0.30	0.30	0.30	0.90	1500	A
TMC_-140A6-J	2ct:1ct	1ct:1ct	140	0.3	12	0.60	0.30	0.30	0.30	1500	A
TMC_-150A6-J	2ct:1ct	1ct:1ct	150	0.90	10	0.70	0.35	0.35	0.35	1500	A
TMC_-200A1-J	1ct:1ct	1ct:1ct	200	0.25	10	0.30	0.30	0.30	0.30	1500	A
TMC_-200A2-J	1ct:1ct	1ct:1.414ct	200	0.5	12	0.30	0.30	0.30	0.75	1500	A
TMC_-200A4-J	1ct:1ct	1ct:1.25ct	200	0.5	15	0.30	0.30	0.30	1.05	1500	A
TMC_-200A5-J	1ct:2ct	1ct:1ct	200	0.3	8	0.30	0.90	0.30	0.30	1500	A
TMC_-350A4-J	1ct:1ct	1ct:2.5ct	350	0.8	30	0.30	0.30	0.30	1.05	1500	A

Dimensions



Dimensions: Inches (Millimeters)
Tolerance: ±0.010 (0.25) unless specified otherwise
Surface coplanarity will be 0.004 (0.01) maximum

Schematics with Choke



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TMQ Series • 10Base-T Quad SMD Transformer Modules

Features

- Low profile (5.8mm) and light weight (4.0 g) 10Base T Quad modules facilitate pick and place compatibility and speed of placement
- Four port modules meet requirements of IEEE 802.3
- Consistent and reliable coplanarity
- Manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- Fully RoHS compliant and meets lead free reflow level J-STD-020C



Electrical Specifications

Ratings @ 25°C ambient

Minimum isolation voltage: 1500 Vrms

Operating Temperature Range: -40°C to +85°C

Storage Temperature: -40°C to +125°C

Insulation Resistance: 10,000 MOhm minimum

Test Frequency: Inductance, Interwinding Capacitance and

Leakage Inductance measured @ 100kHz/20mVrms

Quad Choke: 36µH; Turns Ratio: 1:1:1:1

Standard packing in tape and reel

Quality and consistency is guaranteed through 100% testing of the specified parameters for primary inductance, leakage inductance, turns ratio, DC resistance and interwinding capacitance. This ensures that the return loss and pulse wave shape requirements can be fully maintained. Additionally, all parts are tested for 1500V minimum isolation.

Applications

Talema 10BaseT Quad transformer modules contain transmit and receive isolation transformers to maintain consistent wave shape and suppression of common mode noise while providing equipment isolation per IEEE 802.3. High impedance common mode quad chokes for additional EMI suppression have been added on some models as required for FCC and CISPR 22 Class B certification.

TMQ Series • SMD 10Base-T Quad Isolation Transformer Module

Part Number			Turns ratio ±2%		Pri. OCL (µH Min.)	L _L (µH Max)	C _{WW} (pF Max.)	DCR (Ohms Max)	V _P (Vrms)
Optional Common Mode Choke			Tx	Rx	Tx/Rx	Tx/Rx	Pri/Sec	Tx / Rx	
Tx & Rx	Tx Only	None							
TMQ-100-A1-J	G1	B1	1ct:1ct	1:1	100/100	0.30 / 0.30	12	0.30 / 0.30	1500
TMQ-100-E1-J	J1	F1	1ct:1ct	1:1	100/100	0.30 / 0.30	12	0.30 / 0.30	1500
TMQ-100-K1-J	M1	L1	1ct:1ct	1:1	100/100	0.30 / 0.30	12	0.30 / 0.30	1500
TMQ-100-N1-J	P1	O1	1ct:1ct	1:1	100/100	0.30 / 0.30	12	0.30 / 0.30	1500
TMQ-140-A1-J	G1	B1	1ct:1ct	1:1	140/140	0.40 / 0.40	12	0.40 / 0.40	1500
TMQ-140-C1-J	H1	D1	1ct:1ct	1:1	140/140	0.40 / 0.40	12	0.40 / 0.40	1500
TMQ-140-A2-J	G2	B2	1ct:1.414ct	1:1	140/140	0.40 / 0.40	12	0.40 / 0.40	1500
TMQ-140-C2-J	H2	D2	1ct:1.414ct	1:1	140/140	0.40 / 0.40	12	0.40 / 0.40	1500
TMQ-140-E2-J	J2	F2	1ct:1.414ct	1:1	140/140	0.40 / 0.40	12	0.40 / 0.40	1500
TMQ-140-K2-J	M2		1ct:1.414ct	1:1	140/140	0.40 / 0.40	12	0.40 / 0.40	1500
TMQ-150-A6-J	--	B6	2ct:1ct	1:1	150/150	0.90 / 0.30	10	0.35 / 0.35	1500
TMQ-150-E6-J	--	F6	2ct:1ct	1:1	150/150	0.90 / 0.30	10	0.35 / 0.35	1500
TMQ-150-K6-J	--	L6	2ct:1ct	1:1	150/150	0.90 / 0.30	10	0.35 / 0.35	1500
TMQ-200-A3-J	G3	B3	1ct:2ct	1:1	50/200	0.30 / 0.30	12	0.35 / 0.50	1500
TMQ-200-E3-J	J3	F3	1ct:2ct	1:1	50/200	0.30 / 0.30	12	0.35 / 0.50	1500
TMQ-200-K3-J	M3	L3	1ct:2ct	1:1	50/200	0.30 / 0.30	12	0.35 / 0.50	1500
TMQ-200-K4-J	--	--	1ct:2.5ct	1:1	35/200	0.10 / 0.40	15	0.30 / 0.50	1500

Ordering Information:

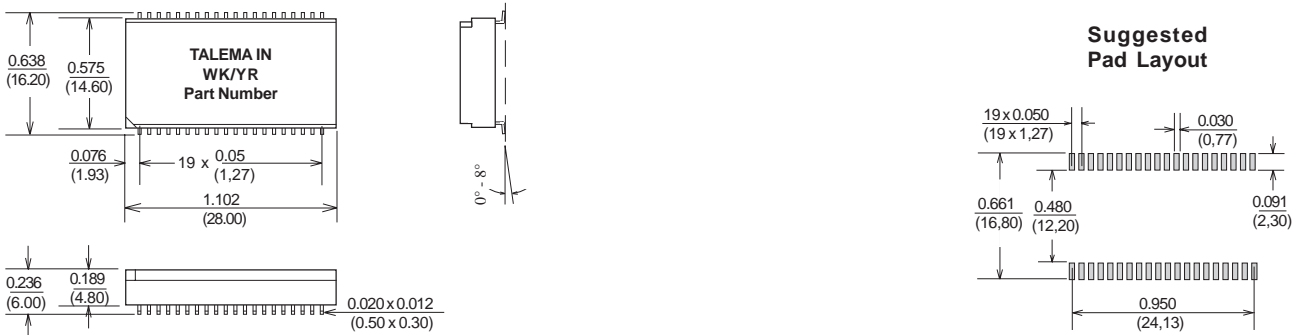
TMQ-XXX- * X-J

* Specify common mode noise suppression choke preference - the schematic letter designation should be inserted from columns 1, 2 or 3

1. The first column - common mode choke on both the Tx and Rx transformers
2. The second column - common mode choke only on the Tx transformer
3. The third column - common mode choke not included in module

Dimensions & Schematics • TMQ Series 10Base-T Quad Port Transformer Modules

Dimensions

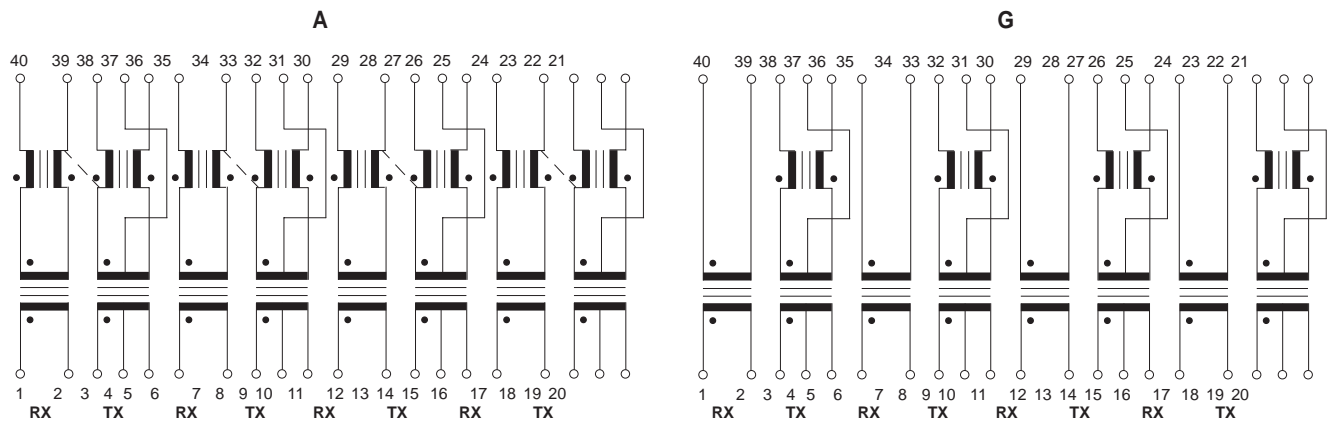


Surface coplanarity will be <0.004 (0.10)

Dimensions: Inches (Millimeters)

Tolerance: ±0.010 (0.25) unless specified otherwise

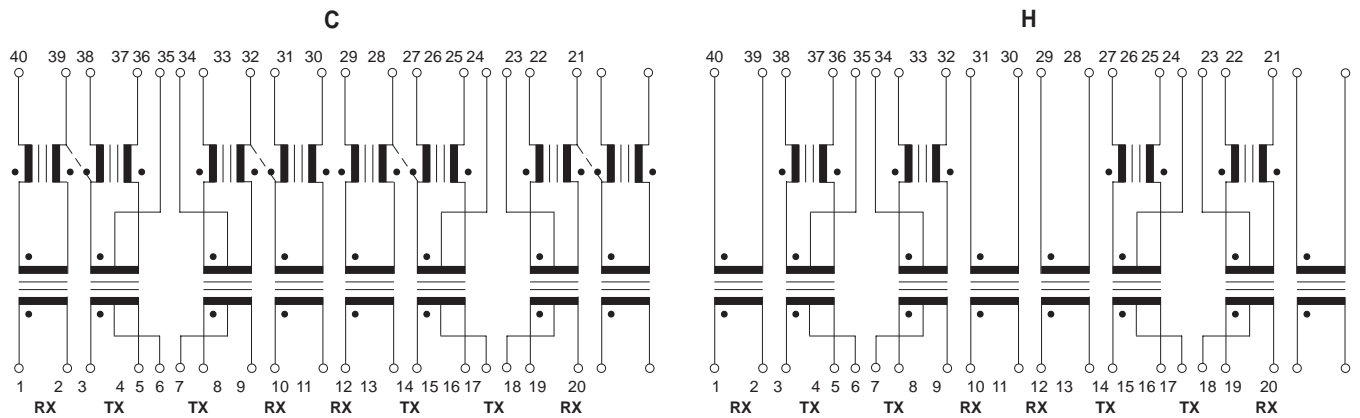
Schematics



A = CM Choke on Tx & Rx

G = CM Choke on Tx only

B = Schematic as above but without CM Choke



C = CM Choke on Tx & Rx

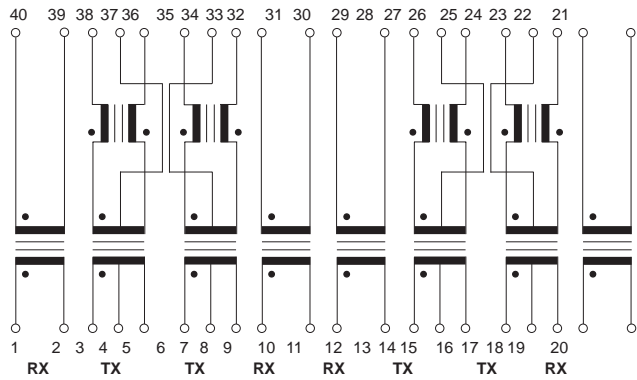
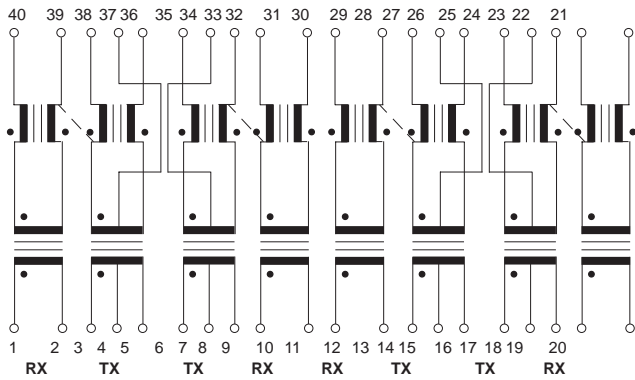
H = CM Choke on Tx only

D = Schematic as above but without CM Choke

Schematics • TMQ Series 10Base-T SMD Quad Port Transformer Modules

E

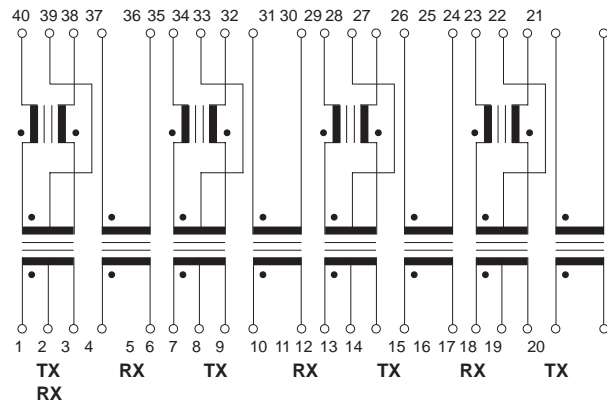
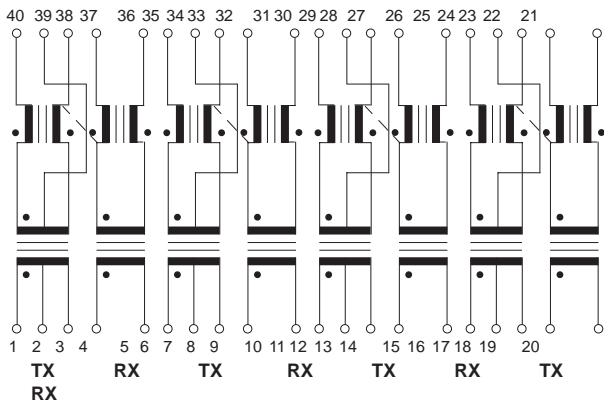
J



E = CM Choke on Tx & Rx
 J = CM Choke on Tx only
 F = Schematic as above but without CM Choke

K

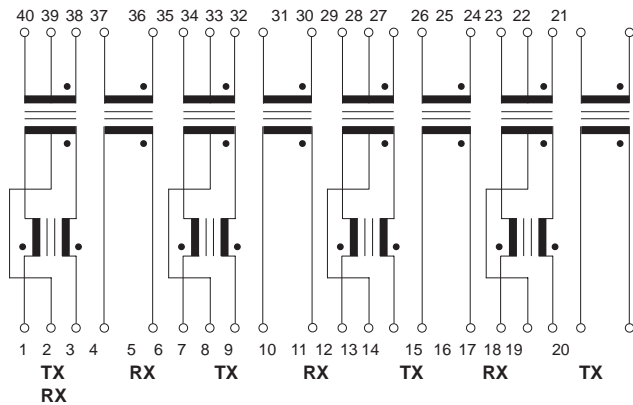
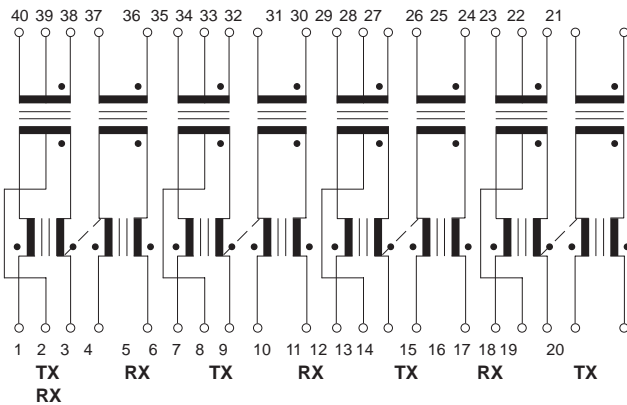
M



K = CM Choke on Tx & Rx
 M = CM Choke on Tx only
 L = Schematic as above but without CM Choke

N

P



N = CM Choke on Tx & Rx
 P = CM Choke on Tx only
 O = Schematic as above but without CM Choke



TAM Series • AUI Ethernet Isolation Transformers

Features

- Meets requirements of IEEE 802.3
- Supports 10Base2, 10Base5 & 10Base-T
- low profile, light weight SMD packages for high density board placement
- designed for pick and place compatibility while providing consistent and reliable coplanarity
- excellent quality at extremely competitive price due to high volume production
- Manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- Fully RoHS compliant and meets lead free reflow level J-STD-020C



Electrical Specifications

Ratings @ 25°C ambient

Minimum Isolation Voltage: 2000Vrms

Operating Temperature Range: -10° to +85°C

Storage Temperature: -40°C to +125°C

Test Conditions: Inductance, Coupling Capacitance and Leakage Inductance measured @ 100kHz, 20mVrms

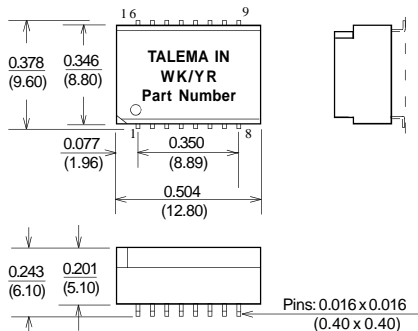
Standard Packaging: Tape & Reel

TAM Series - SMD AUI Isolation Transformers

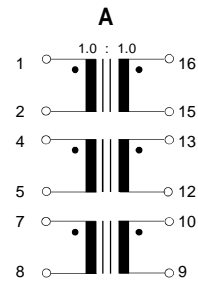
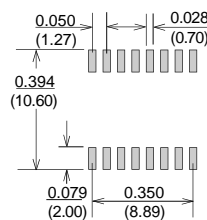
Part Number	OCL (µH ±20%)	Turns ratio ±5%	L _L Pri/Sec (µH Max)	C _{YW} Pri/Sec (pF Max)	Primary ET-Constant (V-µS Min)	Rise Time (ns Max)	R _{CU} P (mOhms)	R _{CU} S (mOhms)	V _P (Vrms)	Schematic
TAM-40A-J	40 Min.	1 : 1	0.20	8	2.1	3.0	250	250	1500	A
TAM-75A-J	75	1 : 1	0.20	8	1.8	3.0	250	250	1500	A
TAM-100A-J	100	1 : 1	0.20	9	1.8	3.0	250	250	1500	A
TAM-150A-J	150	1 : 1	0.20	12	1.2	3.0	300	300	1500	A
TAM-350A-J	350	1 : 1	0.30	16	2.6	3.5	350	350	1500	A

Dimensions & Schematics

Package



Suggested Pad Layout



Dimensions: Inches (Millimeters)

Tolerance: ±0.010 (0.25) unless specified otherwise

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Fax: Int. + 91 427 - 243 0034
E-mail: talema@talemaindia.com
Web Site: www.talemaindia.com



