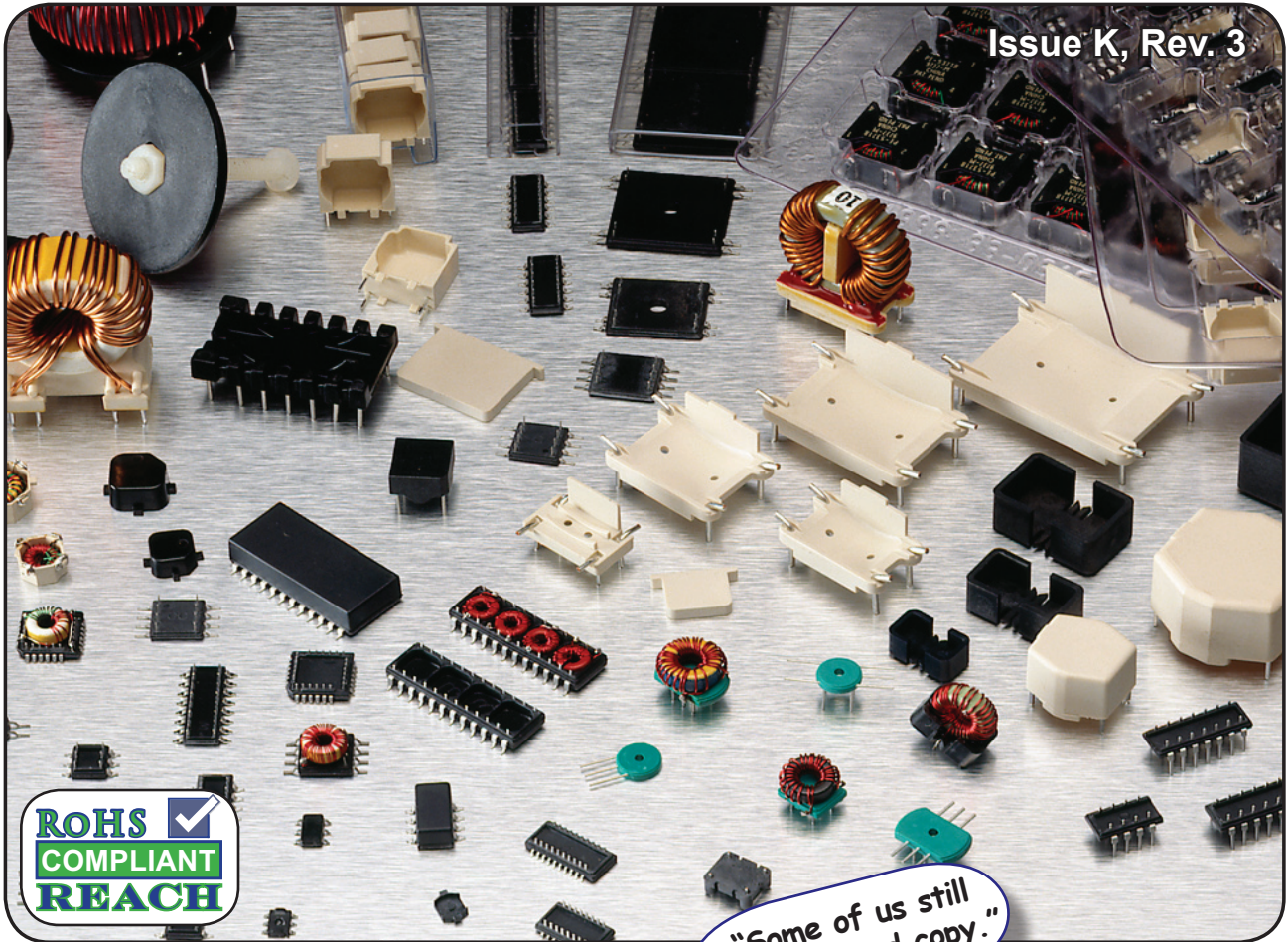


LODESTONE PACIFIC

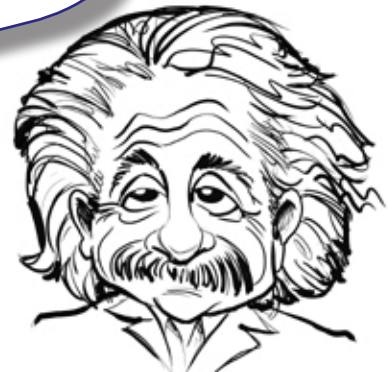
*"Finest in the Field"*

Issue K, Rev. 3



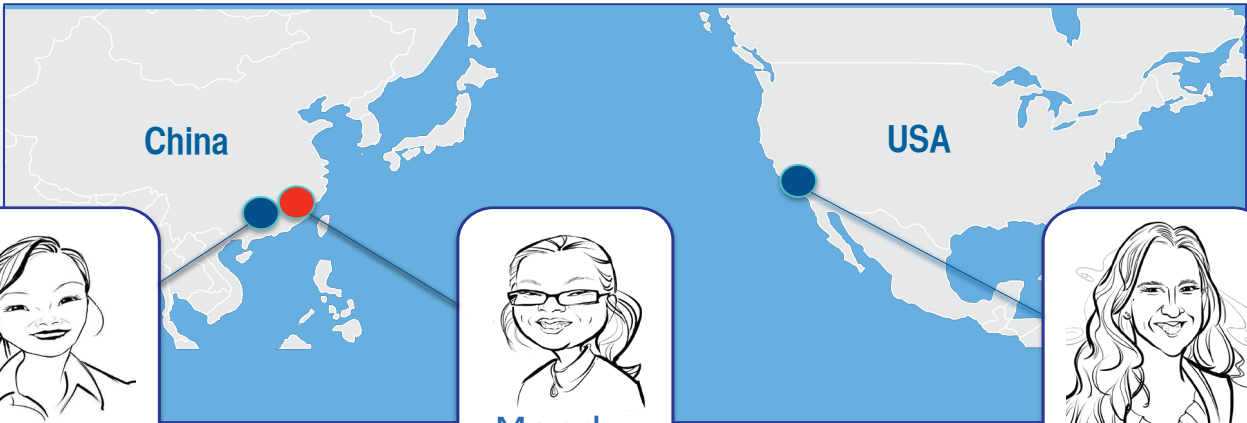
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### SURFACE MOUNT

Shape Code  
 SMRF=SMD Ceramic Mounts  
 SMDR=Bobbin Core Mounts  
 STM = Surface Toroid Mount  
 SMD = Surface Mount Device  
 SMRF = Surface Mount for RF

**STM 560 - 4**

Approximate Size (Hundredths of inches)  
 No. of Terminals

Sorted by the Maximum Wound Toroid Diameter to fit the Mount

Part No.	Page	Max Dia.
----------	------	----------

SMRF100-05	7	.150 [3.81]
SMRF110-04	7	.130 [3.30]
SMRF150-06	8	.150 [3.81]
SMRF155-5	8	.150 [3.81]
SMRF200-06	8	.230 [5.87]
SMRF205-02	9	.200 [5.08]
SMRF250-02	9	.250 [6.35]
SMRF258-4	9	.300 [7.62]
SMDR176-2	10	.180 [4.57]
SMDR186-2	10	.180 [4.57]
SMDR216-4	11	.220 [5.59]
SMDR226-2	11	.230 [5.84]
SMDR346-2	12	.350 [8.89]
SMDR416-2	12	.420 [10.7]
SMDR386-2	12	.390 [9.90]
SMDR396-4	13	.400 [10.1]
SMDR516-2	13	.520 [13.2]
SMDR526-02	13	.530 [13.5]
STM106-5	14	.106 [2.69]
STM107-6	14	.106 [2.69]
STM148-4	15	.140 [3.60]
STM152-6	15	.150 [3.81]
STM158-6	15	.158 [3.40]