IC Selection Guide for LAN Fast Ethernet, ATM & Auto MDIX Transformer Modules

IC Manufacturer	IC Part Number	Turns Ratio		Talema part Number			
		Transmit	Receive	Miniature Single Port 12.8 x 9.6 x 6.0	Standard Single Port 20.0 x 12.7 x 5.8	Dual Port 40 Pad Module 28.0 x 16.0 x 5.8	Quad Port 40 Pad Module 28.0 x 16.0 x 5.8
ADMtek	LET406	1ct:1ct	1ct:1ct	TEM-300A-J	TES-300A-J		TEQ-200A-J
	ADM6509	1ct:1ct	1:1				TEQ-200D-J
	ADM9511, ADM9513, AN983, AN985	1ct:1ct	1ct:1ct	TEM-300D-J	TES-300D-J		
AMD	AM79C874	1ct:1ct	1ct:1ct	TEM-300A-J TEM-300K-J	TES-300A-J TES-300K-J	TED-200A-J	
	AM79C875	1ct:1ct	1:1				TEQ-200A-J TEQ-200B-J TEQ-200D-J TEQ-200G-J
	am79c874(NetPHY-1LP)	1.25ct:1ct	1:1	TEM-302D-J	TES-302D-J		
	AM79C971 (PCnet-Fast)	1ct:1ct	1:1	TEM-300A-J	TES-300A-J		
	AM79C973 (PCnet-FAST III)	1ct:1.41ct	1ct:1ct	TEM-300B-J	TES-300B-J		
	AM79C975 (PCnet-FAST III)	1ct:1.41ct	1ct:1ct	TEM-301B-J	TES-301B-J		
	AM79C976, AM79C977	1ct:1ct	1ct:1ct	TEM-300A-J	TES-300A-J		
	BCM5201, BCM5220, BCM5221, BCM5222, BCM5912(Dual)	1ct:1ct	1ct:1ct	TEM-300A-J TEM-300D-J	TES-300A-J TES-300D-J		
Broadcom	BCM5203, BCM5204, BCM5205 BCM5208, BCM5208R, BCM5214, BCM5216, BCM5218, BCM5304 BCM5308	1ct:1ct	1:1				TEQ-200A-J TEQ-200B-J TEQ-200H-J TEQ-200D-J
	BCM5226(Hex), BCM5227, BCM5228(Octal), BCM5238, BCM5315, BCM5316, BCM5317, BCM5318, BCM5327	1ct:1ct	1ct:1ct				TEXQ-400N-J
	AL1023	1ct:1ct	1:1				TEQ-200H-J
Broadcom (Allayer)	AH101	1ct:1ct	1ct:1ct	TEM-300A-J	TES-300A-J	TED-200H-J	
Broadcom (Altima)	AH104 AH108	1ct:1ct	1:1				TEQ-200B-J TEQ-200D-J
	Broadcom (Davicom)	DM9101, DM9102, DM9111, DM9131, DM9161, DM9181, DM9301, DM9601	1ct:1ct	1ct:1ct	TEM-300A-J TEM-300H-J	TES-300A-J TES-300H-J	TED-200H-J
1ct:1ct			1:1				TEQ-200A-J TEQ-200B-J
Cirrus Logic (Crystyl)	CS8952	1ct:1ct	1ct:1ct	TEM-300A-J	TES-300A-J	TED-200A-J TED-200H-J	
		1ct:1ct	1:1				TEQ-200A-J TEQ-200B-J
Fujitsu	84222	1ct:1ct	1:1				TEQ-200G-J
ICS	ICS1890, ICS1891 ICS1892, ICS1893	1ct:1ct	1ct:1ct	TEM-300H-J TEM-300D-J	TES-300H-J TES-300D-J		
		1ct:1ct	1:1				TEQ-200A-J TEQ-200B-J
Intel	S82555, S82558 S82559, S82562	1ct:1ct	1ct:1ct	TEM-300A-J	TES-300A-J	TED-200A-J	
		1ct:1ct	1:1				TEQ-200A-J TEQ-200B-J
Intel (Level One)	LXT970A, LXT971, LXT972, LXT973, LXT9761, LXT9762, LXT9781(Hex/Octal RMII), LXT9782(Hex/Octal SMI)	1ct:1ct	1ct:1ct	TEM-300A-J TEM-300D-J	TES-300A-J TES-300D-J	TED-200A-J TED-200H-J	
		1ct:1ct	1:1				TEQ-200A-J TEQ-200B-J
	LXT9763(Hex/MII), LXT986X, LXT988X, LXT9880, LXT988, LXT9863	1ct:1ct	1:1				TEQ-200D-J
	LXT9784	1:1	1:1				TEXQ-400M-J
	LXT980, LXT981, LXT982, LXT983, LXT974A, LXT975A, LXT976X, LXT978X, LXT9785	2ct:1ct	1:1				TEQ-204E-J TEQ-204F-J
		1ct:1ct	1ct:1ct				TEXQ-400N-J
LXT9880	1ct:1ct	1ct:1ct				TEXQ-400N-J	

THE TALEMA GROUP • Magnetic Components for ISDN/LAN Data Communications

IC - Selection Guide for LAN Fast Ethernet, ATM & Auto MDIX Isolation Transformer Modules

IC Manufacturer	IC Part Number	Turns Ratio		Talema part Number			
		Transmit	Receive	Miniature Single Port 12.8 x 9.6 x 6.0	Standard Single Port 20.0 x 12.7 x 5.8	Dual Port 40 Pad Module 28.0 x 16.0 x 5.8	Quad Port 40 Pad Module 28.0 x 16.0 x 5.8
Kendin	KS8728 (2.5V Octal PHY) KS8735 (3.3V Quad HUB) KS8737 (3.3V PHY MII) KS8761 (5V PHY) KS8995 (2.5V, Port Switch)	1ct:1ct	1ct:1ct	TEM-300A-J TEM-300D-J TEM-300H-J	TES-300A-J TES-300D-J TES-300H-J		TEQ-200H-J
	KS8995E	1ct:1ct	1ct:1ct	TEM-300D-J	TES-300D-J		TEXQ-400N-J
Lucent (Enable)	LUC3X04, LUCWX14, LUC3X24, LUC3X51	1ct:1ct	1ct:1ct	TEM-300A-J	TES-200A-J	TED-200A-J TED-200H-J	TEQ-200A-J TEQ-200B-J
	LU1X54, LU2X54, LU3X54	1ct:1ct	1:1				TEQ-200J-J
	LU6612, T8301 (5V), T8302 (3.3V) - VoIP	1ct:1ct	1ct:1ct	TEM-300A-J	TES-300A-J		
	LU3X31FT-J80, LU3X31FT-TE80, LU3X31T-T64, LU3X32FT-SE128, LU3X34FT-J160, LU3X36FTR (Hex)	1ct:1ct	1ct:1ct	TEM-300A-J	TES-300A-J	TED-200A-J TED-200H-J	
	LU3X38FTR (Octal)	1ct:1ct	1:1				TEQ-200A-J TEQ-200D-J
	LU3X312FTR (12 Port)	1ct:1ct	1:1				TEQ-200B-J TEQ-200D-J
Macronix	MX715	1ct:1ct	1ct:1ct	TEM-300A-J TEM-300B-J	TES-300A-J TES-300B-J		
Marvell	88E3061, 88E3081, 88E6050	1ct:1ct	1ct:1ct	TEM-300D-J	TES-300D-J		TEXQ-400N-J
	88E6051, 88E6052	1ct:1ct	1ct:1ct	TEM-300D-J	TES-300D-J	TED-200E-J	
MicroLinear	ML6651	1ct:1ct	1ct:1ct	TEM-300H-J	TES-300H-J		
	ML6673	1ct:1ct	1:1	TEM-300H-J	TES-300H-J	TED-200H-J	TEQ-200A-J TEQ-200B-J
	ML6692, ML6694 ML6697, ML6698	2ct:1ct 2ct:1	1:1:1ct	TEM-304G-J TEM-304J-J	TES-304G-J TES-304J-J		
Mitel (Plessy)	NWK937, NWK939, NWK954	1ct:1ct	1ct:1ct	TEM-300A-J	TES-300A-J	TED-200A-J TED-200H-J	
		1ct:1ct	1:1				TEQ-200A-J TEQ-200B-J
Myson	MTD971	1ct:1ct	1ct:1ct	TEM-300A-J TEM-300B-J	TES-300A-J TES-300B-J		
		1ct:1ct	1:1				TEQ-200A-J
Mysticom	MystiPHY110	1ct:1ct	1ct:1ct	TEM-300B-J TEM-300D-J	TES-300B-J TED-300D-J		
National Semiconductor	DP83843(Phyter), DP83815 (MacPhyter), DP83846A (DsPhyter)	1ct:1ct	1ct:1ct	TEM-300A-J	TES-300A-J		
	DP83223 (Twister)	1ct:1ct	1ct:1ct			TED-200B-J TED-200H-J	
		1ct:1ct	1:1				TEQ-200A-J TEQ-200B-J
Realtek	RTL8139, RTL8201	1ct:1ct	1ct:1ct	TEM-300A-J	TES-300A-J		
	RTL8139B	1ct:1ct	1ct:1ct	TEM-300A-J TEM-300B-J	TES-300A-J TES-300B-J		
	RTL8139C (3.3 V)	1ct:1ct	1ct:1ct	TEM-300B-J	TES-300B-J		
	RTL8305S, RTL8100B	1ct:1ct	1ct:1ct	TEM-300A-J	TES-300A-J		TEQ-200G-J
	RTL8204	1ct:1ct	1:1				TEQ-300G-J
	RTL8150	1ct:1ct	1ct:1ct	TEM-300D-J	TES-300D-J		
LSI (SEEQ)	80220, 80221	2ct:1 2ct:1ct	1ct:1ct	TEM-304F-J TEM-304D-J	TES-304F-J TES-304D-J		
	80223, 80225	1ct:1ct	1ct:1ct	TEM-300B-J TEM-300D-J	TES-300B-J TES-300D-J		
	84220, 84225, 84221	1ct:1ct	1:1				TEQ-200A-J TEQ-200B-J TEQ-200D-J



IC Selection Guide for LAN Fast Ethernet, ATM & Auto MDIX Transformer Modules

IC Manufacturer	IC Part Number	Turns Ratio		Talema part Number			
		Transmit	Receive	Miniature Single Port 12.8 x 9.6 x 6.0	Standard Single Port 20.0 x 12.7 x 5.8	Dual Port 40 Pad Module 28.0 x 16.0 x 5.8	Quad Port 40 Pad Module 28.0 x 16.0 x 5.8
SIS	SIS960	1ct:1ct	1ct:1ct	TEM-300A-J TEM-300B-J TEM-300D-J	TES-300A-J TES-300B-J TES-300D-J		
SMSC	LAN83C180, LAN83C183, LAN83C190	1ct:1ct	1ct:1ct	TEM-300A-J TEM-300B-J TEM-300D-J	TES-300A-J TES-300B-J TES-300D-J		
Sundance Technology	ST100 (100BTX PMD PHY) ST101 (Fast Ethernet Media Converter)	1ct:1ct	1ct:1ct	TEM-300A-J	TES-300A-J		
Tamarack	6043	1ct:1ct	1:1				TEQ-200A-J
TDK	TSC78Q2120	1ct:1ct	1ct:1ct	TEM-300A-J	TES-300A-J	TED-200A-J TED-200H-J	
		1ct:1ct	1:1				TEQ-200A-J TEQ-200B-J
Texas Instruments	TNETE2101, TNETE2104	1ct:1ct	1ct:1ct	TEM-300A-J TEM-300D-J	TES-300A-J TES-300D-J	TED-200A-J TED-200H-J	
		1ct:1ct	1:1				TEQ-200A-J TEQ-200B-J
Topic	TP100, TP110	1ct:1ct	1ct:1ct			TED-200H-J	
		1ct:1ct	1:1				TEQ-200D-J

ATM Network Interface Transformer Modules

Novacom	25.6 ATM	NOV25PMD6	2ct:1	1:1	UTM-3000-J			
LSI (SEEQ)		93C95	2ct:1	1:1	UTM-3000-J			
National		83223	1ct:1ct	1ct:1ct	TEM-300H-J	TES-300H-J		
µLinear		ML6674	1ct:1ct	1ct:1ct	TEM-300A-J	TES-300A-J		
PMC Sierra	155 ATM	PM5350	1ct:1ct	1ct:1ct	TEM-300H-J TEM-300A-J	TES-300H-J TES-300A-J	TED-200G-J TED-200H-J TED-200B-J	
			1ct:1	1ct:1ct				TEQ-200A-J TEQ-200B-J

Auto MDI/MDIX Transformer Modules

Broadcom	BCM5226 (Hex), BCM5227, BCM5238, BCM5228 (Octal), BCM5315, BCM5316, BCM5317, BCM5318, BCM5327	1ct:1ct	1ct:1ct					TEXQ-400N-J
Intel (Level One)	LXT9784	1:1	1:1					TEXQ-400M-J
	LXT980, LXT981, LXT982, LXT983, LXT974A, LXT975A, LXT976X, LXT978X, LXT9785, LXT9880	1ct:1ct	1ct:1ct					TEXQ-400N-J
Kendin	KS8995E	1ct:1ct	1ct:1ct					TEXQ-400N-J
Marvell	88E3061, 88E3081, 88E6050	1ct:1ct	1ct:1ct					TEXQ-400N-J

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Web Site: www.talemaindia.com

THE TALEMA GROUP • Magnetic Components for ISDN/LAN Data Communications



TE Series • 10/100 Base-T Single Port Transformer Modules

Features

- Low profile and light weight 10/100 BaseT modules facilitate pick and place compatibility and speed of placement
- Meets requirements of IEEE 802.3u and ANSI X3.263
- Consistent and reliable coplanarity
- Excellent quality at extremely competitive price due to high volume production
- Manufactured in an ISO-9001:2000, TS-16949 and ISO-14001:2004 certified Talema facility
- Fully RoHS compliant and meets lead free reflow level J-STD-020C



Electrical Specifications @ 25°C

Inductance: 350µH minimum @ 100kHz, 100mV, 8mA
 Leakage Inductance: 0.4µH @ 1MHz
 $C_{w/w}$: 15pF typical

Minimum isolation voltage: 1500 Vrms
 Operating Temperature Range: -40°C to +85°C
 Storage Temperature: -40°C to +125°C
 Standard Packing: Tape and Reel

Quality and consistency is guaranteed through 100% testing of the specified parameters for primary inductance, leakage inductance, turns ratio, DC resistance and interwinding capacitance. This ensures that the return loss and pulse wave shape requirements can be fully maintained. Additionally, all parts are tested for 1500V minimum isolation.

Applications

Talema 10/100Base-T transformer modules contain transmit and receive isolation transformers to maintain consistent wave shape and suppression of common mode noise while providing equipment isolation per IEEE 802.3. High impedance common mode quad chokes for additional EMI suppression have been added on some models as required for FCC and CISPR 22 Class B certification.

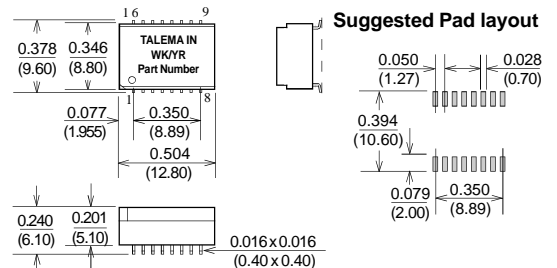
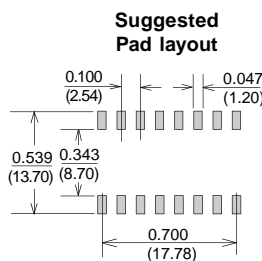
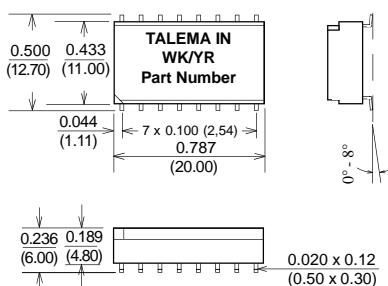
TE Series - 10/100Base-T Single Port Isolation Transformer Modules

Part Number	Turns Ratio (Pri:Sec)		Insertion Loss (dB Max)	Return Loss (dB Min @ 100 Ohm)					Differential to Common Mode Rejection (dB Min)			Crosstalk (dB Typ)			Schematic
	Tx	Rx		0.1 - 100MHz	1-30MHz	40MHz	60MHz	80MHz	30MHz	60MHz	100MHz	30MHz	60MHz	100MHz	
TE_-300A-J	1ct:1ct	1ct:1ct	-1.0	-20	-20	-18	-14	-42	-36	-33	-50	-40	-40	A	
TE_-300B-J & B1-J	1ct:1ct	1ct:1ct	-1.0	-22	-20	-18	-12	-42	-38	-32	-50	-40	-40	B	
TE_-300D-J	1ct:1ct	1ct:1ct	-1.0	-22	-20	-18	-12	-45	-40	-35	-50	-40	-40	D	
TE_-304D-J	2ct:1ct	1ct:1ct	-1.1	-20	-20	-14	-11.5	-42	-37	-33	-45	-40	-35	D	
TE_-305D-J	1.89ct:1ct	1ct:1ct	-1.1	-18	-16	-14	-12	-30	-30	-30	-35	-35	-35	D	
TE_-300E-J	1ct:1ct	1ct:1ct	-1.0	-18	-16	-14	-12	-42	-37	-32	-45	-40	-35	E	
TE_-304F-J	2ct:1	1ct:1ct	-1.0	-16	-16	-16	-12	-35	-35	-32	-40	-40	-35	F	
TE_-304G-J	2ct:1ct	1:1:1ct	-1.0	-16	-16	-16	-12	-35	-35	-32	-40	-40	-35	G	
TE_-300H-J & H1-J	1ct:1ct	1ct:1ct	-1.0	-20	-18	-18	-14	-45	-40	-35	-45	-40	-35	H	
TE_-304J-J	2ct:1	1:1:1ct	-1.0	-16	-16	-16	-12	-35	-35	-32	-40	-40	-35	J	
TE_-300K-J & K1-J	1ct:1	1ct:1ct	-1.0	-16	-13.4	-11.5	-10	-45	-40	-35	-40	-38	-35	K	
TE_-300L-J	1ct:1ct	1ct:1ct	-0.9	-18	-14	-12	-11	-40	-35	-30	-45	-45	-37	L	
TE_-300M-J	1ct:1ct	1ct:1ct	-1.0	-20	-17	-17	-14	-40	-40	-40	-40	-40	-40	M	
TE_-300N-J	1ct:1ct	1ct:1ct	-1.0	-20	-17	-17	-14	-40	-40	-40	-40	-40	-40	N	
TE_-300P-J	1ct:1ct	1ct:1ct	-1.1	-18	-16	-14	-12	-42	-37	-35	-40	-40	-35	P	

TES Module

Package Style

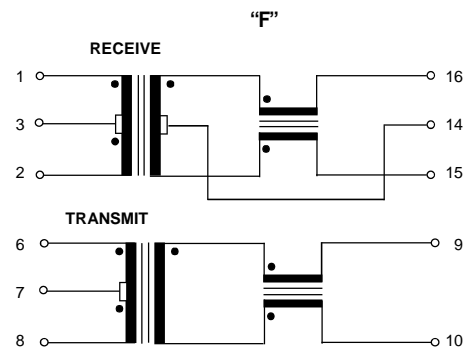
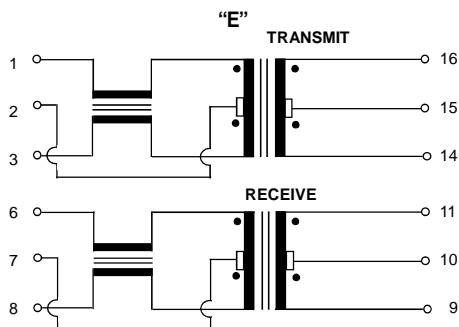
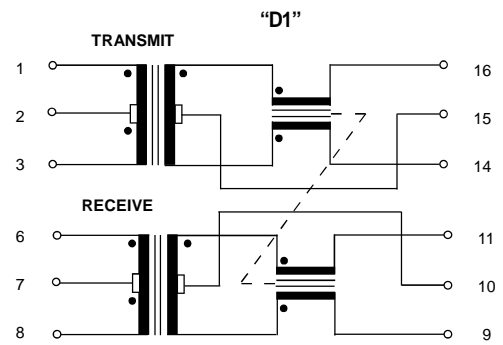
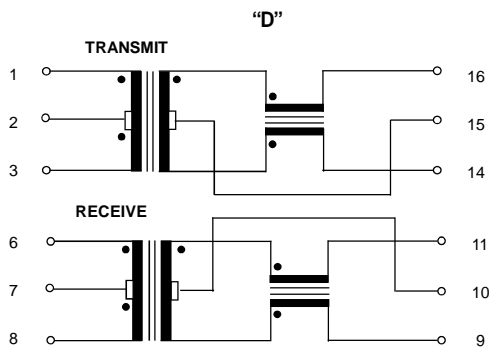
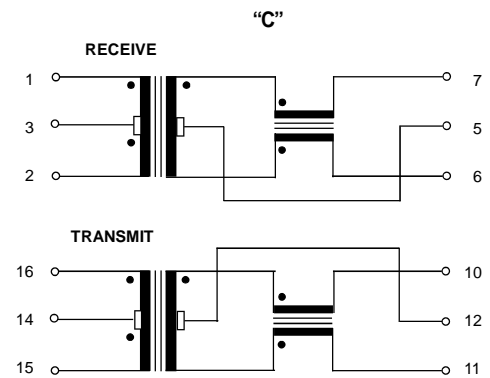
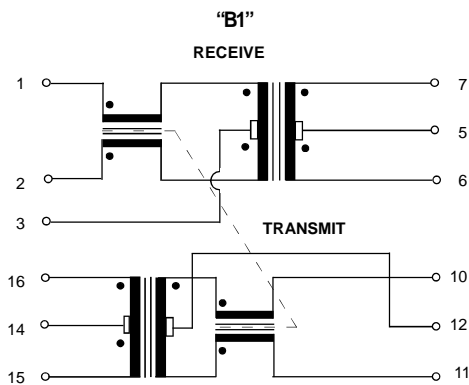
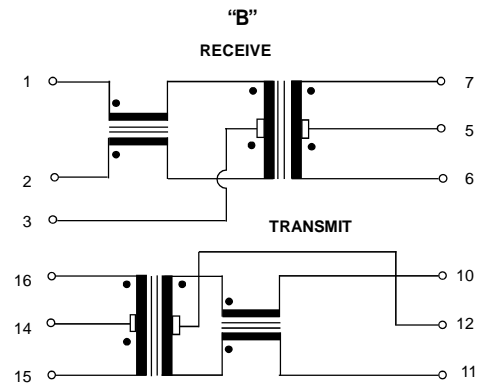
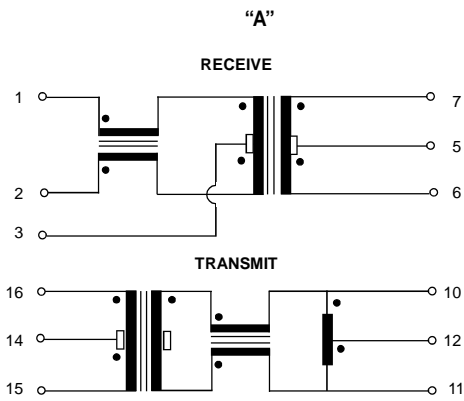
TEM Miniature Module



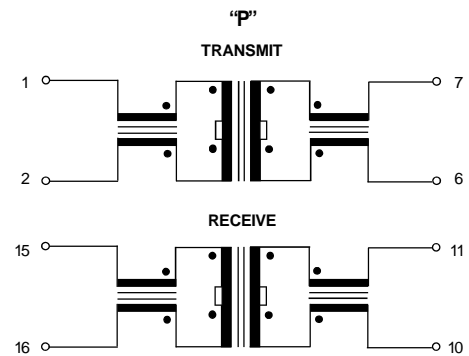
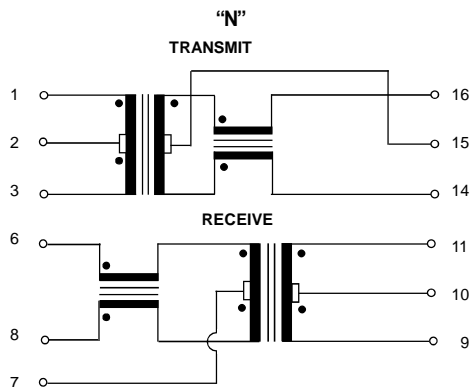
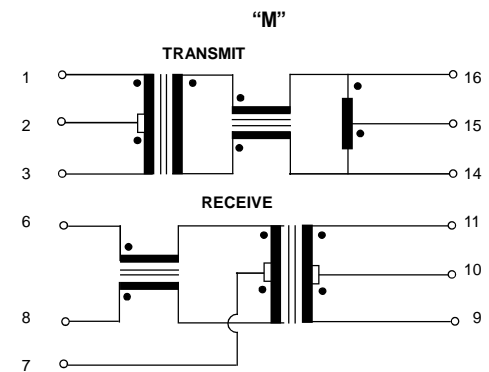
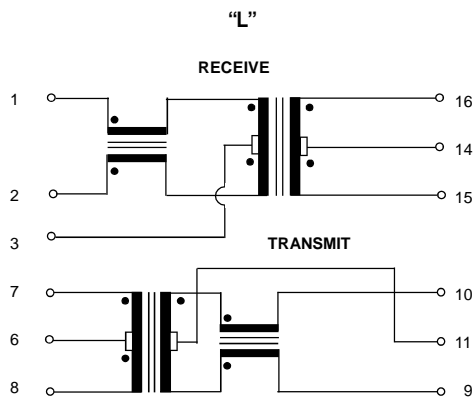
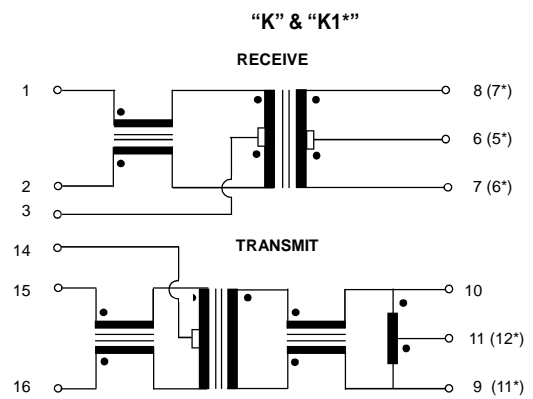
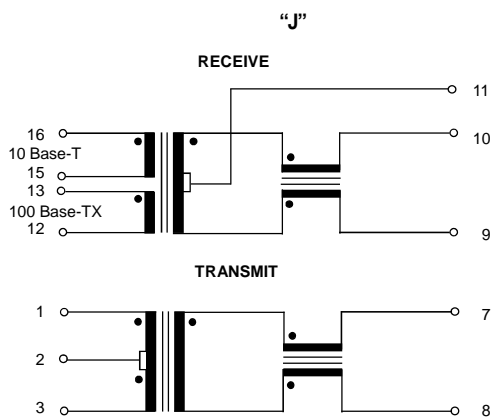
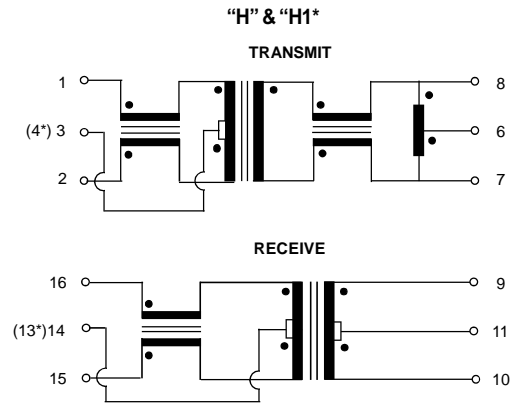
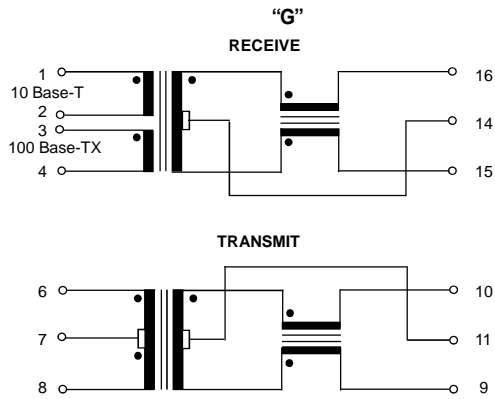
Surface coplanarity will be 0.004 (0.10) maximum

Dimensions: Inches (Millimeters)
 Tolerance: ±0.010 (0.25) unless specified otherwise

Schematics • TE Series 10/100Base-T Single Port SMD Transformer Modules



Schematics • TE Series 10/100Base-T Single Port SMD Transformer Modules





Features

- Low profile (2.16 mm max) for PC card and cardbus applications
- Consistent and reliable coplanarity
- Excellent quality at extremely competitive price due to high volume production
- Manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- Fully RoHS compliant and meets lead free reflow level J-STD-020C

Electrical Specifications @ 25°C

Inductance: 350µH minimum @ 100kHz, 100mV, 8mA
 Minimum isolation voltage: 1500 Vrms
 Operating Temperature Range: -40°C to +85°C
 Storage Temperature: -40°C to +125°C
 Standard Packing: Tape and Reel



Quality and consistency is guaranteed through 100% testing of the specified parameters for primary inductance, leakage inductance, turns ratio, DC resistance and interwinding capacitance. This ensures that the return loss and pulse wave shape requirements can be fully maintained. Additionally, all parts are tested for 1500V minimum isolation.

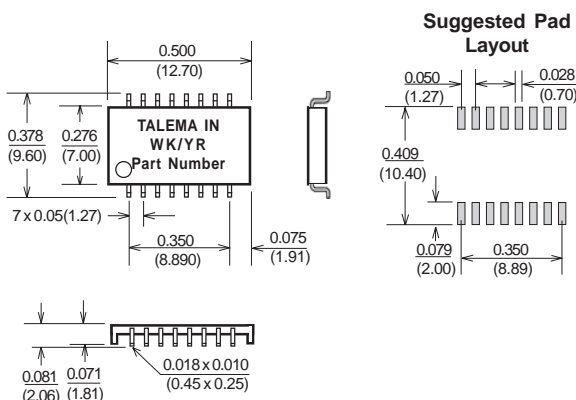
Applications

Talema 10/100Base-T transformer modules contain transmit and receive isolation transformers to maintain consistent wave shape and suppression of common mode noise while providing equipment isolation per IEEE 802.3. High impedance common mode quad chokes for additional EMI suppression have been added on some models as required for FCC and CISPR 22 Class B certification.

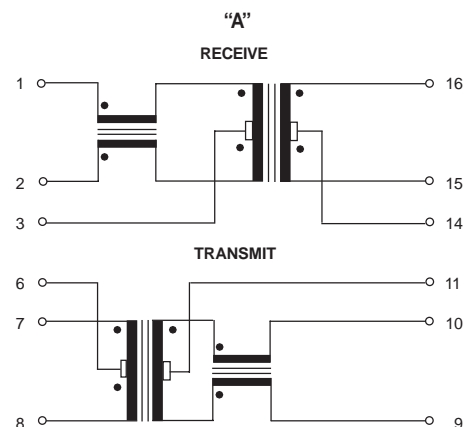
PCL Series - 10/100Base-T Single Port Isolation Transformer Modules for PC Cards

Part Number	Turns Ratio (Pri:Sec)		Insertion Loss (dB Max)	Return Loss (dB Min @ 100 Ohm)			Differential to Common Mode Rejection (dB Min)			Crosstalk (dB Typ)			Schematic
	Tx	Rx		30MHz	60MHz	80MHz	30MHz	60MHz	100MHz	30MHz	60MHz	100MHz	
PCL-100A	1:1	1:1	-0.9	-16	-12	-11	-35	-33	-20	-50	-45	-40	A
PCL-200A	1:1	1:1	-0.9	-16	-12	-11	-35	-33	-20	-50	-45	-40	A
PCL-300A	1:1	1:1	-1.0	-16	-12	-12	-42	-37	-33	-45	-40	-35	A
PCL-300B	1:1	1:1	-2.0	-18	-14	-12	-40	-35	-30	-50	-45	-40	B
PCL-300C	1:1	1:1	-2.0	-18	-12	-12	-40	-35	-30	-45	-45	-37	C

PCL-100



Schematic



Dimensions: Inches (Millimeters)
 Tolerance: ±0.010 (0.25) unless specified otherwise

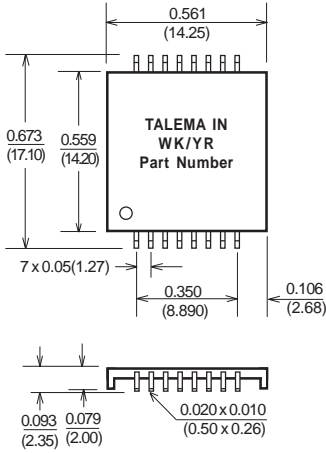
Surface coplanarity will be 0.004 (0.10) maximum

Packaging & Schematics • PLC Series 10/100Base-T Single Port Modules for PC Cards

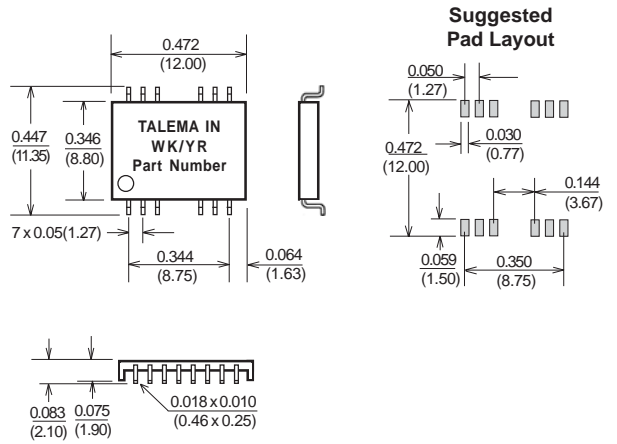
Surface coplanarity will be 0.004 (0.10) maximum

Dimensions: Inches (Millimeters)
Tolerance: ± 0.010 (0.25) unless specified otherwise

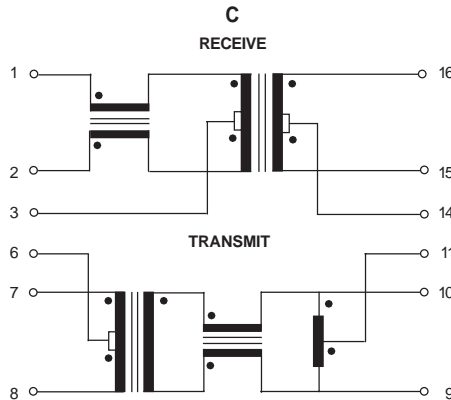
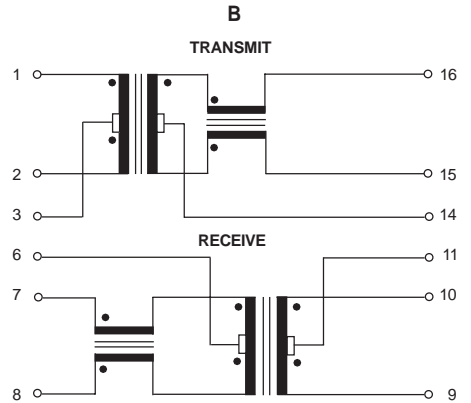
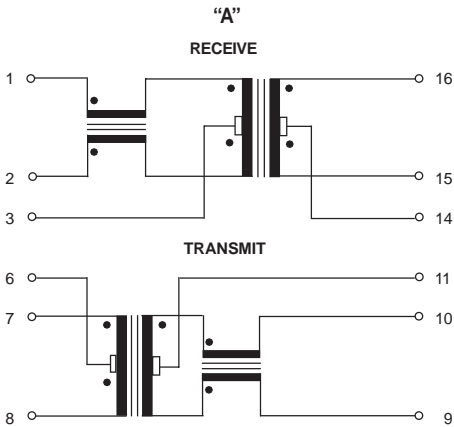
PCL-200



PCL-300



Schematics





Dual Port SMD 10/100Base-T Isolation Transformer Modules

Features

- Low profile and light weight 10/100 BaseT modules facilitate pick and place compatability and speed of placement
- Meets requirements of IEEE 802.3u and ANSI X3.263
- Consistent and reliable coplanarity
- Excellent quality at extremely competitive price due to high volume production
- Manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- Fully RoHS compliant and meets lead free reflow level J-STD-020C

Electrical Specifications @ 25°C

Inductance: 350µH minimum @ 100kHz, 100mV, 8mA

Leakage Inductance: 0.4µH @ 1MHz

C_{w/w}: 20pF typical

Minimum isolation voltage: 1500 Vrms

Operating Temperature Range: -40°C to +85°C

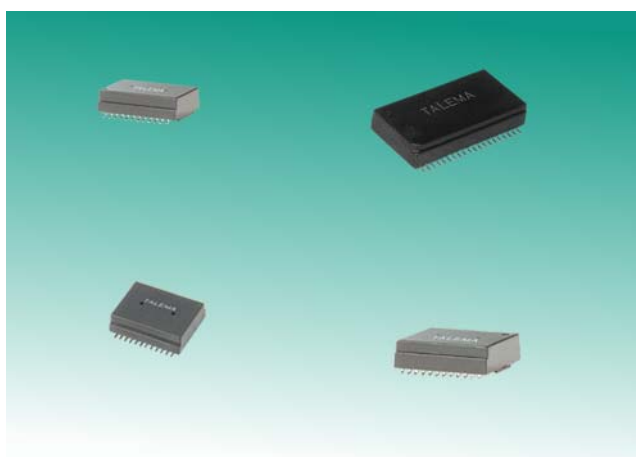
Storage Temperature: -40°C to +125°C

Standard Packing: Tape and Reel

Quality and consistency is guaranteed through 100% testing of the specified parameters for primary inductance, leakage inductance, turns ratio, DC resistance and interwinding capacitance. This ensures that the return loss and pulse wave shape requirements can be fully maintained. Additionally, all parts are tested for 1500V minimum isolation.

Applications

Talema 10/100BaseT Dual transformer modules contain transmit and receive isolation transformers to maintain constant wave shape and suppression of common mode noise while providing equipment isolation per IEEE 802.3. High impedance common mode quad chokes for additional EMI suppression have been added on some models as required for FCC and CISPR 22 Class B certification.



TED Series - SMD Dual Port 10/100Base-T Isolation Transformer Modules

Part Number	Turns Ratio ±2%		Insertion Loss (dB Typ)	Return Loss (dB Min)				Crosstalk (dB Typ)				Differential to Common Mode Rejection (dB Typ)		Schematic
	Tx	Rx		0.1 - 100 MHz	2-30 MHz	40 MHz	50 MHz	60-80 MHz	1 MHz	30 MHz	60 MHz	100 MHz	1-60 MHz	
TED-100A	1ct:1ct	1ct:1ct	-1.2	-18	-16	-14	-12	-50	-42	-40	-35	-39	-33	A
TED-104A	2ct:1ct	1ct:1ct	-1.2	-18	-16	-14	-12	-50	-42	-40	-35	-39	-33	A
TED-100B	1ct:1ct	1ct:1ct	-1.1	-18	-16	-14	-12	-35	-35	-35	-35			B
TED-200A-J	1ct:1ct	1ct:1ct	-1.2	-16	-14	-13	-12	-50	-45	-40	-35	-37	-33	A
TED-200B-J	1ct:1ct	1ct:1ct	-0.5	-21	-17	-14.5	-12	-65	-55	-45	-35	-45	-35	B
TED-200C-J	1ct:1ct	1ct:1ct	-0.5	-21	-17	-14.5	-12	-65	-55	-45	-35	-40	-30	C
TED-200E-J	1ct:1ct	1ct:1ct	-1.0	-16	-14.4	-13	-12	-50	-45	-40	-35	-37	-33	E
TED-200G-J	1ct:1ct	1ct:1ct	-0.5	-21	-17	-14.5	-12	-65	-55	-45	-35	-53	-40	G
TED-200H-J	1ct:1ct	1ct:1ct	-0.5	-21	-17	-14.5	-12	-65	-55	-45	-35	-45	-35	H
TED-300A	1ct:1ct	1ct:1ct	-1.1	-18	-16	-14	-12	-50	-42	-38	-33	-39	-33	A
TED-300B	1ct:1ct	1ct:1ct	-1.1	-18	-16	-14	-12	-50	-44	-39	-35	-37	-30	B
TED-300C	1ct:1ct	1ct:1ct	-1.2	-18	-16	-14	-12	-60	-45	-40	-35	-45	-35	C
TED-300D	1ct:1ct	1ct:1ct	-1.2	-18	-16	-14	-12	-60	-45	-40	-35	-45	-35	D
TED-400D	1ct:1ct	1ct:1ct	-1.2	-16	-14	-13.5	-10	-55	-45	-40	-35	-30	-30	D

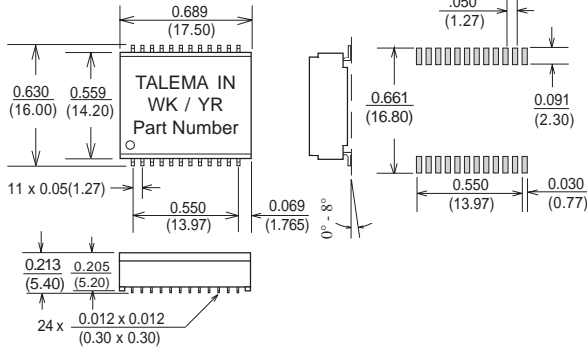
Dimensions and Schematics on following pages

Dimensions & Schematics • SMD Dual Port 10/100Base-T Isolation Transformer Modules

Dimensions: Inches (Millimeters)
Tolerance: ± 0.010 (0.25) unless specified otherwise

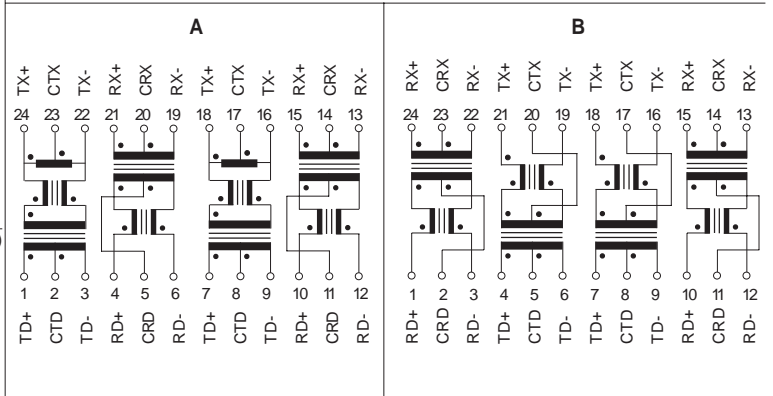
Surface coplanarity will be 0.004 (0.01) maximum