SMD166-4	16	.165 [4.19]
SMD166-6	16	.165 [4.19]
CUPS	16	----
SMD170-8	17	.196 [5.00]

SMD177-16	17	.177 [4.50]
STM180-08/295	18	.190 [4.83]
SMD193-16	18	.193 [4.90]
SMD193-24	18	.193 [4.90]
SMD195-16	19	.195 [4.95]
STM198-06	19	.200 [5.08]
SMD201-12	19	.200 [5.08]
SMD202-22	20	.200 [5.08]
STM240-5	20	.240 [6.09]
STM241-6	20	.240 [6.09]
STM255-4	21	.255 [6.47]
STM260-4	21	.260 [6.60]
STM270-06	22	.260 [6.60]
STM280-8	22	.280 [7.11]
STM281-8	22	.280 [7.11]
STM303-04/175	22	.310 [7.87]
STM309-8	23	.309 [7.85]
STM360-4	23	.320 [8.13]
STM365-6	24	.360 [9.14]
STM366-6	24	.360 [9.14]
SMD369-24	24	.369 [9.37]
STM37CS-06	24	.405 [10.3]
STM375-8	25	.375 [9.52]
STM376-8	25	.375 [9.52]
STM390-8	25	.400 [10.1]
STM391-8	25	.400 [10.1]
STM40LC-02-LCP5	26	.450 [11.4]
STM40LCC-04-LCP5	26	.440 [11.2]
STM LC Series	26	----
STM LCC Series	27	----
STM HC Series	28	----
STM HCC Series	28	----
STM403-04/190	29	.410 [10.4]
STM453-06/195	29	.460 [11.7]
SMD472-24	29	.470 [11.9]
STM460-4	30	.445 [11.3]
STM560-4	30	.560 [14.2]
STM560-6	30	.560 [14.2]
STM581-8	31	.581 [14.7]
STM581-12	31	.581 [14.7]
SMD600-48	31	.600 [15.2]
STM80HCC-04	32	.890 [22.5]
STM800-8	33	.900 [22.9]
STM880-10	33	.880 [22.3]
CUPS	33	----

### HORIZONTAL

Shape Code  
 DIP= Dual-in-Line Package  
 TM = Toroid Mount  
 TR = Toroid Retainer  
 HTC = Horizontal Toroid Cup  
 HTM = Horizontal Toroid Mount  
 TCM = Toroid Common Mode

**TM 401 - 4**

Approximate Size (Hundredths of Inches)  
 No. of Terminals

Sorted by the Maximum Wound Toroid Diameter to fit the Mount

Part No.	Page	Max Dia.
----------	------	----------

TM200-4	34	.200 [5.08]
TM251-4	34	.195 [4.95]
TM305-06	35	.305 [7.75]
TM380-5	35	.340 [8.64]
TM400-8	35	.400 [10.2]
TM411-8	35	.400 [10.2]
TM401-4	36	.340 [8.64]
TM401-5	36	.340 [8.64]
TM401-6	36	.340 [8.64]
CUPS	36	----
TM450-6	37	.450 [11.4]
TM470-4	37	.470 [12.0]
TM475-8	37	.470 [12.0]
TM501-4	38	.550 [14.0]
TM501-6	38	.550 [14.0]
TM507-4	38	.400 [10.2]
TM550-8	39	.550 [14.0]
TM551-8	39	.550 [14.0]
TM595-8	39	.570 [14.5]
HTC Series	40	----
HTM Series	40	----
TCM Series	41	----
XM1300-08	42	1.50 [38.1]
XM2200-08	42	2.30 [58.4]
HTS Series	43	----
TR Series	43	----
Large TR Series	43	----
TM1850-12	44	1.85 [47.0]
TM2300-12	44	2.30 [58.4]

### VERTICAL MOUNTS

Shape Code  
 VTM -Vertical Toroid Mount  
 VTB -Vertical Toroid Boat  
 TS - Toroid Spacer  
 VTC -Vertical Toroid Cup  
 KM - Klip Mount

**VTM 600 - 6**

Approximate Size (Hundredths of Inches)  
 No. of Terminals

Sorted by the Maximum Wound Toroid Diameter to fit the Mount

Part No.	Page	Max Dia.
----------	------	----------

VTM225-2	45	.225 [5.72]
VTM370-4	45	.370 [9.39]
VTM421-02	47	.320 [8.13]
VTM421-03	47	.320 [8.13]
VTM455-4	46	.455 [11.6]
VTM555-4	46	.555 [14.1]
VTM590-3	47	.590 [15.0]
VTM600-6	47	.600 [15.2]
VTM620-2	47	.590 [15.0]
VTM650-6	48	.650 [16.5]
VTM681-4	48	.812 [20.2]
VTM800-08	49	.785 [19.9]
VTM945-2	49	.950 [24.0]
VTM950-6	49	.900 [22.9]
VTM Series	50	----
KM Series	50	----
VTM100-4	51	1.15 [29.2]
TS Series	51	----
VTC Series	52	----
VTM955-4	53	.955 [24.3]
VTM980-3	53	.980 [25.0]
VTM1050-10	54	1.05 [26.7]
VTM1060-08	54	1.04 [26.4]
VTB1200-012	55	1.40 [35.6]
VTM1300-14	55	1.30 [33.0]
VTM1600-02	55	1.70 [43.2]
10 Term. VTM	56	----
VTB Series	56	----

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 Packaging Trays 57 ----

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## Custom Moldings

Lodestone Pacific can create CAD drawings from your rough draft, prototype, napkin sketch, or formal drawing, and then design, tool and mold any shape. We provide both high quality, low cost Prototype Tooling and Production Tooling.

## Selecting the Best Plastic for Your Application

**Thermoplastic vs. Thermoset** Plastics used in molding toroid mounts and headers come in two broad categories, thermoset and thermoplastic. Thermoset plastics include epoxies, phenolics and Diallyl Phthalate (DAP) that are known for their environmental stability and ability to tolerate over 750° F without melting. Thermoplastics include nylon, polypropylene, polycarbonate, polyester (Valox, Rynite), LCP (Vectra) and PPS (Ryton) that will begin to melt if they experience temperatures above 500° F for an extended period. The chemistry that gives thermoplastics a lower melting point also makes them less expensive to mold, providing a cost advantage over thermoset plastics.

Thermoplastics are widely used in applications that do not experience temperatures above 500° F, except for a few seconds during the winding lead to terminal and component to PCB soldering process. There are trade offs between the two plastic types that must be considered. The mount may be less expensive if molded from thermoplastic but will require pre-tinning the winding leads and careful heat management while soldering the leads to the mount and soldering the mount to the circuit board. The thermoset mount can be more expensive, but with self stripping magnetic wire, several terminations can be soldered at once and the wire will not need to be stripped or pre-tinned, possibly making the overall cost of producing the component lower. In addition, with RoHS requirements that remove lead, plastics will be experiencing higher solder temperatures that will push the limits of thermoplastics.