TED-100

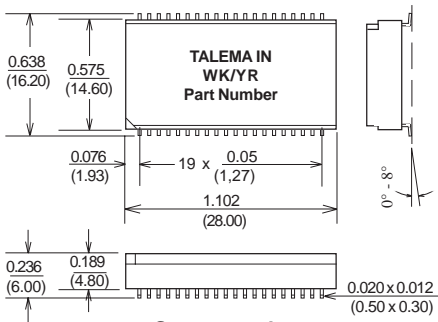


Suggested Pad Layout

Schematic

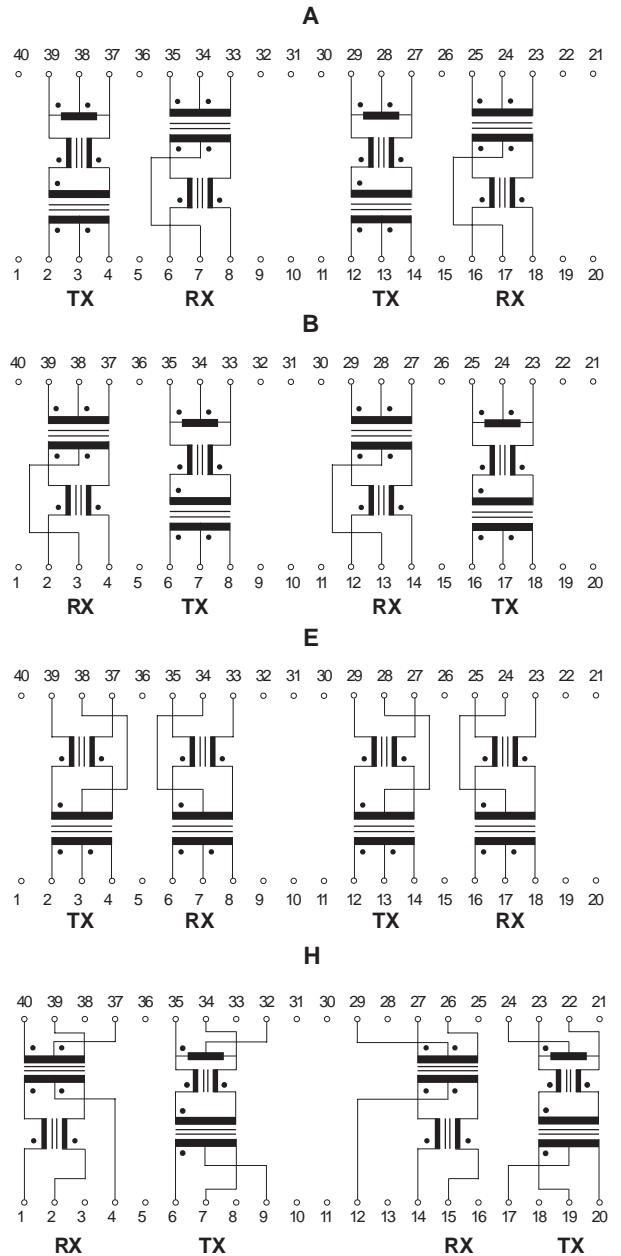
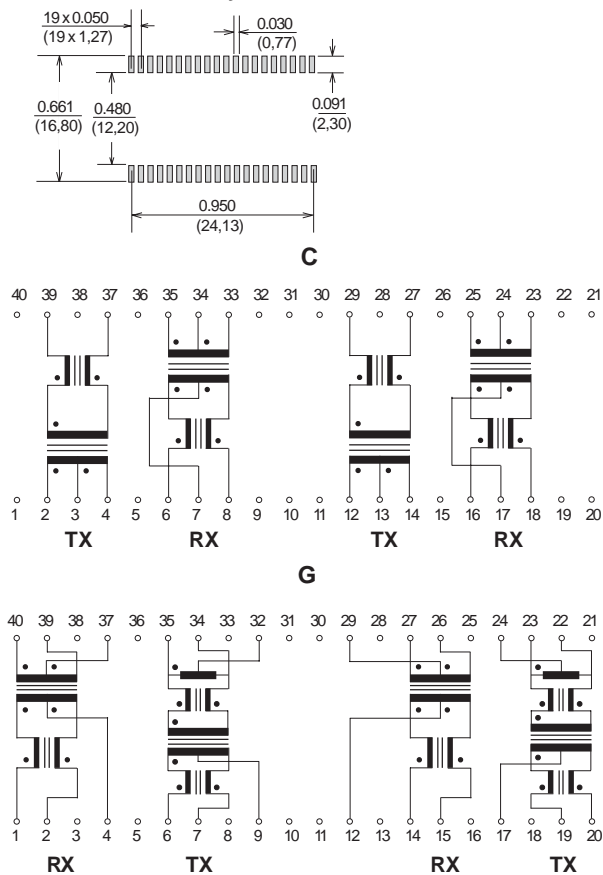


TED-200



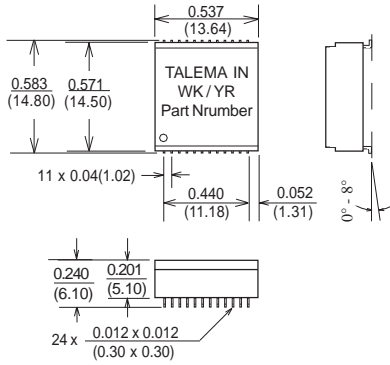
Suggested Pad Layout

Schematic

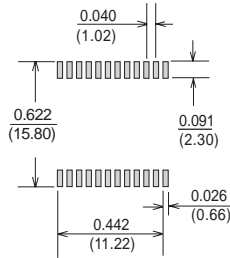


Dimensions & Schematics • SMD Dual Port 10/100Base-T Isolation Transformer Modules

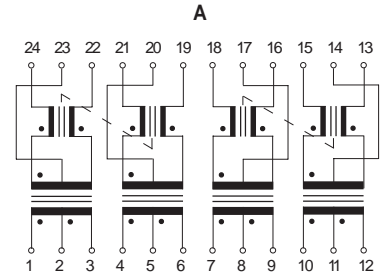
TED-300



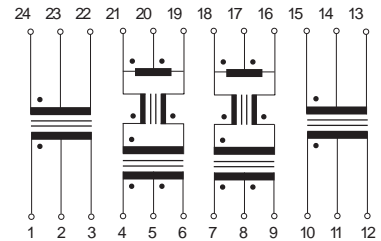
Suggested Pad Layout



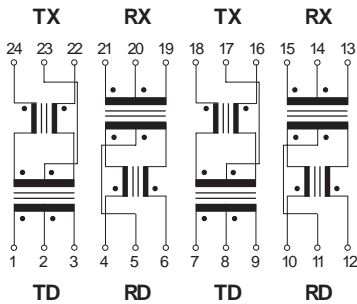
Schematics



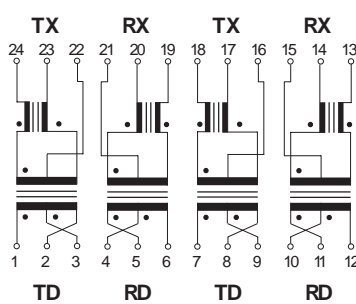
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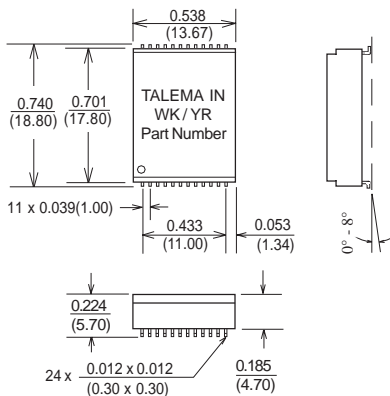
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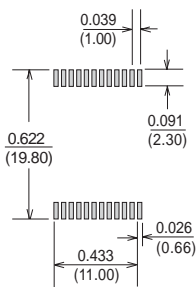
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TED-400

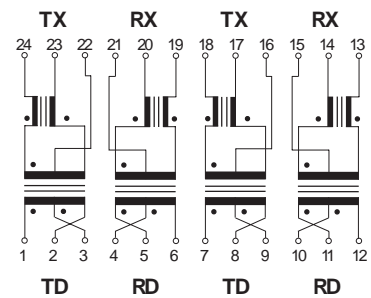


Suggested Pad Layout



Schematic

D



Sales & Marketing, Design and Manufacturing Facilities

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E-mail: talema@talemaindia.com
Web Site: www.talemaindia.com



Quad Port SMD 10/100Base-T Isolation Transformer Modules

Features

- Low profile (5.8mm) and light weight (4.0 g) 10/100Base-T Quad Port isolation transformer modules designed to support four single or double stacked RJ-45 connectors
- SMD packages facilitate pick and place compatibility and speed of placement
- Modules meet requirements of IEEE 802.3u and ANSI X3.263
- Consistent and reliable coplanarity
- Excellent quality at extremely competitive price due to high volume production
- Manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- Fully RoHS compliant and meets lead free reflow level J-STD-020C



Electrical Specifications @ 25°C

Inductance: 350µH minimum @ 100kHz, 100mV, 8mA

Leakage Inductance: 0.4µH @ 1MHz

Minimum isolation voltage: 1500 Vrms

Operating Temperature Range: -40°C to +85°C

Storage Temperature: -40°C to +125°C

Standard packing: Tape and reel

Quality and consistency is guaranteed through 100% testing of the specified parameters for primary inductance, leakage inductance, turns ratio, DC resistance and interwinding capacitance. This ensures that the return loss and pulse wave shape requirements can be fully maintained. Additionally, all parts are tested for 1500V minimum isolation.

Applications

Talema 10/100BaseT Quad transformer modules contain transmit and receive isolation transformers to maintain constant wave shape and suppression of common mode noise while providing equipment isolation per IEEE 802.3. High impedance common mode quad chokes for additional EMI suppression have been added on some models as required for FCC and CISPR 22 Class B certification.

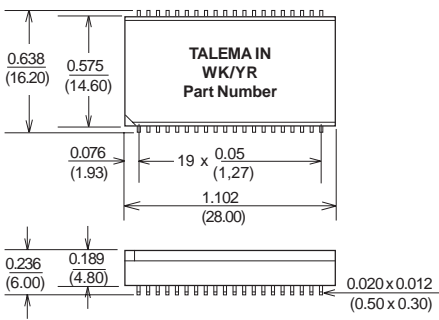
TEQ Series - SMD Quad Port 10/100Base T Isolation Transformer Modules

Part Number	Turns Ratio ±2%		Insertion Loss (dB Typ)	Return Loss (dB Min)				Crosstalk (dB Typ)				Common to Common Rejection Ratio 0.1-60MHz (dB Typ)		Differential to Common Mode Rejection (dB Typ)		Schematic
	Tx	Rx		0.1 - 100 MHz	2-30 MHz	40 MHz	50 MHz	60-80 MHz	1 MHz	30 MHz	60 MHz	100 MHz	Transmit	Receive	1-60 MHz	
TEQ-200A-J	1ct:1ct	1 : 1	-0.5	-21	-17	-14.5	-12	-65	-55	-45	-35	-30	-30	-40	-30	A
TEQ-202A-J	1.25ct:1ct	1 : 1	-0.5	-18	-18	-14	-12	-60	-50	-40	-35	-30	-30	-39	-33	A
TEQ-204A-J	2ct:1ct	1 : 1	-0.5	-18	-18	-14	-12	-60	-50	-40	-35	-30	-30	-39	-33	A
TEQ-200B-J	1ct:1ct	1 : 1	-0.5	-21	-17	-14.5	-12	-65	-55	-45	-35	-30	-30	-40	-30	B
TEQ-202B-J	1.25ct:1ct	1 : 1	-0.5	-18	-18	-14	-12	-60	-50	-40	-35	-30	-30	-39	-33	B
TEQ-204B-J	2ct:1ct	1 : 1	-0.5	-21	-17	-14.5	-12	-60	-50	-40	-35	-30	-30	-40	-30	B
TEQ-200C-J	1ct:1ct	1 : 1	-0.5	-21	-17	-14.5	-12	-65	-55	-45	-35	-30	-30	-40	-40	C
TEQ-204C-J	2ct:1ct	1 : 1	-0.5	-21	-17	-14.5	-12	-60	-50	-40	-35	-30	-30	-40	-40	C
TEQ-205C-J	1.89ct:1ct	1 : 1	-1.1	-18	-16	-14	-12	-60	-50	-40	-35	-30	-25	-40	-40	C
TEQ-200D-J	1ct:1ct	1 : 1	-0.5	-21	-17	-14.5	-12	-65	-55	-45	-35	-30	-30	-40	-30	D
TEQ-200D1-J	1ct:1ct	1 : 1	-0.5	-21	-17	-14.5	-12	-65	-55	-45	-35	-30	-30	-40	-30	D1
TEQ-204D-J	2ct:1ct	1 : 1	-0.5	-21	-17	-14.5	-12	-60	-50	-40	-35	-30	-30	-40	-40	D
TEQ-204E-J	2ct:1ct	1 : 1	-0.5	-21	-17	-14.5	-12	-60	-50	-40	-35	-30	-30	-40	-30	E
TEQ-204F-J	2ct:1ct	1 : 1	-0.5	-21	-17	-14.5	-12	-60	-50	-40	-35	-30	-30	-40	-30	F
TEQ-200G-J	1ct:1ct	1 : 1	-0.5	-21	-17	-14.5	-12	-65	-50	-40	-30	-30	-30	-40	-30	G
TEQ-200H-J	1ct:1ct	1 : 1	-0.5	-21	-17	-14.5	-12	-65	-55	-45	-35	-30	-30	-40	-30	H
TEQ-200J-J	1ct:1ct	1 : 1	-0.5	-21	-17	-14.5	-12	-65	-50	-40	-30	-30	-30	-40	-30	J
TEQ-203K-J	1.41ct:1ct	1 : 1	-0.5	-18	-16	-14	-12	-60	-50	-40	-35	-35	-35	-40	-30	K

Dimensions and Schematics on following page

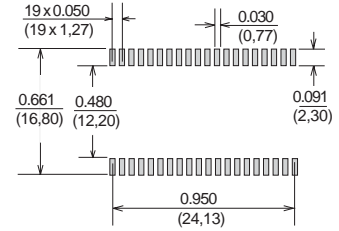
Dimensions & Schematics • Quad Port 10/100Base-T Transformer Modules

Dimensions



Surface coplanarity will be <math><0.004 (0.10)</math>

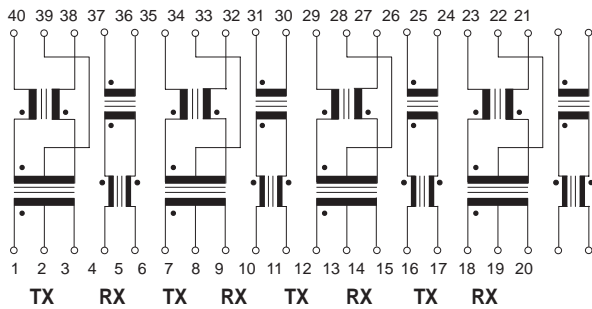
Suggested Pad Layout



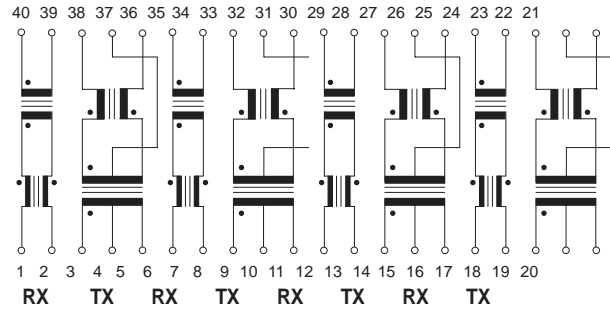
Dimensions: Inches (Millimeters)
Tolerance: $\pm 0.010 (0.25)$ unless specified otherwise

Schematics

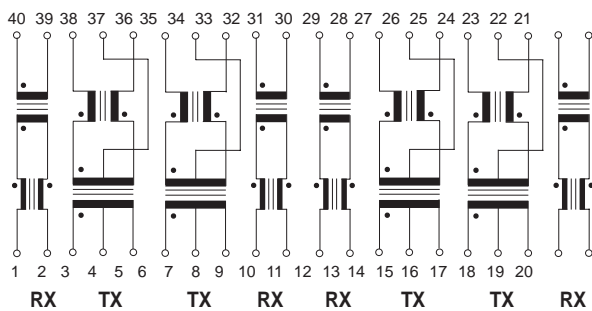
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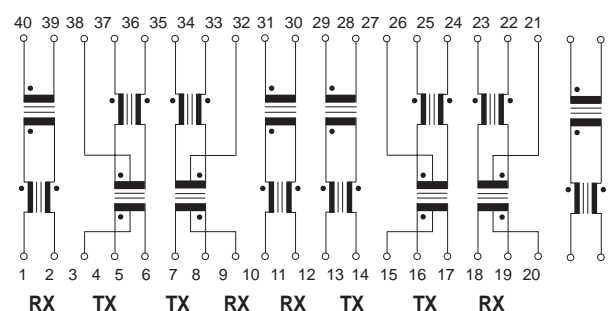
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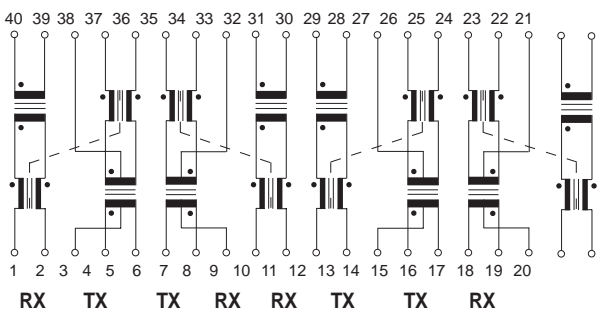
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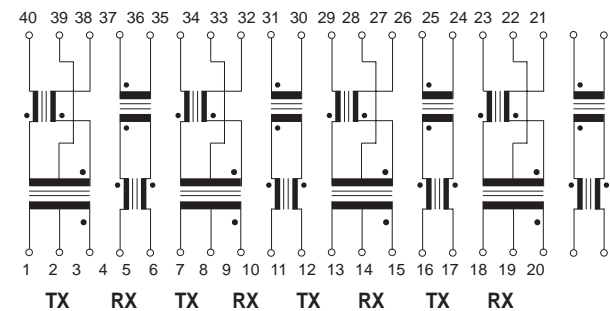
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D1

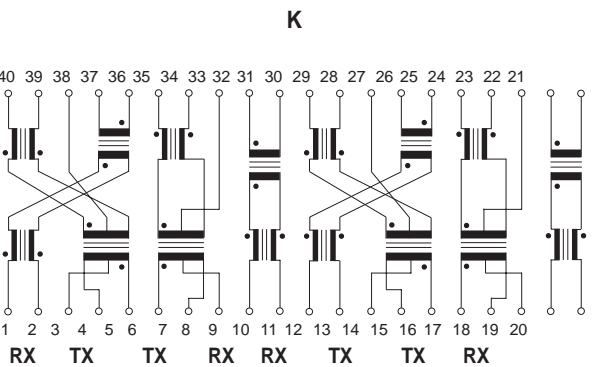
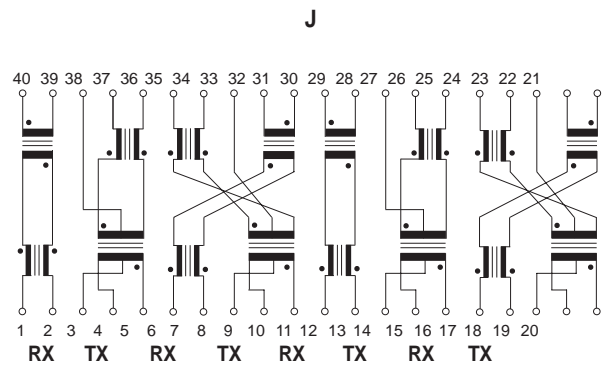
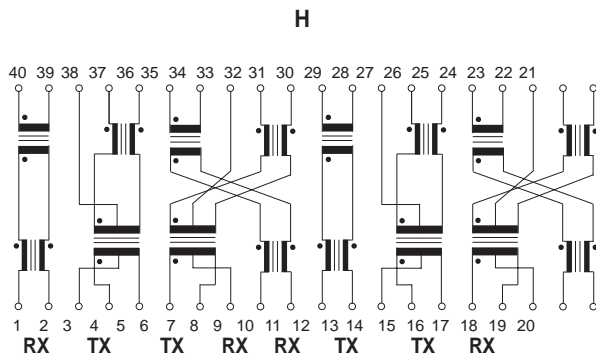
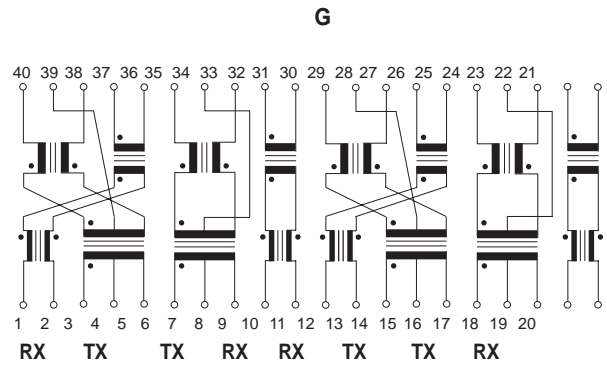
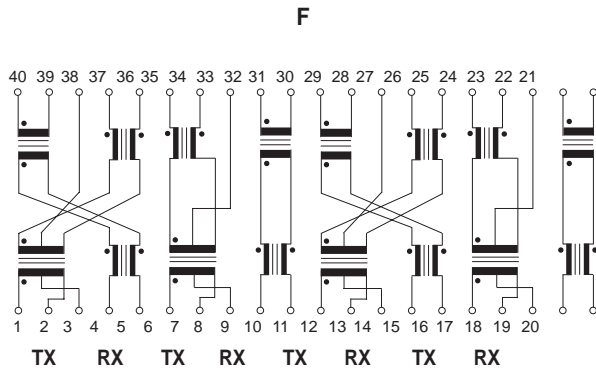


E



Schematics • SMD Quad Port 10/100Base-T Isolation Transformer Modules

Schematics



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E-mail: talema@talemaindia.com
Web Site: www.talemaindia.com



TFG • 10/100 Base-T Single Port Transformer Module

Features

- Low profile and light weight 10/100 BaseT modules facilitate pick and place compatibility and speed of placement
- Meets requirements of IEEE 802.3u and ANSI X3.263
- Consistent and reliable coplanarity
- Footprint compatible with Gigabit Ethernet layout
- Manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- Fully RoHS compliant and meets lead free reflow level J-STD-020C



Electrical Specifications @ 25°C

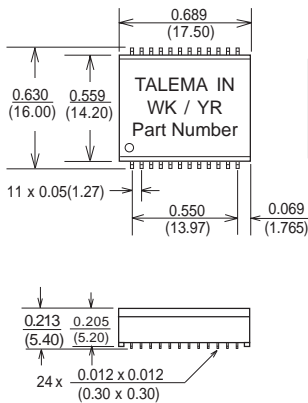
Inductance: 350µH minimum @ 100kHz, 100mV, 8mA
 Minimum isolation voltage: 1500 Vrms
 Operating Temperature Range: -40°C to +85°C
 Storage Temperature: -40°C to +125°C
 Standard Packing: Tape and Reel

Quality and consistency is guaranteed through 100% testing of the specified parameters for primary inductance, leakage inductance, turns ratio, DC resistance and interwinding capacitance. This ensures that the return loss and pulse wave shape requirements can be fully maintained. Additionally, all parts are tested for 1500V minimum isolation.