The table below provides information about all that materials used in this catalog. This table is for reference only and is intended to provide general information about the materials. The various plastic types within the thermoplastic or thermoset categories will have individual characteristics that relate to moldability, roughness, brittleness, flexibility, thermal expansion, moisture absorption, dielectric constant, volume resistivity, and cost. Current material performance information can be found at the material manufacturer's web site. All of the plastic materials used in Lodestone Pacific toroid mounts and headers are UL Approved and traceable to the UL Recognized material manufacturer. Lodestone Pacific can provide certifications of materials based on the UL file No. for the materials as found on the materials "UL Yellow Card." RoHS and REACH Certification on all materials in this table are available from our On-Line REACH Database. [www.lodestonepacific.com/reach](http://www.lodestonepacific.com/reach)

Material Type	Mat'l Code	Mfg	Mfg Web Site	Trade Name	UL Card No.	UL Flameability	System Class **	RoHS Compliant	Halogen Free
<b>THERMOSET</b>									
Phenolic	PH	Sumitomo	www.sumitomo-chem.co.jp	PM-9630	E41429	UL94-VO	N (200°C)	Yes	No
Phenolic	PH2	Sumitomo	www.sumitomo-chem.co.jp	PM-9820	E41429	UL94-VO	N (200°C)	Yes	No
Phenolic	PH3	Chang Chun	www.ccp.com.tw	T357 / T373J / T375J	E59481	UL94-VO	F (155°C)	Yes	No
Phenolic	PH4	Hitachi	www.hitachi.us	CP-J-8700	E42956	UL94-VO	F (155°C)	Yes	No
Diallyl Phthalate	DAP	Synress-Amico	www.electricity-tool.com	5562	E48036	UL94-VO	F (155°C)	Yes	No
Diallyl Phthalate	DAP2	Cosmic	www.cosmic.vcar.com	D72	E64213	UL94-VO	F (155°C)	Yes	No
Diallyl Phthalate	DAP3	Sumitomo	www.sumitomo-chem.co.jp	52-70-70	E123472	UL94-VO	F (155°C)	Yes	No
Diallyl Phthalate	DAP4	Wah Hong	www.wahhong.com	WH-9100	E150608	UL94-VO	B (130°C)	Yes	No
<b>THERMOPLASTICS</b>									
Glass Filled Nylon	GFN	DuPont	www.dupont.com	FR50	E41938	UL94-VO	F (155°C)	Yes	No
Glass Filled Nylon	GFN1	DuPont	www.dupont.com	HTNFR52630NH	E41938	UL94-VO	F (155°C)	Yes	Yes
Glass Filled Nylon	GFN2	DuPont	www.dupont.com	70G33L	E41938	UL94-HB	F (155°C)	Yes	No
Glass Filled Nylon	GFN3	DuPont	www.dupont.com	132F/101L (Zytel)	E41938	UL94-V2	B (130°C)	Yes	No
Glass Filled Nylon	GFN4	RTP	www.rtpcompany.com	RTP205FR	E84658	UL94-VO	F (155°C)	Yes	No
Glass Filled Nylon	GFN5	DSM Co.	www.dsm.com	TE250F8 (Stanyl)	E172082	UL94-VO	B (130°C)	Yes	No
Glass Filled Nylon	GFN7	Ginar Tech	www.ginar.com	AN4720SN	E154352	UL94-HB	B (130°C)	Yes	No
Glass Filled Nylon	GFN8	Assend	www.ascendmaterials.com	Vydyne 909	E70062	UL94-VO	F (155°C)	Yes	No
Polyethylene	PET	DuPont	www.dupont.com	FR530 (Rynite)	E41938	UL94-VO	N (200°C)	Yes	No
Polyethylene	PET2	DuPont	www.dupont.com	RE19041 (Rynite)	E41938	UL94-VO	N (200°C)	Yes	Yes
Poly Butylene	PBT	Chang Chun	www.ccp.com.tw	4130	E59481	UL94-VO	B (130°C)	Yes	No
Polyphenylene	PPS	Phillips	www.philips.com	R-4 (Ryton)	E54700	UL94-VO	F (155°C)	Yes	No
Polyphenylene	PPS2	Poly Plastics	polyplasticproduct.com	1140	E109088	UL94-VO	B (130°C)	Yes	No
Liquid Crystal	LCP	Sumitomo	www.sumitomo-chem.co.jp	E4008	E54705	UL94-VO	F (155°C)	Yes	Yes
Liquid Crystal	LCP2	Ticona	www.ticona.com	6130L (Zenite)	E344082	UL94-VO	N (200°C)	Yes	Yes
Liquid Crystal	LCP3	Nippon	www.negamerica.com	HM402	E91944	UL94-VO	F (155°C)	Yes	Yes

**Notes:**

- \* Not all products are available in all materials. Material lots are traceable to the plastic manufacturer. Percent of Re-Grind at or below manufacturer's recommendations. Material specifications available at [www.lodestonepacific.com/reach](http://www.lodestonepacific.com/reach)
- \*\* Insulation System Class Temperature is for use as mechanical support. Review specific insulation systems to determine if the material is suitable as a ground insulation or as mechanical support at a higher temperature class.

## Agency Regulations

**Underwriters Laboratory (UL)** is a non-profit private agency that evaluates public safety for a variety of products that include electronic devices. UL regulations are focused on maintaining the integrity of an insulation system so a short circuit does not occur. This is done by first ensuring the insulation structure within a component is sufficient and that it will not degrade over time.

UL opens a file for each plastic manufacturer where it records the safety ratings for each manufacturer's plastic. On this UL file or "Yellow Card", each plastic will be rated by temperature class and flammability. The UL temperature class designates the maximum temperature a plastic will tolerate during normal operation. Design engineers need to understand the temperature demands of their application and select a plastic to match.

**The UL94 Flammability Rating** is a measure of whether a plastic will self extinguish when held over a flame and then removed. The faster the plastic stops supporting a flame, the higher the flammability rating. If components are going to be used in a consumer or industrial application, the highest rating of VO is generally required. All Lodestone Pacific plastics are rated UL94-VO.

**UL Standard 1446:** In a transformer or inductor, the integrity of the wire insulation is a critical safety concern. Transformer components including wire insulation, bobbin, toroid mounts, tape, ferrite, iron powder, varnish, epoxy, and glues each have their own unique chemistry. UL conducts extensive testing under UL Standard 1446 to ensure that the chemistry of one component, or several components in combination, do not have an adverse effect on the component's wire insulation over time and at an elevated temperature.

Once this combination of ingredients are tested and approved, all the tested subcomponents become part of a UL recognized insulation system specific to an operating temperature or class. For a design engineer designing a product, using the sub-components listed in a recognized insulation system will insure a reliable insulation and proven sub-component compatibility.

## Requirements on Hazardous Substances, or RoHS.

The electronics industry worldwide has developed several programs that limit or eliminate specific elements and compounds that are harmful to the environment from component construction. An important directive is the Requirements on Hazardous Substances, or RoHS. This directive seeks to eliminate or reduce 6 harmful elements or compounds. While some flame-retardants in the plastic moldings need to be replaced, the most significant banned element in the RoHS directive is the lead (Pb) that is used in the plating and solder on terminals.

**Removing Lead Increases Solder Temperatures:** When tin (Sn) and lead (Pb) are combined in an alloy of approximately 60% tin and 40% lead, this alloy has a melting point of approximately 361°F (183°C). When you "get the lead out", the fundamentals of solder connections change significantly. Solder alloys that are more than 95% tin have a 90°F (50°C) higher melting point. (Approximately 450°F, 230°C). Components, including the plastic moldings, must now tolerate this increased solder temperature during the solder process.

Thermoplastics like Nylon, Pet, and PPS will become soft above 450°F (230°C), especially when heat is transferred up a terminal. If the plastic experiences these temperatures for an extended time, the terminals will begin to "float" in the plastic out of alignment. Using plastics that are not properly engineered for process temperatures, or do not meet the requirements of agency regulations, will have the potential to fail. All plastics used in Lodestone Pacific products are RoHS compliant and certified to a UL Temperature Class. For more information, visit [www.lodestonepacific.com/reach.php](http://www.lodestonepacific.com/reach.php)

## REACH Directive

REACH is a European Union (EU) Regulation that stands for Registration, Evaluation, Authorization, and Chemicals. REACH is a far-reaching legislation that affects certain manufacturers and distributors of chemicals and articles sold into the EU. Lodestone Pacific is not required to register as a manufacturer under REACH since all polymers (plastics) are specifically excluded from REACH and the articles in this catalog do not "intentionally release" chemicals targeted by the regulation. However, users of our products may need to certify Lodestone Pacific's products do not contain regulated materials in excess of the regulations limits.

### RoHS and REACH Documents Database

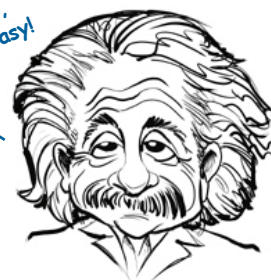
All documentation related to elements and compounds in this catalog are maintained in the Lodestone Pacific RoHS and REACH database. From this browser based database on our web site, customers can view and download certifications for all our products and the documents requested that assure REACH Conformance.

To access the REACH database, go to [www.lodestonepacific.com/reach.php](http://www.lodestonepacific.com/reach.php)

UL Class	Max Temperature Rating
A	105°C (221°F)
B	130°C (266°F)
F	155°C (311°F)
H	180°C (356°F)
N	200°C (392°F)

UL94 Rating	Flammability Specifications
VO	Will support combustion for up to 10 seconds and self extinguishes when tested under specific conditions.
V1 & V2	Will support combustion for up to 30 seconds and self extinguishes when tested under specific conditions. V2, dripping melted material allowed.
HB	Slow burning on horizontal specimen; burn rate <76mm per min for a thickness < 3mm.
<b>For more information:</b> <a href="http://www.ul.com/global/eng/pages/offering/industries/chemicals/plastics/testing/flame/">www.ul.com/global/eng/pages/offering/industries/chemicals/plastics/testing/flame/</a>	