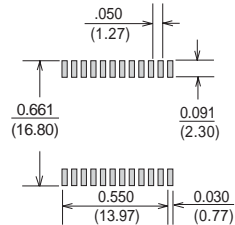
TFG - 10/100Base-T Single Port Isolation Transformer Modules

Part Number	Turns Ratio (Pri:Sec)		Insertion Loss (dB Max)	Return Loss (dB Min @ 100 Ohm)				Differential to Common Mode Rejection (dB Min)			Crosstalk (dB Typ)			Schematic
	Tx	Rx		0.1 - 100 MHz	1-30 MHz	40 MHz	50 MHz	80 MHz	30 MHz	60 MHz	100 MHz	30 MHz	60 MHz	
TFG-100A	1ct:1ct	1ct:1ct	-1.2	-18	-16	-14	-12	-42	-36	-33	-42	-40	-33	A
TFG-100B	1ct:1ct	1ct:1ct	-1.2	-18	-16	-14	-12	-42	-36	-33	-42	-40	-33	B

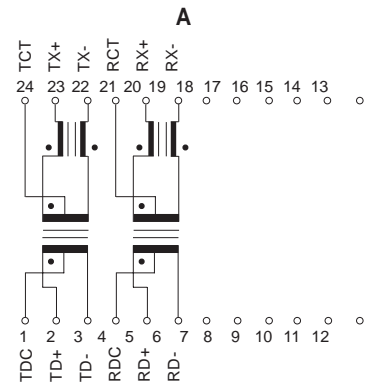
TFG-100



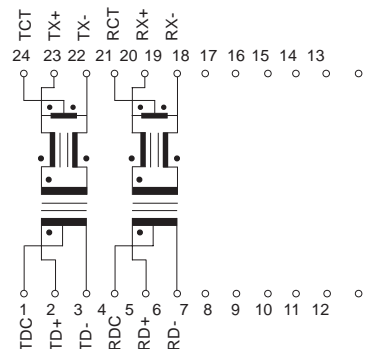
Suggested Pad Layout



Schematic



B



Surface coplanarity will be 0.004 (0.10) maximum

Dimensions: Inches (Millimeters)
 Tolerance: ±0.010 (0.25) unless specified otherwise

Dual Port SMD Auto MDI/MDIX 10/100Base-T Isolation Transformer Modules

Features

- Low profile (6.0mm) and light weight (3.0 g) 10/100Base-T Dual Port isolation transformer modules facilitate pick and place compatibility and speed of placement
- Dual port modules meet requirements of IEEE 802.3u and ANSI X3.263
- Consistent and reliable coplanarity
- Manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- Fully RoHS compliant and meets lead free reflow level J-STD-020C

Electrical Specifications @ 25°C

Inductance: 350µH minimum @ 100kHz, 100mV, 8mA

Leakage Inductance: 0.4µH @ 1MHz

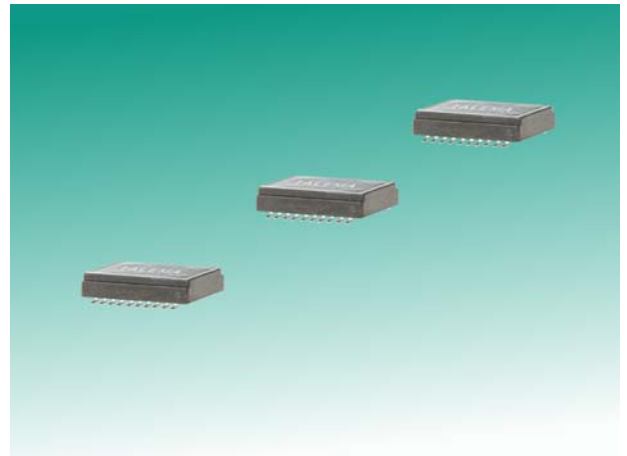
$C_{w/w}$: 20pF typical

Minimum isolation voltage: 1500 Vrms

Operating Temperature Range: -40°C to +85°C

Storage Temperature: -40°C to +125°C

Standard packing: Tape and reel



Quality and consistency is guaranteed through 100% testing of the specified parameters for primary inductance, leakage inductance, turns ratio, DC resistance and interwinding capacitance. This ensures that the return loss and pulse wave shape requirements can be fully maintained. Additionally, all parts are tested for 1500V minimum isolation.

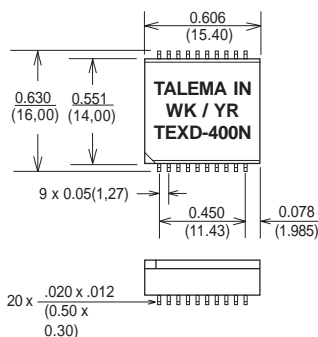
Applications

Talema 10/100BaseT Dual transformer modules contain transmit and receive isolation transformers to maintain consistent wave shape and suppression of common mode noise while providing equipment isolation per IEEE 802.3. High impedance common mode quad chokes for additional EMI suppression have been added on some models as required for FCC and CISPR 22 Class B certification.

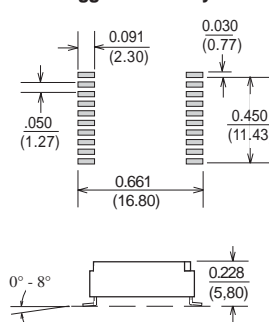
TEXD - Dual Port SMD MDI/MDIX 10/100Base-T Isolation Transformer Module

Part Number	Turns Ratio ±2%		Insertion Loss (dB Typ)	Return Loss (dB Min)				Crosstalk (dB Typ)				Common to Common Rejection Ratio 0.1-60MHz (dB Typ)		Differential to Common Mode Rejection (dB Typ)		Schematic
	Tx	Rx		0.1 - 100 MHz	2-30 MHz	40 MHz	50 MHz	60-80 MHz	1 MHz	30 MHz	60 MHz	100 MHz	Transmit	Receive	1-60 MHz	
TEXD-400N-J	1ct:1ct	1ct:1ct	-1.0	-18	-14.6	-13.1	-10	-55	-45	-40	-33	-40	-30	-36	-24	N

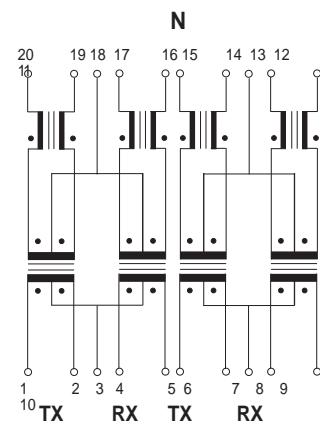
Dimensions



Suggested Pad Layout



Schematic



Surface coplanarity will be 0.004 (0.01) maximum

Dimensions: Inches (Millimeters)

Tolerance: ±0.010 (0.25) unless specified otherwise



Quad Port Auto MDI/MDIX 10/100Base-T Transformer Isolation Modules

Features

- Designed for Broadcom BCM5226/5228, Level One LXT9784/9785 and Kendin KS8995/8995E chipsets
- Low profile (5.8mm) and light weight (4.5 g) 10/100Base-T Quad Port isolation transformer modules designed for Auto MDI/MDIX applications
- Modules meet requirements of IEEE 802.3u and ANSI X3.263
- SMD packages facilitate pick and place compatibility and speed of placement while providing consistent and reliable coplanarity
- Manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- Fully RoHS compliant and meets lead free reflow level J-STD-020C



Electrical Specifications @ 25°C

Inductance: 350µH minimum @ 100kHz, 100mV, 8mA

Leakage Inductance: 0.4µH @ 1MHz

Minimum isolation voltage: 1500 Vrms

Operating Temperature Range: -40°C to +85°C

Storage Temperature: -40°C to +125°C

Standard packing: Tape and reel

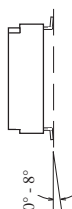
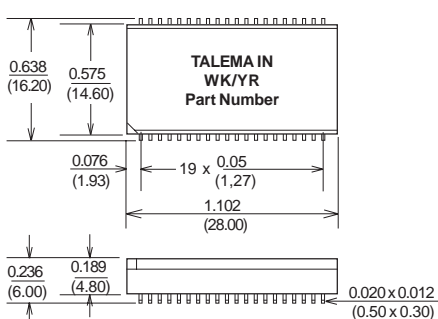
Quality and consistency is guaranteed through 100% testing of the specified parameters for primary inductance, leakage inductance, turns ratio, DC resistance and interwinding capacitance. This ensures that the return loss and pulse wave shape requirements can be fully maintained. Additionally, all parts are tested for 1500V minimum isolation.

Applications

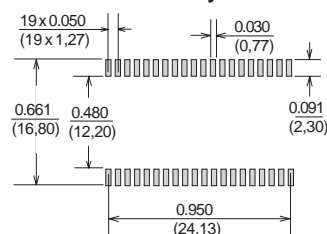
Talema 10/100BaseT Quad transformer modules contain transmit and receive isolation transformers to maintain consistent wave shape and suppression of common mode noise while providing equipment isolation per IEEE 802.3. High impedance common mode quad chokes for additional EMI suppression have been added on some models as required for FCC and CISPR 22 Class B certification.

TEXQ Series - Quad Port MDI/MDIX 10/100Base-T Isolation Transformer Modules

Part Number	Turns Ratio ±2%		Insertion Loss (dB Typ)	Return Loss (dB Min)				Crosstalk (dB Typ)				Differential to Common Mode Rejection (dB Typ)		Schematic
	Tx	Rx		0.1 - 100 MHz	0.5-30 MHz	40 MHz	50 MHz	60-80 MHz	1 MHz	30 MHz	60 MHz	100 MHz	1-60 MHz	
TEXQ-400M-J	1 : 1	1 : 1	-1.0	-18	-14.6	-13.1	-10	-65	-50	-40	-35	-40	-36	M
TEXQ-400N-J	1ct : 1ct	1ct : 1ct	-1.0	-18	-14.6	-13.1	-10	-55	-45	-40	-33	-36	-24	N
TEXQ-400N1-J	1ct : 1ct	1ct : 1ct	-1.0	-18	-14.6	-13.1	-10	-55	-45	-40	-33	-36	-24	N
TEXQ-405N-J	1.89ct:1ct	1ct:1ct	-1.0	-18	-16	-14	-12	-32	-32	-32	-32	-40	-40	N



Suggested Pad Layout



Surface coplanarity will be <0.004 (0.10)

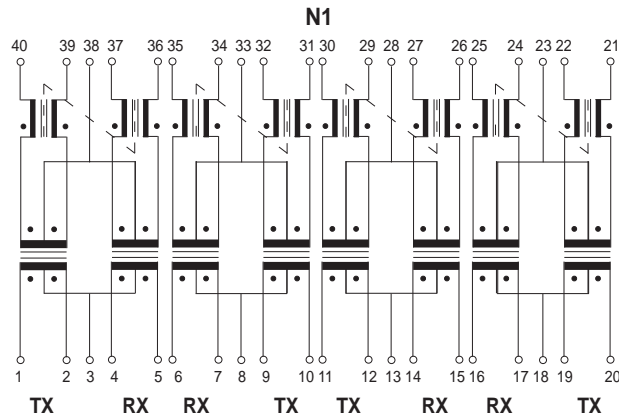
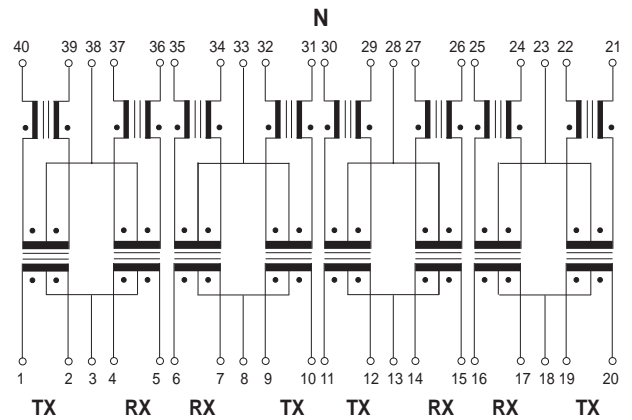
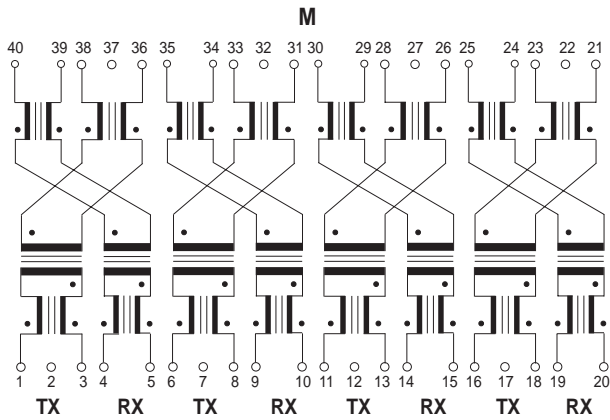
Dimensions: Inches (Millimeters)

Tolerance: ±0.010 (0.25) unless specified otherwise

Schematics on following page

Schematics • Quad Port Auto MDI/MDIX 10/100Base-T Transformer Modules

Schematics



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Fax: Int. + 91 427 - 243 0034
E-mail: talema@talemaindia.com
Web Site: www.talemaindia.com



VO Series • SMD 10/100Base-TX VoIP Magnetics

Features

- Meets requirements of IEEE 802.3af and ANSI X3.263
- Supports 10Mbps and 100 Mbps VoIP applications
- Manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- Fully RoHS compliant and meets lead free reflow level J-STD-020C



Electrical Specifications @ 25°C

Inductance: 350µH minimum @ 100kHz, 100mV, 8mA

Leakage Inductance: 0.25µH @ 1MHz

C_{WV}: 25pF typical

Minimum isolation voltage: 1500 Vrms

Extended Operating Temperature Range: -40°C to +85°C

Storage Temperature: -40°C to +125°C

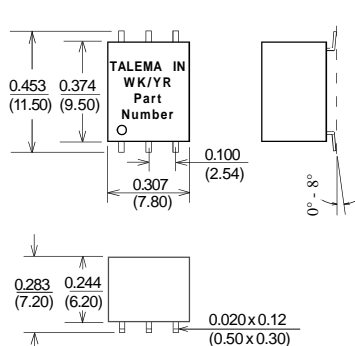
Standard Packing: Tape and Reel

Quality and consistency is guaranteed through 100% testing of the specified parameters for primary inductance, leakage inductance, turns ratio, DC resistance and interwinding capacitance. This ensures that the return loss and pulse wave shape requirements can be fully maintained. Additionally, all parts are tested for 1500V minimum isolation.

VO Series • SMD 10/100Base-T X VoIP Modules

Part Number	Turns Ratio ±2%	Nr. Ports	Insertion Loss (dB Typ)	Return Loss (dB Min)				Crosstalk (dB Typ)			Differential to Common Mode Rejection (dB Typ)			Schematic
				0.1 - 100 MHz	1-30 MHz	40 MHz	50 MHz	60-80 MHz	30 MHz	60 MHz	100 MHz	30 MHz	60 MHz	
VO-100A	1 : 1	1	-1.4	-16	-14	-13	-12	-45	-40	-35	-43	-37	-33	A
VO-200B	1 : 1	1	-1.4	-16	-14	-13	-12	-45	-40	-35	-43	-37	-33	B
VO-200C	1 : 1	1	-1.4	-16	-14	-13	-12	-45	-40	-35	-43	-37	-33	C
VO-300D	1 : 1	2	-1.4	-16	-14	-13	-12	-45	-40	-35	-43	-37	-33	D
VO-300E	1 : 1	2	-1.4	-16	-14	-13	-12	-45	-40	-35	-43	-37	-33	E
VO-300F	1 : 1	2	-1.4	-16	-14	-13	-12	-45	-40	-35	-43	-37	-33	F
VO-300F1	1 : 1	2	-1.4	-16	-14	-13	-12	-45	-40	-35	-43	-37	-33	F1
VO-300G	1 : 1	2	-1.4	-16	-14	-13	-12	-45	-40	-35	-43	-37	-33	G
VO-300H	1 : 1	2	-1.4	-16	-14	-13	-12	-45	-40	-35	-43	-37	-33	H
VO-400D	1 : 1	2	-1.4	-16	-14	-13	-12	-45	-40	-35	-43	-37	-33	D
VO-400F	1 : 1	2	-1.4	-16	-14	-13	-12	-45	-40	-35	-43	-37	-33	F
VO-400G	1 : 1	2	-1.4	-16	-14	-13	-12	-45	-40	-35	-43	-37	-33	G
VO-500H	1 : 1	4	-1.4	-16	-14	-13	-12	-45	-40	-35	-43	-37	-33	H
VO-500J	1 : 1	4	-1.4	-16	-14	-13	-12	-45	-40	-35	-43	-37	-33	J

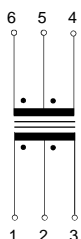
VO-100



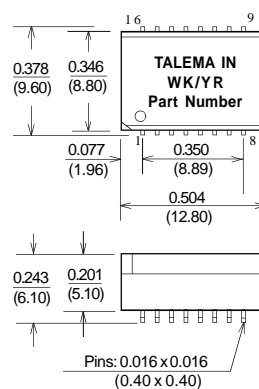
Surface coplanarity will be 0.004 (0.01) max.