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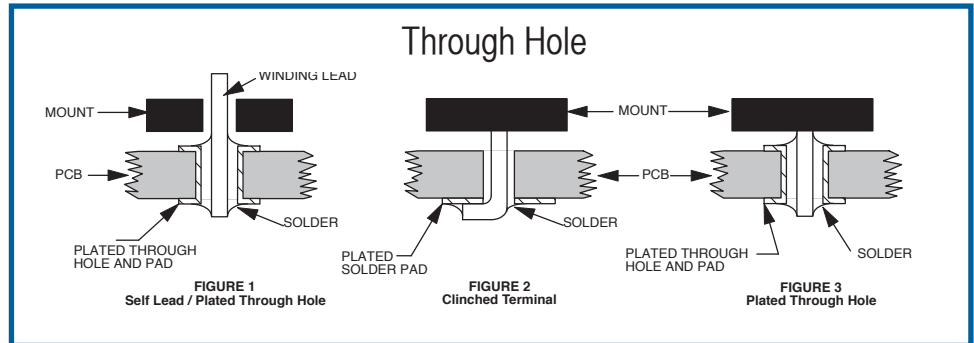
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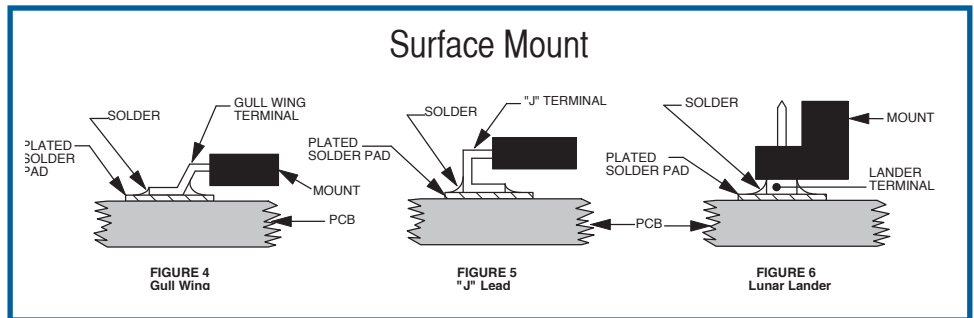


## Connection Integrity

**Through Hole:** Magnetic devices are a relatively heavy component on a circuit board and therefore the mechanical characteristics of the solder connection are as important as its electrical integrity. Whether using a fixed terminal or the wound component's lead to self lead (Figure 1), the solder connection is critical. Printed circuit boards with unplated through holes may require a clinched terminal as described in MIL-STD-2000 (Figure 2). This will avoid stresses that contribute to an intermittent or failed connection. Printed circuit boards with plated holes offer good mechanical integrity without clinching, providing a successful intermetallic bond is created during the board solder process (Figures 1 & 3). Through hole diameter in relation to terminal diameter is also important to connection integrity. The recommended printed circuit board hole clearance should be at least .006 inches, but no more than .028 inches. This will facilitate the flow of solder to both ends of a plated through hole and allow the outgassing of contaminants that will interfere with a strong intermetallic bond.



**Surface Mount:** A toroid mount is essential to mounting a wound toroid to a circuit board using surface mount technology. The most widely used surface mount termination styles are either gull wing (Figure 4), or "J" lead (Figure 5). The gull wing style is widely used because it is relatively inexpensive to mold into the plastic body and to bend into position. The gull wings are somewhat flexible, which allows them to absorb the strain of thermal expansion and contraction. It is also easier to visually inspect the gull wing solder connection. The "J" lead also has wide acceptance because it uses up less board real estate than the gull wing and can absorb the strain of thermal expansion. However, the "J" lead to board solder connections are hidden from inspection and the leads are more difficult to form, making them more expensive. New surface mount techniques are being introduced to the industry constantly. One style is the "Lunar Lander" (Figure 6). The "Lunar Lander" incorporates a round lead style that is more rigidly supported by the plastic molding.



This style is very robust and will tolerate handling and shipping with little or no effect on the co-planarity. It is not flexible with thermal expansion and is harder to visually inspect, but it uses little extra board real estate. Self terminating surface mount components have become popular. This technique uses the wound components leads, positioned by the toroid mount, to make the solder connection. For more information on toroid mount technology, visit our Web Site at [www.lodestonepacific.com](http://www.lodestonepacific.com).

## Terminals and Solderability

Name	Approximate Composition	Code	Plating	Min Thickness	Flash/Barrier	Min Thickness
Phos Bronze	94.5% Cu, 5% Sn, .5% P	PBZ	100% Tin (Sn)	5 microns (µm)	Nickel (Ni)	2 microns (µm)
Alloy 42	57% Fe, 42% Ni, .2% Si, .4% Mn	A42	100% Tin (Sn)	5 microns (µm)	Nickel (Ni)	2 microns (µm)
Copper Wire	99% Cu	CW	100% Tin (Sn)	5 microns (µm)	Nickel (Ni)	2 microns (µm)
Brass	70% Cu, 30% Zn	BW	100% Tin (Sn)	5 microns (µm)	Nickel (Ni)	2 microns (µm)
Copper Clad Steel	78% Steel, 22% Cu	CP	100% Tin (Sn)	5 microns (µm)		

These terminals meet MIL-STD-1276 with a plating thickness of 200 to 500 micro inches (5 to 12.7 microns) and are coplanar to .002 inches. All component and toroid mounts are inspected to MIL-STD-202, Method 208 for solderability, then handled and stored to avoid transferred or airborne contamination of the terminal as described in MIL-STD-2000. All the terminals listed in this catalog are RoHS compliant. **Terminals with Lead (Sn90/Pb10, and Sn60/Pb40) are available by special order.**

## Wire Table

Wire Gauge (AWG)	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40
Diameter (inches)															
Nominal (Single build)	.0827	.0659	.0524	.0418	.0334	.0266	.0213	.0170	.0137	.0109	.0088	.0070	.0056	.0048	.0035
Nominal (Heavy Build)	.0838	.0675	.0539	.0431	.0346	.0276	.0223	.0178	.0144	.0116	.0095	.0075	.0060	.0049	.0038
Cross Sectional Area															
Circular mills	6530	4107	2583	1624	1022	642.4	404.0	254.1	159.8	100.5	63.2	39.8	25.0	17.7	9.89
Amperes															
1mA/circular mills	6.54	4.11	2.59	1.62	1.03	0.640	0.400	0.255	0.160	0.100	0.064	0.040	0.025	0.016	0.010
Resistance (ohms/1K ft. 20°C)															
Nominal	1.589	2.524	4.019	6.388	10.13	16.20	25.67	41.02	65.33	103.7	162.0	261.3	414.8	648.2	1079

## Ceramic Substrate Headers



## Ceramic Surface Mount Toroid Mounts and Headers

Ceramic Headers

DR Series

Surface Mount

Horizontal

Vertical

Trays

### SMRF100-05

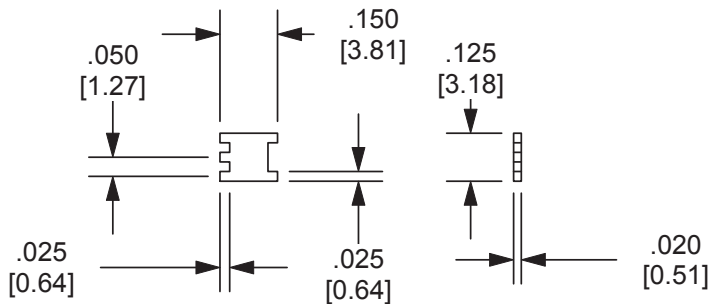
**Material:** Alumina Al<sub>2</sub>O<sub>3</sub> 93% White

**5 Terminals:** Self Terminating

**Packaging Method:** Bulk in Poly Bags  
See RoHS compliant PVC packaging trays on page 57.

**Application:** For high frequency transformer and inductor applications requiring low dielectric loss. Uses the toroids or balun core's winding wire, wrapped on the mount, to make the PCB connection. Suitable for MOCA applications.

Made in the USA



+/- .010 Inches (mm), 2 x Size



### SMRF110-04

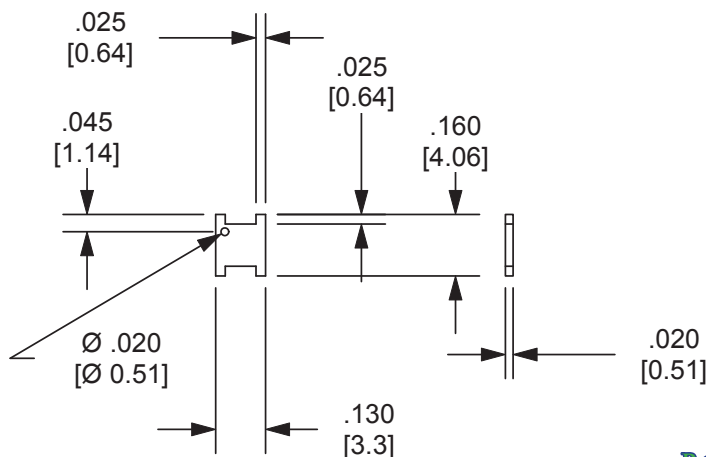
**Material:** Alumina Al<sub>2</sub>O<sub>3</sub> 93% White

**4 Terminals:** Self Terminating

**Packaging Method:** Bulk in Poly Bags  
See RoHS compliant PVC packaging trays on page 57.

**Application:** For high frequency transformer and inductor applications requiring low dielectric loss. Uses the toroids or balun core's winding wire, wrapped on the mount, to make the PCB connection. Suitable for MOCA applications.