Dimensions: Inches (Millimeters)
Tolerance: ±0.010 (0.25) unless specified otherwise

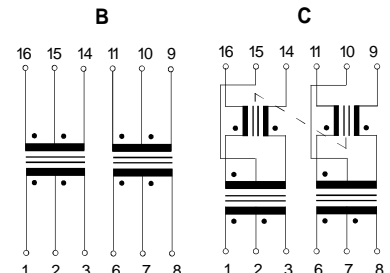
Schematic A



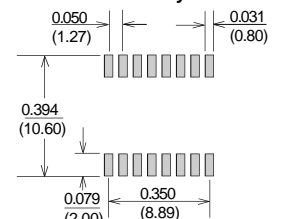
VO-200



Schematics



Suggested Pad Layout

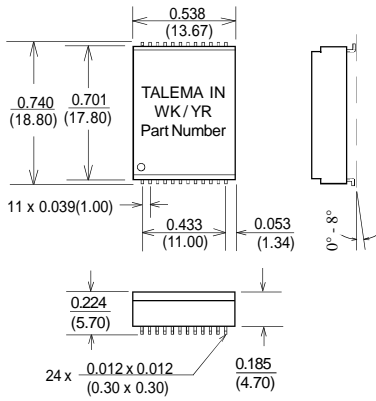


Dimensions & Schematics • VO Series 10/100Base-T VoIP Magnetics

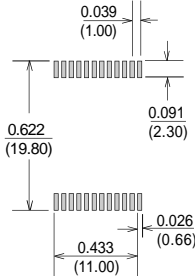
Surface coplanarity will be 0.004 (0.01) maximum

Dimensions: Inches (Millimeters)
Tolerance: ± 0.010 (0.25) unless specified otherwise

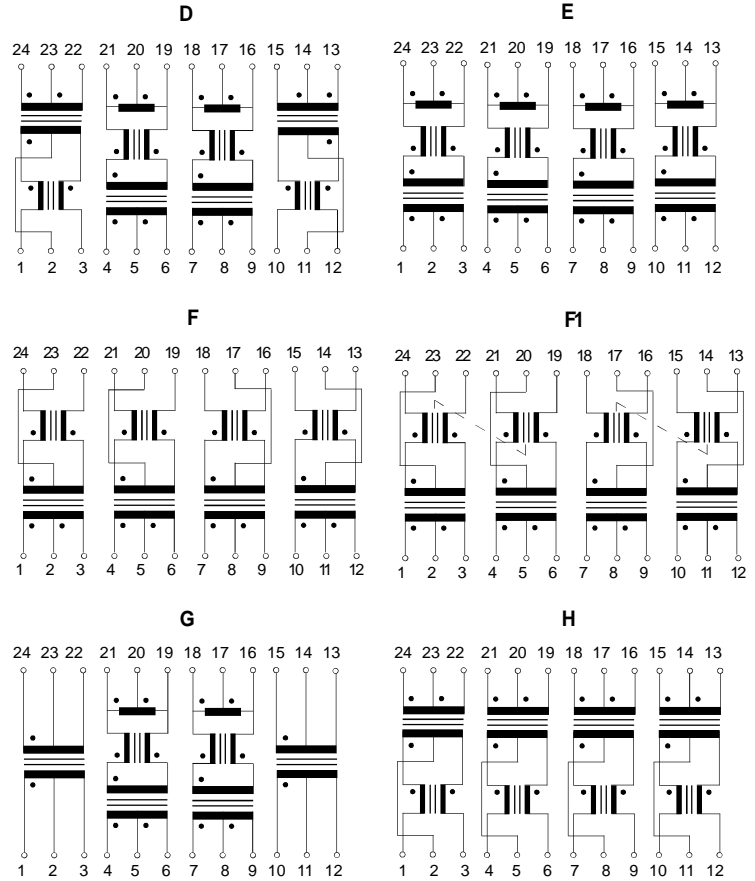
VO-300



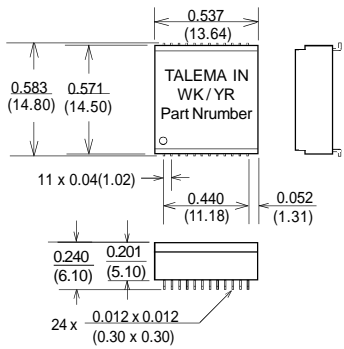
Suggested Pad Layout



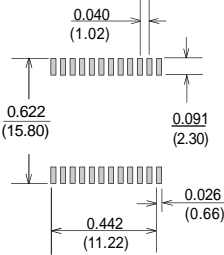
Schematics



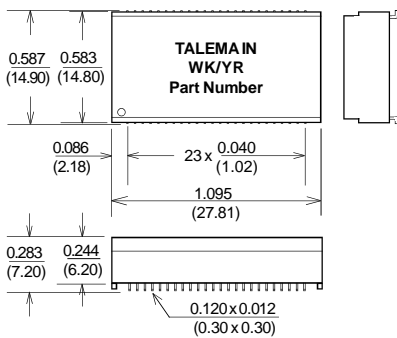
VO-400



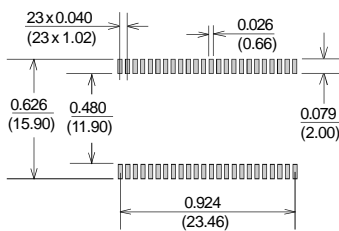
Suggested Pad Layout



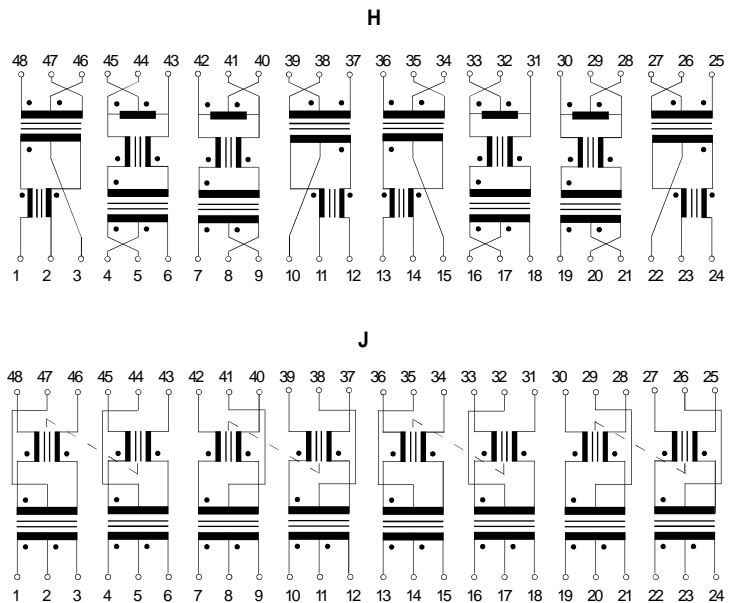
VO-500



Suggested Pad Layout



Schematics





IC Selection Guide for Gigabit Ethernet Transformer Modules

Talema manufactures a broad range of Isolation Transformer Modules for 10Base-T, 100Base-T, 1000Base-T, AUI and ATM applications. Many of the modules include a common mode choke for noise attenuation matched to the specified transceiver and are designed for extended temperature range (-40°C to +85°C) applications.

ENVIRONMENT

All TALEMA International Group manufacturing facilities are RoHS compliant and all chokes, inductors and HF components are produced in an Environment Management System (EMS) facility which is certified to ISO-14001:2004.



IC Manufacturer	IC Part Number	Talema Part Number	Turns Ratio	Common Mode Choke	Shunt Inductor	Package Style L x W x H (mm) 17.5 x 16 x 5.8
Broadcom (Allayer)	AL1023	TGS-100B	1 : 1	Y	Y	24 pin SOIC
Broadcom	BCM5204, BCM5400, BCM5401	TGS-100A TGS-100B	1 : 1 1 : 1	Y Y	N Y	24 pin SOIC 24 pin SOIC
	BCM5411, BCM5421, BCM5701	TGS-100B	1 : 1	Y	Y	24 pin SOIC
Level One (Intel)	LXT1000	TGS-100A TGS-100B	1 : 1 1 : 1	Y Y	N Y	24 pin SOIC
ILucent	LU8X31, LU8X32, LU8X24FT	TGS-100B	1 : 1	Y	Y	24 pin SOIC
Marvell Semiconductor	88E1000, 88E1000S, 88E1010, 88E1010S, 88E1020, 88E1020S, 88E1040	TGS-100A TGS-100B	1 : 1 1 : 1	Y Y	N Y	24 pin SOIC
	88E1011	TGS-100A	1 : 1	Y	N	24 pin SOIC
	88E1040, 88E1040S, 88E1041, 88E1041S, 88E1042, 88E1042S	TGS-100A TGS-100B	1 : 1 1 : 1	Y Y	N Y	24 pin SOIC
National Semiconductor	DP83891	TGS-100A TGS-100B	1 : 1 1 : 1	Y Y	N Y	24 pin SOIC
	DP83861, DP83892	TGS-100B	1 : 1	Y	Y	24 pin SOIC

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THE TALEMA GROUP • Magnetic Components for ISDN/LAN Data Communications

TGS Series • 100Base-T Single and Dual Port Interface Transformer Modules

Features

- Supports 1:1 Turns Ratio Transceivers for long haul Gigabit Ethernet 10/100/1000Base-T
- Meets requirements of IEEE 802.3ab standard for 1000Base-T
- Modules support 4 pairs of category 5 UTP cable
- Consistent and reliable coplanarity
- Manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified TALEMA facility
- Fully RoHS compliant and meets lead free reflow level J-STD-020C

Electrical Specifications @ 25°C

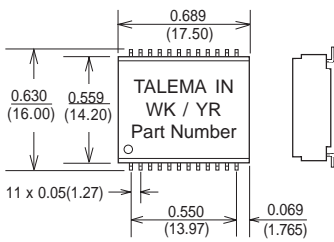
Inductance: 350µH minimum @ 100kHz, 100mV, 8mA
 Minimum isolation voltage: 1500 Vrms
 Operating Temperature Range: -40°C to +85°C
 Storage Temperature: -40°C to +125°C
 Standard Packing: Tape and Reel



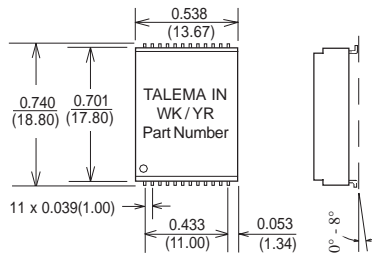
TGS Series Single and Dual Port SMD 100Base-T Isolation Transformer Modules

Part Number	Number of Ports	Turns Ratio ±2%	Insertion Loss (dB Typ)	Return Loss (dB Min)					Crosstalk (db Min)			Differential to Common Mode Rejection (dB Min)		V _P (Vrms)	Schematic
				Tx	1 - 100 MHz	1-30 MHz	40 MHz	50 MHz	60-80 MHz	100 MHz	30 MHz	60 MHz	100 MHz		
TGS-100A	1	1 : 1	-1.0	-18	-18	-16	-12	-10	-45	-37	-33	-39	-33	1500	A
TGS-100B	1	1 : 1	-1.0	-18	-18	-16	-12	-10	-45	-37	-33	-39	-33	1500	B
TGS-100C	1	1 : 1	-1.1	-18	-18	-16	-12	-10	-43	-37	-33	-39	-33	1500	C
TGS-200A	1	1 : 1	-1.0	-18	-18	-16	-12	-10	-45	-40	-33	-39	-33	1500	A
TGS-200B	1	1 : 1	-1.0	-18	-18	-16	-12	-10	-45	-40	-33	-39	-33	1500	B
TGS-300D	2	1 : 1	-1.4	-16	-14.4	-13.1	-12	-10	-43.5	-37.5	-33	-40	-35	1500	D
TGS-300E	2	1 : 1	-1.4	-16	-14.4	-13.1	-12	-10	-43.5	-37.5	-33	-40	-35	1500	E
TGS-300F	2	1 : 1	-1.4	-18	-14.4	-13.1	-12	-10	-43	-37	-33	-40	-35	1500	F

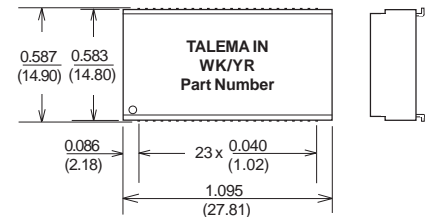
TGS-100



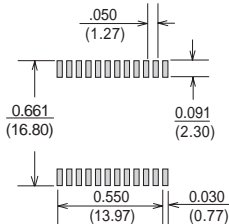
TGS-200



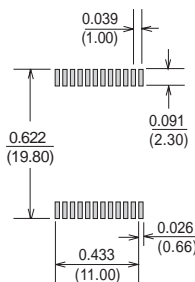
TGS-300



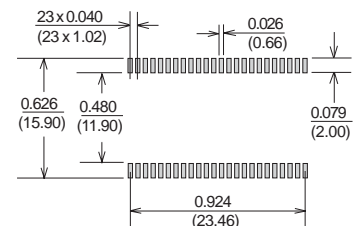
Suggested Pad Layout



Suggested Pad Layout



Suggested Pad Layout



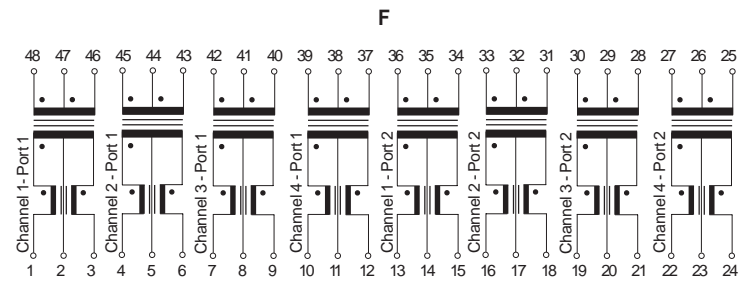
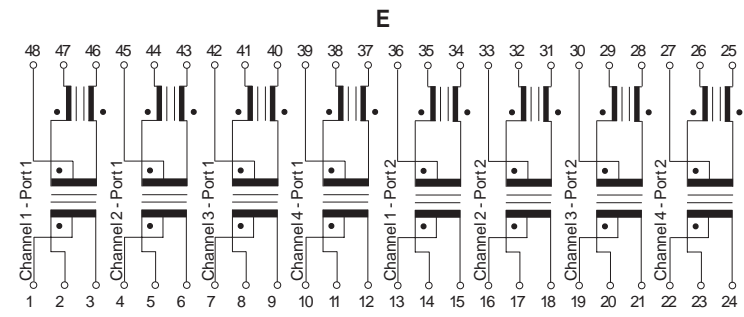
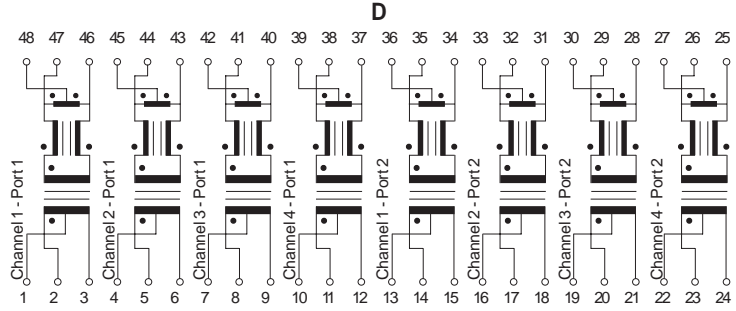
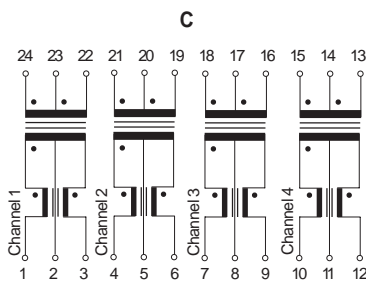
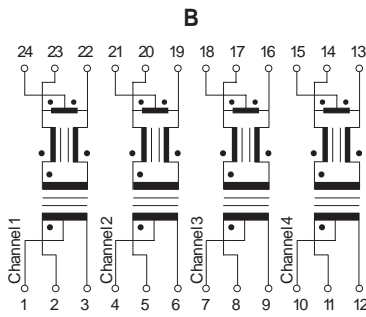
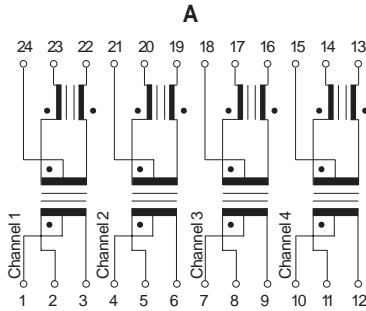
Surface coplanarity will be 0.004 (0.01) maximum
 Dimensions: Inches (Millimeters)
 Tolerance: ±0.010 (0.25) unless specified otherwise

Dimensions & Schematics • Single & Dual Port 100Base-T Transformer Modules

Surface coplanarity will be 0.004 (0.01) maximum

Dimensions: Inches (Millimeters)
Tolerance: ± 0.010 (0.25) unless specified otherwise

Schematics



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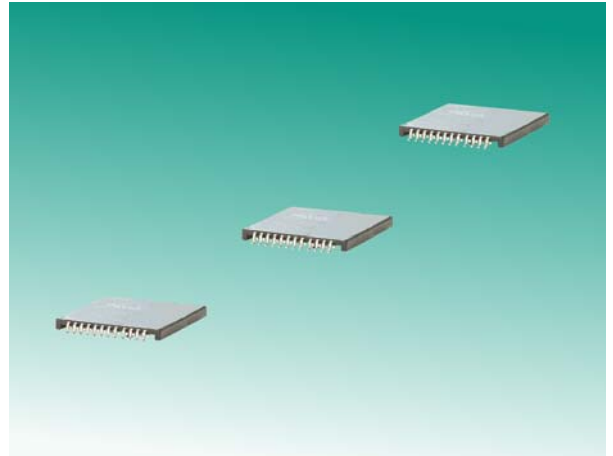
TGL Low Profile 1000Base-T Single Port Interface Transformer Modules

Features

- Supports 1:1 Turns Ratio Transceivers for long haul Gigabit Ethernet 10/100/1000Base-T
- Meets requirements of IEEE 802.3ab standard for 1000Base-T
- Modules support 4 pairs of category 5 UTP cable
- Consistent and reliable coplanarity
- Manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- Fully RoHS compliant and meets lead free reflow level J-STD-020C

Electrical Specifications @ 25°C

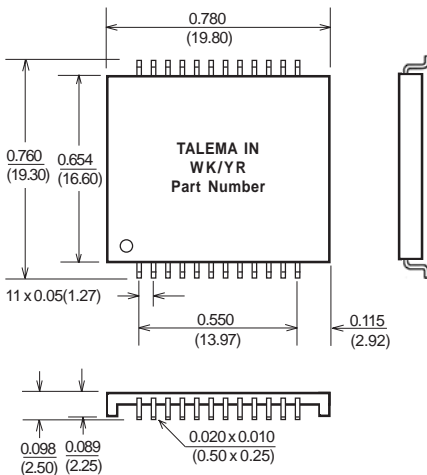
Inductance: 350µH minimum @ 100kHz, 100mV, 8mA
 Minimum isolation voltage: 1500 Vrms
 Operating Temperature Range: -40°C to +85°C
 Storage Temperature: -40°C to +125°C
 Standard Packing: Tape and Reel



TGL • Low Profile SMD 1000Base-T Single Port Isolation Transformer Modules

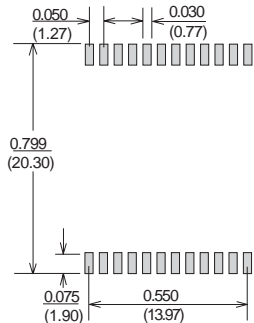
Part Number	Number of Ports	Turns Ratio ±2%	Insertion Loss (dB Typ)	Return Loss (dB Min)				Crosstalk (dB Min)			Differential to Common Mode Rejection (dB Min)		V _P (Vrms)	Schematic
		Tx		1 - 100 MHz	1-40 MHz	50 MHz	60-80 MHz	100 MHz	30 MHz	60 MHz	100 MHz	1-60 MHz		
TGL-100A	1	1:1	-1.0	-18	-16	-12	-10	-45	-37	-33	-39	-33	1500	A
TGL-100B	1	1:1	-1.0	-18	-16	-12	-10	-45	-37	-33	-39	-33	1500	B
TGL-100C	1	1 : 1	-1.1	-18	-16	-12	-10	-45	-37	-33	-39	-33	1500	C

TGL-100



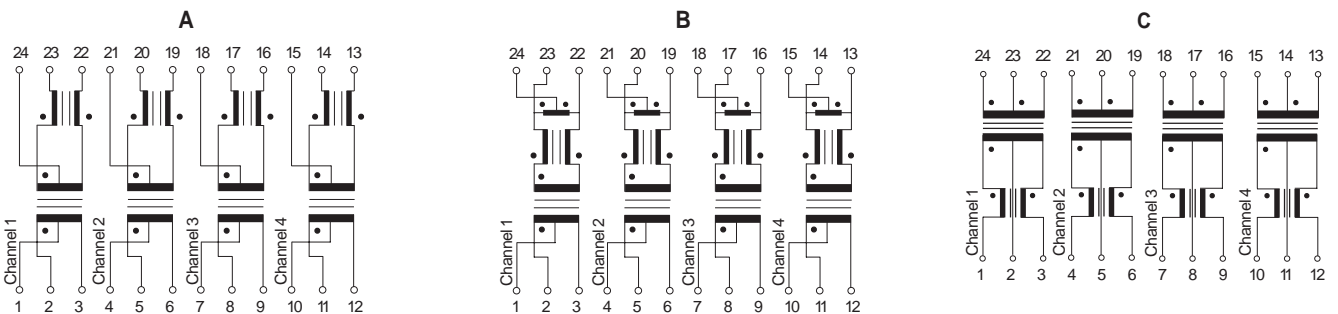
Surface coplanarity will be 0.004 (0.01) maximum

Suggested Pad Layout



Dimensions: Inches (Millimeters)
 Tolerance: ±0.010 (0.25) unless specified otherwise

Schematic





Dual Fibre Channel Transformers for 75 Ohm Coaxial & 150 Ohm STP Cable

Features

- Complies with ANSI X3T9.5, FC-0 over 133, 266 and 531 Mbps data rates for up to 100 meters on coaxial and STP cable
- Fast rise time
- Low profile, light weight SMD packages for pick and place compatibility while providing consistent and reliable coplanarity
- Excellent quality at extremely competitive price due to high volume production
- Manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- fully RoHS compliant and meets lead free reflow level J-STD-020C



Electrical Specifications

Ratings @ 25°C ambient

Minimum Isolation Voltage: 2000Vrms

Operating Temperature Range: 0 to +85°C

Storage Temperature: -25°C to +125°C

Inductance measured at 100kHz, 20mVrms

Standard Packaging: Tape & Reel

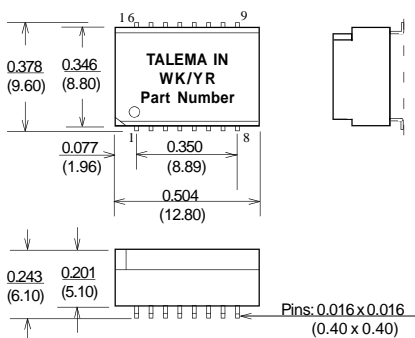
Weight: 2.5g

Dual Fibre Channel Transformers

Part Number	OCL (µH Min.)	Turns ratio ±5%	R _{CU} P (mOhms)	C _{WW} (pF Max)	Rise Time (ns Max) 20-80%	L _L sec (µH Max)	V _P (Vrms)
FCJ-7.5	7.5	1 : 1	200	5.0	0.5	0.10	2000
FCJ-15	15	1 : 1	200	5.0	0.8	0.10	2000
FCJ-30	30	1 : 1	200	5.0	1.6	0.10	2000
FCJ-60	60	1 : 1	200	5.5	2.0	0.10	2000

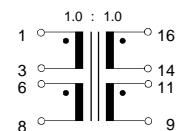
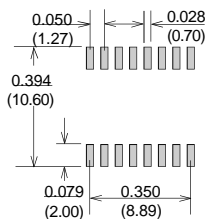
Dimensions & Schematics

Package



Surface coplanarity 0.004 (0.10) maximum

Suggested Pad Layout



Dimensions: Inches (Millimeters)

Tolerance: ±0.010 (0.25) unless specified otherwise

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150 Ohm Twinax Cable Dual Gigabit Transformers

Features

- Meets requirements of ANSI X3T9.5, FC-PH3 Fibre Channel Physical Layer Specification and IEEE 802.3z PMD
- Fast rise time
- Low profile, light weight SMD packages for pick and place compatibility while providing consistent and reliable coplanarity
- Excellent quality at extremely competitive price due to high volume production
- Manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- Fully RoHS compliant and meets lead free reflow level J-STD-020C



Electrical Specifications

Ratings @ 25°C ambient
 Minimum Isolation Voltage: 1500Vrms
 Operating Temperature Range: 0 to +85°C
 Storage Temperature: -25°C to +125°C

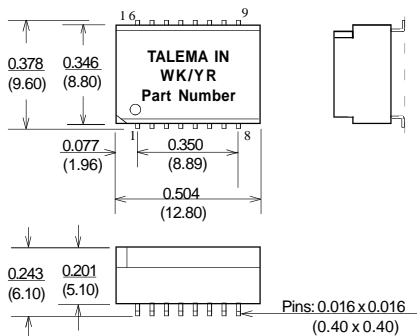
Inductance measured at 100kHz, 20mVrms
 Standard Packaging: Tape & Reel
 Weight: 2.5g

Dual Gigabit Isolation Transformers for 150 Ohm Twinax Cable

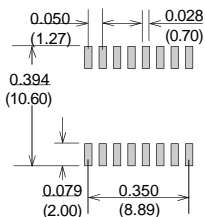
Part Number	OCL (µH Min.)	Turns ratio ±5%	R _{CU} P (mOhms)	Rise Time (ps Max) 20-80%	Low Frequency Cutoff (-3dB)	V _P (Vrms)	Schematic
TCJ-5.5-A	5.50	1ct : 1ct	210	350	<2.5MHz	1500	A
TCJ-5.5-B	5.50	1 : 1	210	280	<2.5MHz	1500	B

Dimensions & Schematics

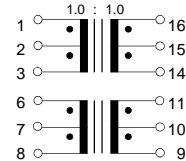
Package



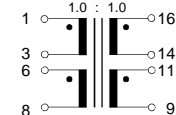
Suggested Pad Layout



A



B



Surface coplanarity 0.004 (0.10) maximum

Dimensions: Inches (Millimeters)
 Tolerance: ±0.010 (0.25) unless specified otherwise

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ATM 25MBPS Pulse Transformer for Novacom & SEEQ PHY Interface

Features

- Meets ATM 25.6 PHY specifications providing compatibility with Novacom NOV25PMD6 and SEEQ 93C95 PHY interface
- Impedence matching for 100 ohm UTP applications
- Low profile, light weight SMD packages for high density board placement
- Designed for pick and place compatability while providing consistant and reliable coplanarity
- Excellent quality at extremely competitive price due to high volume production
- Manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- Fully RoHS compliant and meets lead free reflow level J-STD-020C



Electrical Specifications @ 25°C

Operating Temperature Range: -40°C to +85°C

Storage Temperature: -40°C to +125°C

Minimum isolation voltage: 1500 Vrms

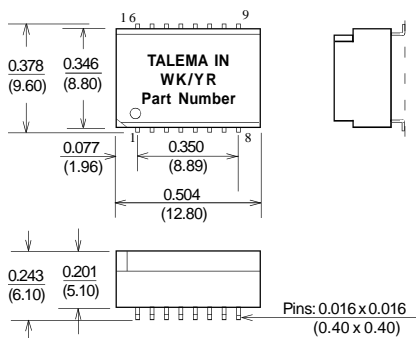
Standard Packaging: Tape & Reel

Quality and consistency is guaranteed through 100% testing of the specified parameters for primary inductance, leakage inductance, turns ratio, DC resistance and interwinding capacitance. This ensures that the return loss and pulse wave shape requirements can be fully maintained. Additionally, all parts are tested for 1500V minimum isolation.

Pulse Transformer for Impedance matching for 100 ohm UTP Applications

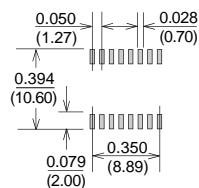
Part Number	Turns Ratio ±2%		OCL (µHMin.)	L _L (µH max)	C _{WW} (pF max)	DCR (Ohms max)
UTM-3000-J	1:1	1ct:1	3000	1.6	55	1.3

UTM Miniature Module

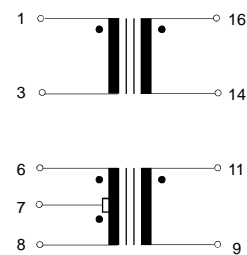


Surface coplanarity 0.004 (0.10) maximum
 Dimensions: Inches (Millimeters)
 Tolerance: ±0.010 (0.25) unless specified otherwise

Suggested Pad Layout



Schematic



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TGJ Series • General Purpose Coupling Transformers

Features

- EMI noise suppression in the common mode
- small size SMD package for high density board placement
- SMD package is pick and place compatible and provides consistent and reliable coplanarity
- low leakage inductance
- Manufactured in an ISO-9001:2000, TS-16949:2002 and SO-14001:2004 certified Talema facility
- Fully RoHS compliant and meets lead free reflow level J-STD-020C

Electrical Specifications

Ratings@ 25°C ambient

Power Rating with 40°C temperature rise : 500mW

Dielectric Strength between windings: 500Vrms

Operating Temperature Range: -40°C to +85°C

Storage Temperature: -40°C to +125°C

Insulation Resistance: 10,000 MOhm minimum

Test Frequency: Inductance measured @ 100kHz/20mVrms

Standard packing: Tape and reel

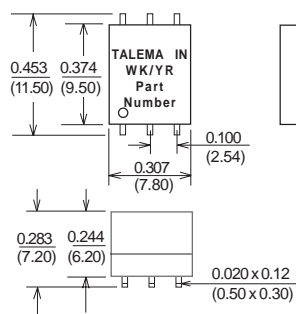


Typical Applications include: General Isolation, Telecommunications, LAN Coupling and Isolation, Modems, Voltage Step-Up or Step-Down, Impedance Matching and Baluns

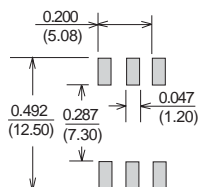
TGJ Series • SMD Common Mode EMI Noise Suppression Chokes

Part Number	OCL ($\mu\text{H} \pm 30\%$)	Turns Ratio $\pm 2\%$	L_L Pri/Sec ($\mu\text{H} \text{ Max}$)	C_C Pri/Sec (pF Max)	Rise Time (nS Max)	Primary ET (V- μS Min)	R_{CU}^P (mOhms)	R_{CU}^S (mOhms)	R_{CU}^T (mOhms)	Schematic
TGJ-50-6C	50	1:1:1	0.5	18	5.6	5.2	110	110	120	C
TGJ-200-6C	200	1:1:1	0.3	18	4.2	5.9	210	210	240	C
TGJ-500-6C	500	1:1:1	0.4	32	5.3	8.5	330	330	390	C
TGJ-2000-6C	2000	1:1:1	0.8	37	8.2	16	690	690	810	C
TGJ-5000-6C	5000	1:1:1	1.3	60	10.5	25	1370	1370	130	C
TGJ-200-6G	200	2:1:1	0.8	8	3.2	5.0	210	105	105	G
TGJ-500-6G	500	2:1:1	1.1	11	5.6	8.5	330	165	165	G
TGJ-2000-6G	2000	2:1:1	1.8	19	11	16	690	345	345	G
TGJ-5000-6G	5000	2:1:1	3.6	33	16	25	1100	550	550	G
TGJ-200-6D	200	1ct:1ct	0.3	18	4.2	5.0	210	210	--	D
TGJ-500-6D	500	1ct:1ct	0.4	32	5.3	8.5	300	330	--	D
TGJ-2000-6D	2000	1ct:1ct	0.8	37	8.2	16	690	690	--	D
TGJ-200-6H	200	2ct:1ct	0.8	8	3.2	5.0	300	150	--	H
TGJ-500-6H	500	2ct:1ct	1.2	12	5.6	8.5	330	165	--	H
TGJ-2000-6H	2000	2ct:1ct	1.8	19	11	16	690	345	--	H

TGJ



Suggested Pad Layout



Schematic



Surface coplanarity will be 0.004 (0.01) maximum

Dimensions: Inches (Millimeters)

Tolerance: ± 0.010 (0.25) unless specified otherwise



These miniature transformers are suitable for pulse applications requiring a very fast rise time and for 50 ohm wideband RF

Features

- SMD styles are pick and place compatible and provide consistent and reliable coplanarity
- EMI noise suppression in the common mode
- low leakage inductance
- excellent quality at extremely competitive price due to high volume production
- Manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- Fully RoHS compliant and meets lead free reflow level J-STD-020C



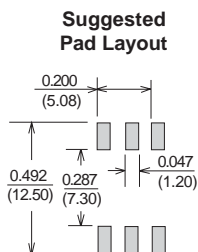
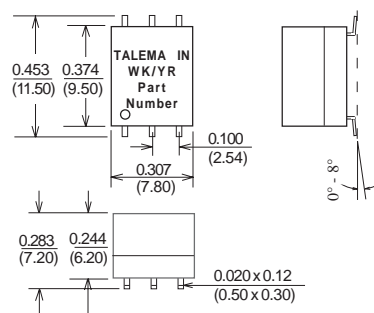
Electrical Specifications @ 25°C

Power Rating : 250mW
 Dielectric Strength between windings: 700Vrms
 Operating Temperature Range: -40°C to +85°C
 Storage Temperature: -40°C to +125°C
 Insulation Resistance: 10,000 MOhm minimum
 Test Frequency: Inductance measured @ 100kHz/20mVrms
 Standard Packaging: Tape & Reel

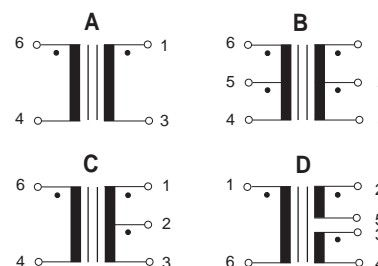
TRJ Series • SMD RF Pulse Transformers

Part Number	OCL (µH ±30%)	Turns Ratio ±2%	L _L Pri/Sec (µH Max)	C _C Pri/Sec (pF Max)	Rise Time (nS Max)	Primary ET (V-µS Min)	R _{CU} P (mOhms)	R _{CU} S (mOhms)	R _{CU} T (mOhms)	Bandwidth for -3dB Loss		Schematic
										Freq. (MHz)		
										Low	High	
TRJ-20-6A	20	1:4	0.10	10	6.0	1.25	90	360	--	0.20	60	A
TRJ-20-6C	20	1:4ct	0.10	10	6.0	1.25	90	360	--	0.20	60	C
TRJ-40-6A	40	1:2	0.14	15	3.0	2.00	130	260	--	0.10	110	A
TRJ-40-6C	40	1:2ct	0.14	15	3.0	2.00	130	260	--	0.10	110	C
TRJ-40-6D	40	1:1:1	0.10	12	2.0	2.00	130	130	130	0.10	150	D
TRJ-80-6A	80	1:1	0.15	12	2.2	2.50	190	190	--	0.05	110	A
TRJ-80-6B	80	1ct:1ct	0.18	15	3.0	2.50	190	190	--	0.05	90	B
TRJ-80-6C	80	1:1ct	0.18	15	3.0	2.50	190	190	--	0.05	90	C
TRJ-80-6E	80	1:1.414	0.30	18	4.0	2.50	270	270	--	0.05	50	A
TRJ-80-6F	80	1:1.414ct	0.20	18	3.0	2.50	270	270	--	0.05	50	C

TRJ



Schematic



Surface coplanarity will be 0.004 (0.01) maximum

Dimensions: Inches (Millimeters)

Tolerance: ±0.010 (0.25) unless specified otherwise

TDJ Series • General Purpose Transformers

Features

- SMD packages are designed for pick and place compatibility and provide consistent and reliable coplanarity
- excellent quality at extremely competitive price due to high volume production
- Manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- Fully RoHS compliant and meets lead free reflow level J-STD-020C

Electrical Specifications

Ratings@ 25°C ambient

Dielectric strength between windings: 500 Vrms

Power Rating: 250mW

Operating Temperature Range: -10° to +85°C

Storage Temperature: -25°C to +125°C

Insulation Resistance: 10,000 MOhm minimum

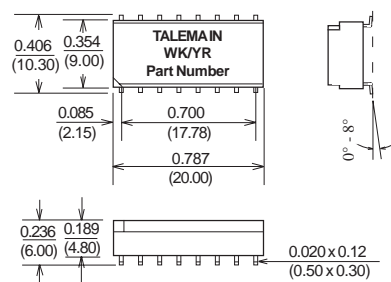
Test Frequency: Inductance measured @ 100kHz/20mVrms



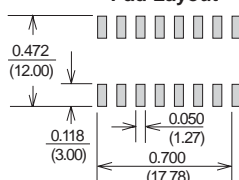
TD Series • SMD General Purpose Transformers

Part Number	OCL ($\mu\text{H} \pm 30\%$)	Turns Ratio $\pm 2\%$	L_L Pri/Sec (μH Max)	C_C Pri/Sec (pF Max)	Primary ET (V- μS Min)	$R_{CU P}$ (mOhms)	$R_{CU S}$ (mOhms)	Schematic
TDJ-30-16A	30	1:1	0.35	8	1.5	110	110	A
TDJ-50-16A	50	1:1	0.40	9	2.5	150	150	A
TDJ-100-16A	100	1:1	0.35	10	2.1	150	150	A
TDJ-200-16A	200	1:1	0.45	15	3.0	210	210	A
TDJ-500-16A	500	1:1	0.60	25	4.3	330	330	A
TDJ-30-16B	30	2:1	0.60	5	1.5	170	85	B
TDJ-50-16B	50	2:1	0.70	6	2.5	220	110	B
TDJ-100-16B	100	2:1	0.60	7	2.1	220	110	B
TDJ-200-16B	200	2:1	0.80	10	3.1	310	165	B
TDJ-500-16B	500	2:1	1.00	13	4.3	500	250	B

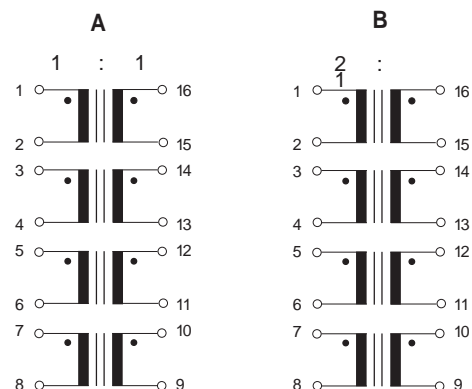
TDJ



Suggested Pad Layout



Schematic



Surface coplanarity will be 0.004 (0.01) maximum

Dimensions: Inches (Millimeters)

Tolerance: ± 0.010 (0.25) unless specified otherwise



SMD Data and Signal Line Filter Chokes

Features

- EMI noise suppression for data and signal line filtering
- High attenuation over a wide frequency range
- Manufactured in an ISO-9001:2000, TS-16949:2002 and ISO-14001:2004 certified Talema facility
- Other inductance values available
- Fully RoHS compliant and meets lead free reflow level J-STD-020C

Electrical Specifications @ 25°C

Nominal Voltage: 42Vac (50/60Hz), 80Vdc

Operating temperature: -40° to +85°C

Storage temperature: -40° to +125°C

Climatic category: according to IEC68-1 25/85/56

Test voltage between windings: 500 Vrms



Test frequency: Inductance measured @ 100kHz / 20 mVrms
Test Equipment: HP4192A

Miniature Common Mode Chokes for Data and Signal Line EMI suppression

Part Number	OCL (μH) ±30%	I _N (mA)	DCR (mOhms)	Number of Coils	Windings per Coil	Schematic	Part Number	OCL (μH) ±30%	I _N (mA)	DCR (mOhms)	Number of Coils	Windings per Coil	Schematic
Two Data Lines							Four Data Lines						
CTJ-2-110	11	300	160	1	2	A	CFJ-4-330	33	550	65	1	4	A
CTJ-2-101	100	300	180	1	2	A	CFJ-4-470	47	540	80	1	4	A
CTJ-2-471	470	200	380	1	2	A	CFJ-4-101	100	360	160	1	4	A
CTJ-2-102	1000	150	660	1	2	A	CFJ-4-471	470	360	65	1	4	A
CTJ-2-472	4700	150	1800	1	2	A	CFJ-4-102	1000	300	85	1	4	A
CLJ/CMJ-2-110	11	500	120	1	2	A	CFJ-4-472	4700	220	430	1	4	A
CLJ/CMJ-2-470	47	500	150	1	2	A	CCJ-4-260	26	600	65	1	4	B
CLJ/CMJ-2-101	100	500	260	1	2	A	CCJ-4-470	47	500	100	1	4	B
CLJ/CMJ-2-471	470	500	250	1	2	A	CCJ-4-101	100	400	130	1	4	B
CLJ/CMJ-2-102	1000	500	250	1	2	A	CCJ-4-221	220	400	190	1	4	B
CLJ/CMJ-2-472	4700	200	845	1	2	A	CCJ-4-471	470	400	120	1	4	B
CLJ/CMJ-2-103	10000	200	1200	1	2	A	CCJ-4-102	1000	350	190	1	4	B
CLJ/CMJ-2-473	47000	100	3450	1	2	A	CCJ-4-152	1500	350	120	1	4	B
CCJ-2-102	1000	550	140	1	2	A	CCJ-4-502	5000	330	220	1	4	B
CCJ-2-152	1500	550	100	1	2	A	CCJ-4-123	12000	170	790	1	4	B
CCJ-2-502	5000	500	180	1	2	A	CCJ-4-583	58000	90	2350	1	4	B
CCJ-2-123	12000	400	280	1	2	A							
CCJ-2-283	28000	270	520	1	2	A	CQJ-1.0-B	1000	400	200	1	4	B
CCJ-2-503	50000	200	1020	1	2	A	CQJ-5.0-B	5000	300	450	1	4	B
CCJ-2-703	70000	170	1540	1	2	A	CQJ-10-B	10000	300	1060	1	4	B
CDJ-1.0-A	1000	600	190	1	2	A	CQJ-58-B	58000	200	2400	1	4	B
CDJ-4.7-A	4700	350	575	1	2	A	CQJ-90-B	90000	150	4150	1	4	B
CDJ-12-A	12000	300	680	1	2	A	CUJ-240-16E	24	800	45	2	2	E
CDJ-28-A	28000	300	1020	1	2	A	CUJ-101-16E	100	450	135	2	2	E
CDJ-50-A	50000	300	1800	1	2	A	CUJ-102-16E	1000	450	135	2	2	E
CDJ-70-A	70000	300	2150	1	2	A	CUJ-472-16E	4700	300	310	2	2	E
Three Data Lines							Six Data Lines						
CFJ-3-240	24	1000	45	1	3	A	CUJ-240-16C	24	650	45	2	3	C
CFJ-3-102	1000	700	70	1	3	A	CUJ-101-16C	100	350	110	2	3	C
CFJ-3-222	2200	600	125	1	3	A	CUJ-102-16C	1000	330	170	2	3	C
CFJ-3-472	4700	350	340	1	3	A	CUJ-472-16C	4700	200	430	3	2	D
Four Data Lines							Eight Data Lines						
CLJ/CMJ-4-110	11	600	130	1	4	A	CUJ-240-16A	24	550	45	2	4	A
CLJ/CMJ-4-470	47	500	180	1	4	A	CUJ-101-16A	100	250	240	2	4	A
CLJ/CMJ-4-101	100	500	330	1	4	A	CUJ-471-16A	470	250	95	2	4	A
CLJ/CMJ-4-471	470	500	240	1	4	A	CUJ-472-16A	4700	160	605	2	4	A
CLJ/CMJ-4-102	1000	500	310	1	4	A	Sixteen Data Lines						
CLJ/CMJ-4-472	4700	300	860	1	4	A	COJ-16-470	47	300	200	8	2	--
CLJ/CMJ-4-123	12000	130	2300	1	4	A	COJ-16-502	5000	150	1900	8	2	--

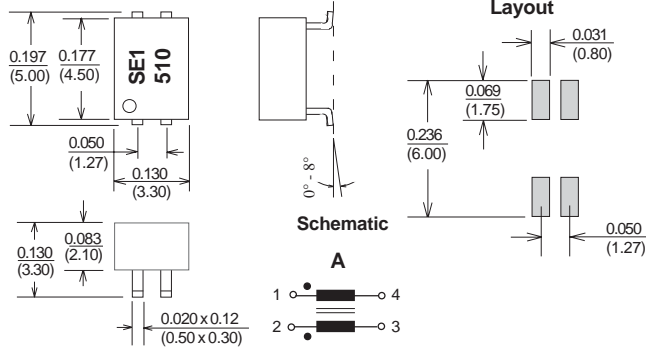
THE TALEMA GROUP • Magnetic Components for ISDN / xDSL / LAN Data Communications

Packaging & Dimensions • SMD Data and Signal Line Filter Chokes

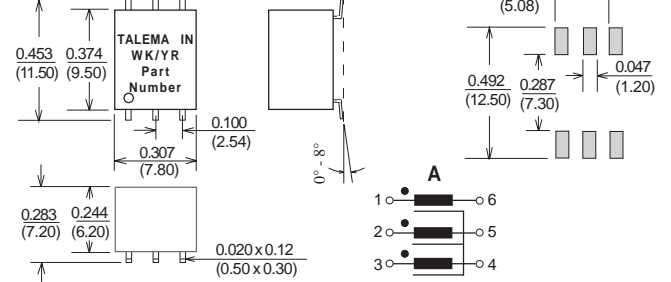
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Surface Coplanarity will be 0.004 (0.10) maximum

Tolerance: ±0.010 (0.25) unless specified otherwise

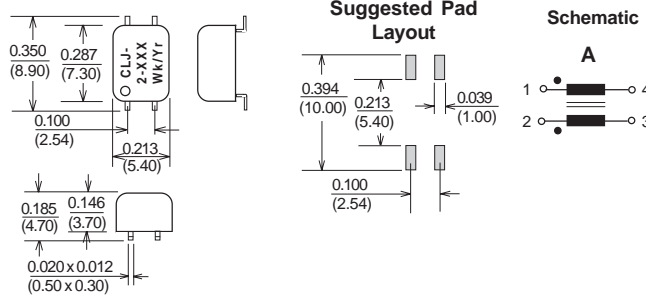
CTJ-2



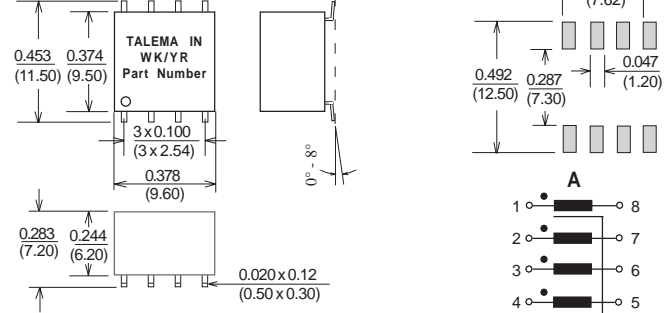
CFJ-3



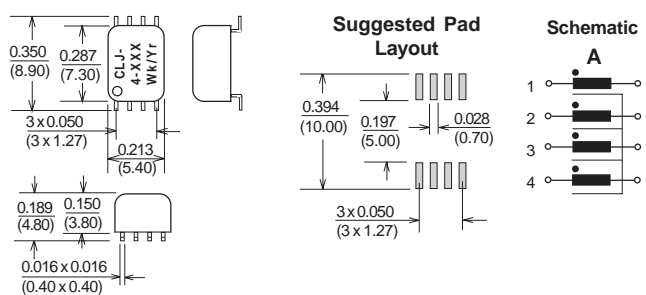
CLJ-2



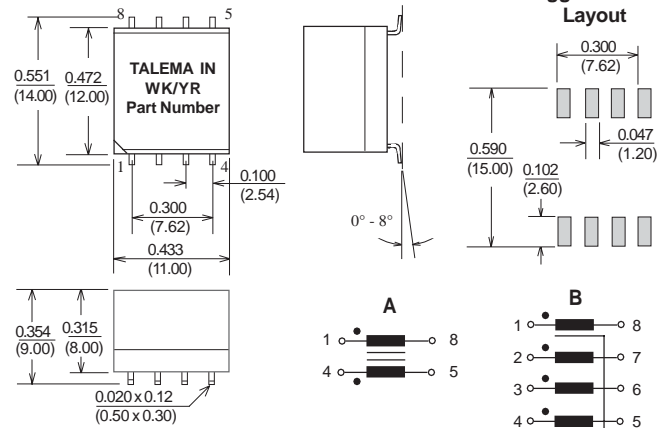
CFJ-4



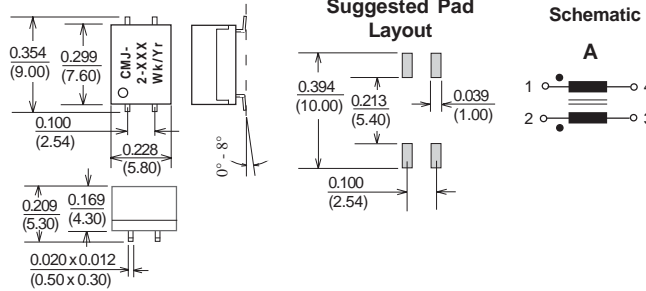
CLJ-4



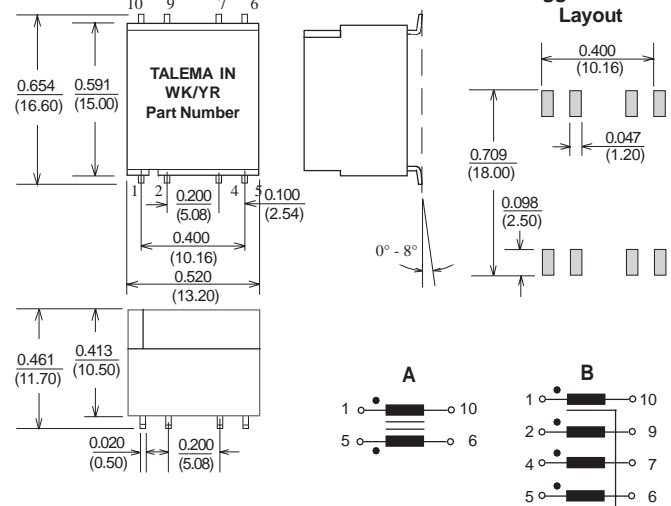
CCJ-2 / 4



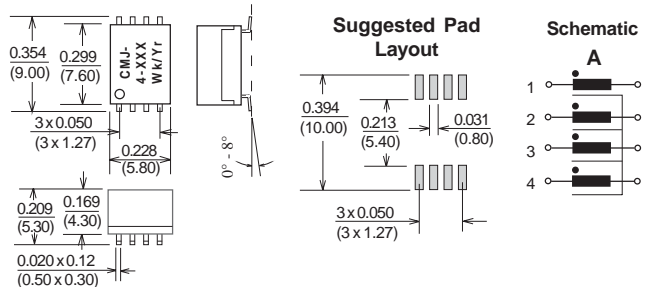
CMJ-2



CDJ / CQJ



CMJ-4

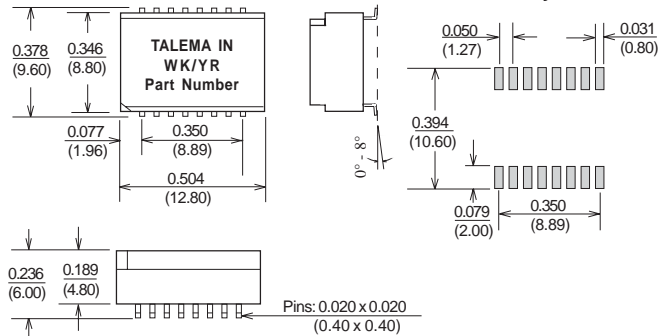




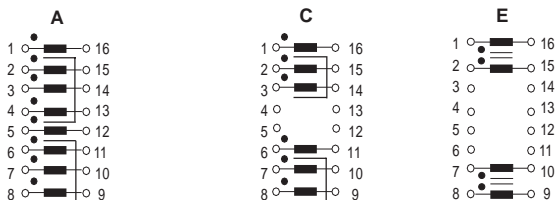
Dimensions: Inches (Millimeters)
Surface Coplanarity will be 0.004 (0.10) maximum

Tolerance: ±0.010 (0.25) unless specified otherwise

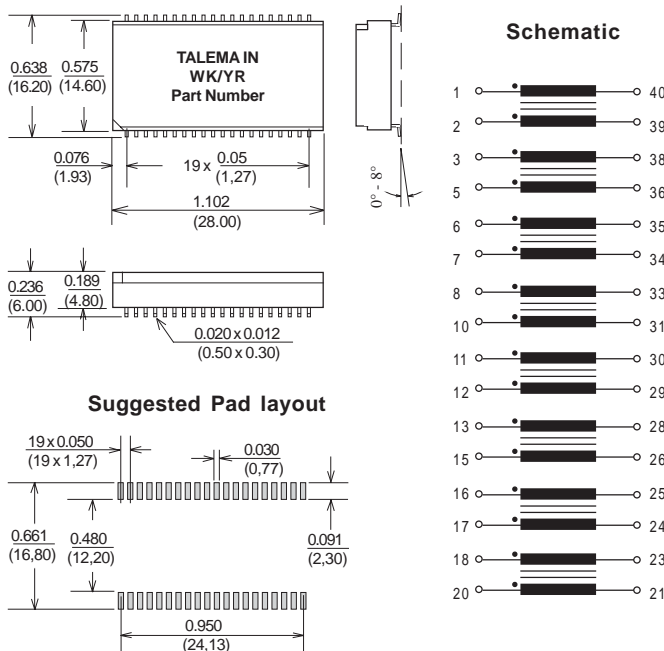
CUJ-XXX-16



Schematics



COJ Module



Sales & Marketing, Design and Manufacturing Facilities

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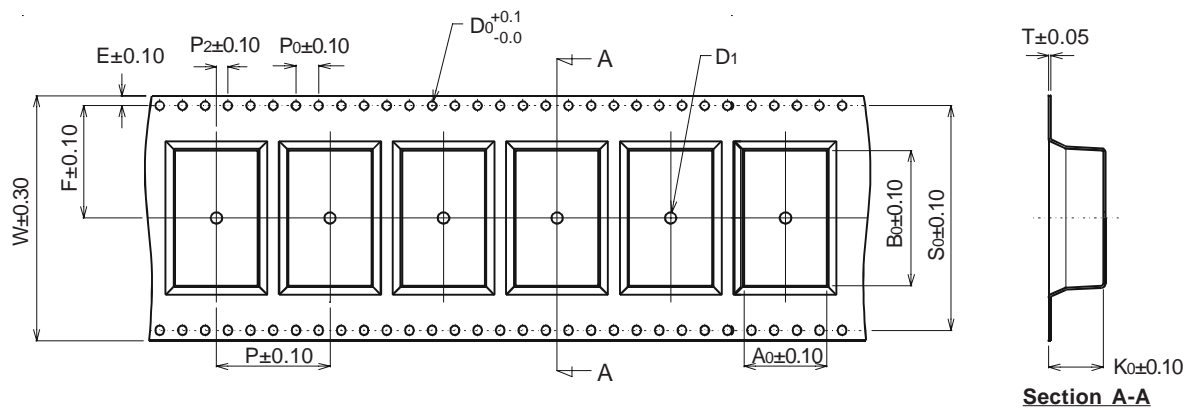
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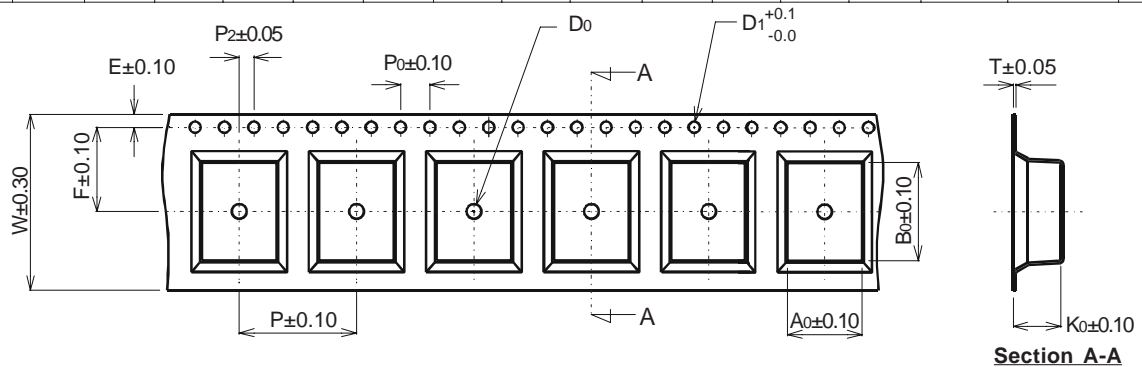
India
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Tape & Reel Packaging and Dimensions

Dimensions for Carrier Tape (Unit : mm)



Type	Dimensions in mm													Reel Size	Quantity (Pcs/Reel)	Quantity (Reel/Cased)
	W	F	E	P ₂	P ₀	D ₀	D ₁	P	A ₀	B ₀	S ₀	T	K ₀			
TMS	32.00	14.20	1.75	2.00	4.00	∅1.5	∅2.00	20.00	13.00	20.30	28.40	0.35	6.60	330X32	500	5/2500
TMCS	32.00	14.20	1.75	2.00	4.00	∅1.5	∅2.00	20.00	13.00	20.30	28.40	0.35	6.60	330X32	500	5/2500
TMQ	44.00	20.20	1.75	2.00	4.00	∅1.5	∅2.00	24.00	16.75	28.40	40.40	0.40	6.70	330x32	500	5/2500
TES	32.00	14.20	1.75	2.00	4.00	∅1.5	∅2.00	20.00	13.00	20.30	28.40	0.35	6.60	330X32	500	5/2500
TED-100	32.00	14.20	1.75	2.00	4.00	∅1.5	∅2.00	24.00	16.40	17.90	28.40	0.40	5.80	330x32	400	5/2000
TED-200	44.00	20.20	1.75	2.00	4.00	∅1.5	∅2.00	24.00	16.75	28.40	40.40	0.40	6.70	330x44	500	5/2500
TEQ	44.00	20.20	1.75	2.00	4.00	∅1.5	∅2.00	24.00	16.75	28.40	40.40	0.40	6.70	330x44	500	5/2500
TFG	32.00	14.20	1.75	2.00	4.00	∅1.5	∅2.00	24.00	16.40	17.90	28.40	0.40	5.80	330x32	400	5/2000
TEXQ	44.00	20.20	1.75	2.00	4.00	∅1.5	∅2.00	24.00	16.75	28.40	40.40	0.40	6.70	330x44	500	5/2500
VO-500	44.00	20.20	1.75	2.00	4.00	∅1.5	∅2.00	20.00	15.30	28.20	40.40	0.40	6.60	330x44	300	5/1500
TGS-100	32.00	14.20	1.75	2.00	4.00	∅1.5	∅2.00	24.00	16.40	17.90	28.40	0.40	5.80	330x32	400	5/2000
TGS-300	44.00	20.20	1.75	2.00	4.00	∅1.5	∅2.00	20.00	15.30	28.20	40.40	0.40	6.60	330x44	300	5/1500

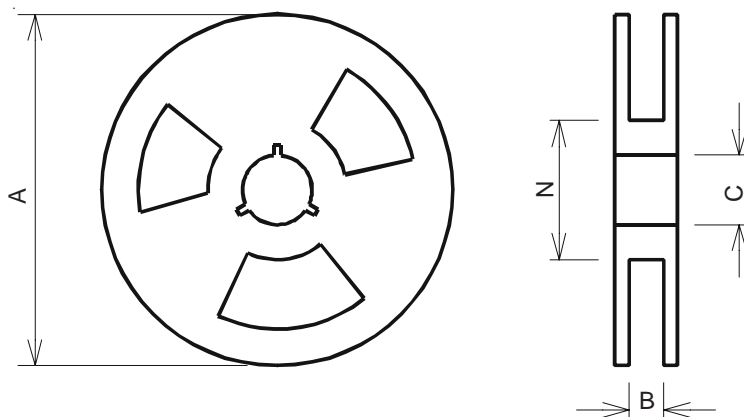


Type	Dimensions in mm													Reel Size	Quantity (Pcs/Reel)	Quantity (Reel/Cased)
	W	F	E	P ₂	P ₀	D ₀	D ₁	P	A ₀	B ₀	T	K ₀				
TMM	24.00	11.50	1.75	2.00	4.00	∅1.5	∅1.50	16.00	10.20	13.35	0.35	6.55	330x24	600	5/3000	
TMCM	24.00	11.50	1.75	2.00	4.00	∅1.5	∅1.50	16.00	10.20	13.35	0.35	6.55	330x24	600	5/3000	
TAM	24.00	11.50	1.75	2.00	4.00	∅1.5	∅1.50	16.00	10.20	13.35	0.35	6.55	330x24	600	5/3000	
TEM	24.00	11.50	1.75	2.00	4.00	∅1.5	∅1.50	16.00	10.20	13.35	0.35	6.55	330x24	600	5/3000	
TED-300	24.00	11.50	1.75	2.00	4.00	∅1.5	∅1.50	20.00	15.20	14.05	0.40	6.50	330x24	400	5/2000	
VO-100	24.00	11.50	1.75	2.00	4.00	∅1.5	∅1.50	20.00	11.90	8.20	0.40	7.60	330x24	600	5/3000	
VO-200	24.00	11.50	1.75	2.00	4.00	∅1.5	∅1.50	16.00	10.20	13.35	0.35	6.55	330x24	600	5/3000	
VO-400	24.00	11.50	1.75	2.00	4.00	∅1.5	∅1.50	20.00	15.20	14.05	0.40	6.50	330x24	400	5/2000	
FCJ	24.00	11.50	1.75	2.00	4.00	∅1.5	∅1.50	16.00	10.20	13.35	0.35	6.55	330x24	600	5/3000	
TCJ	24.00	11.50	1.75	2.00	4.00	∅1.5	∅1.50	16.00	10.20	13.35	0.35	6.55	330x24	600	5/3000	
UTM	24.00	11.50	1.75	2.00	4.00	∅1.5	∅1.50	16.00	10.20	13.35	0.35	6.55	330x24	600	5/3000	
TGJ	24.00	11.50	1.75	2.00	4.00	∅1.5	∅1.50	20.00	11.90	8.20	0.40	7.60	330x24	600	5/3000	
TRJ	24.00	11.50	1.75	2.00	4.00	∅1.5	∅1.50	20.00	11.90	8.20	0.40	7.60	330x24	600	5/3000	

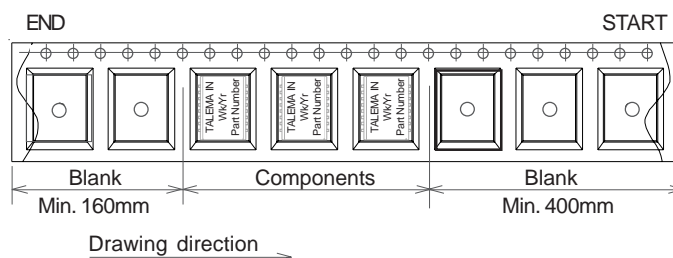


Tape & Reel Packaging and Dimensions

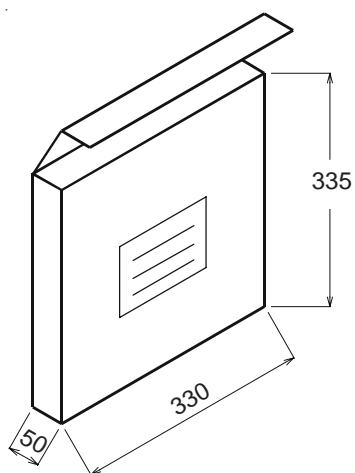
Reel Dimensions (Unit : mm)



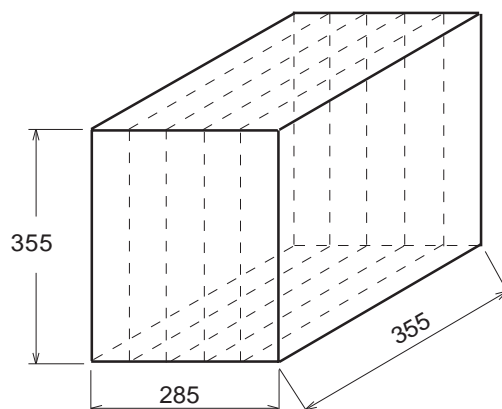
Reel Dimensions in mm				
Type	A	B	C	N
330 x 13	330	13	20.2	100
330 x 16	330	16	20.2	100
330 x 24	330	24	20.2	100
330 x 32	330	32	20.2	100
330 x 44	330	44	20.2	100



Inner Carton



Outer Carton



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Fax: Int.+573 364 5390
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Web Site: www.alfamag.com

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**SUMMARY
TOTAL PROGRAM**

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- TOROIDAL 50/60Hz TRANSFORMERS

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- TOROIDAL PCB TRANSFORMERS

SECTION 3

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TALEMA TOROIDAL TRANSFORMERS

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FOR POWER APPLICATIONS

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SECTION 7

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SECTION 11

- TRANSFORMERS FOR BROADBAND Access
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