Made in the USA



+/- .010 Inches (mm), 2 x Size



Ceramic Headers

DR Series

Surface Mount

Horizontal

Vertical

Trays

## SMRF150-06

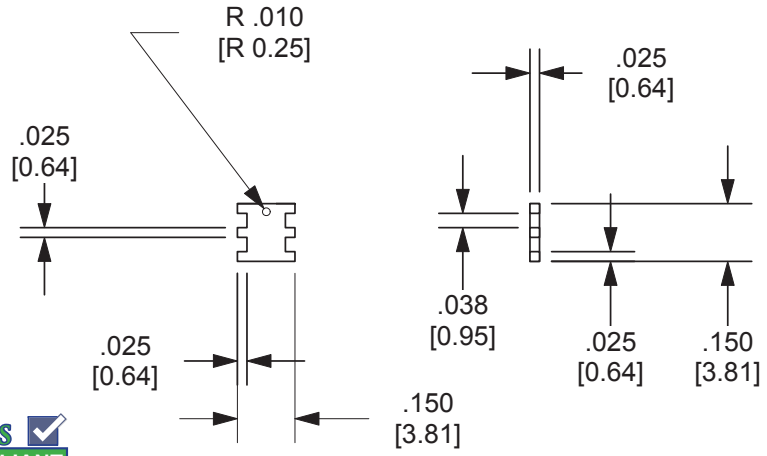
**Material:** Alumina Al<sub>2</sub>O<sub>3</sub> 93% White

**6 Terminals:** Self Terminating

**Packaging Method:** Bulk in Poly Bags  
See RoHS compliant PVC packaging trays on page 57.

**Application:** For high frequency transformer and inductor applications requiring low dielectric loss. Uses the toroids or balun core's winding wire, wrapped on the mount, to make the PCB connection. Suitable for MOCA applications.

Made in the USA



+/- .010 Inches (mm), 2 x Size

## SMRF155-5

**Material:** Alumina Al<sub>2</sub>O<sub>3</sub> 93% White

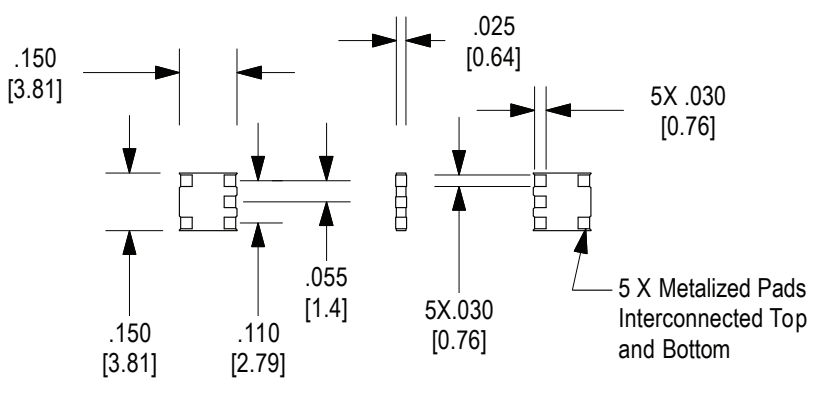
**5 Terminals:** Nickel, Gold Plated

**Solderability:** Per MIL-STD-202 Method 208

**Packaging Method:** Bulk in Poly Bags  
See RoHS compliant PVC packaging trays on page 57.

**Application:** For high frequency transformer and inductor applications requiring low dielectric loss. Suitable for MOCA applications.

Made in the USA



+/- .010 Inches (mm), 2 x Size

## SMRF200-06

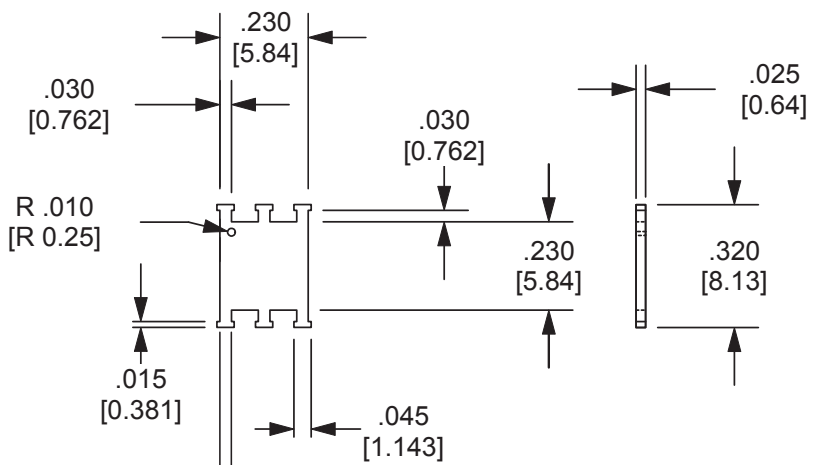
**Material:** Alumina Al<sub>2</sub>O<sub>3</sub> 93% White

**6 Terminals:** Self Terminating

**Packaging Method:** Bulk in Poly Bags  
See RoHS compliant PVC packaging trays on page 57.

**Application:** For high frequency transformer and inductor applications requiring low dielectric loss. Uses the toroids or balun core's winding wire, wrapped on the mount, to make the PCB connection. Suitable for MOCA applications.

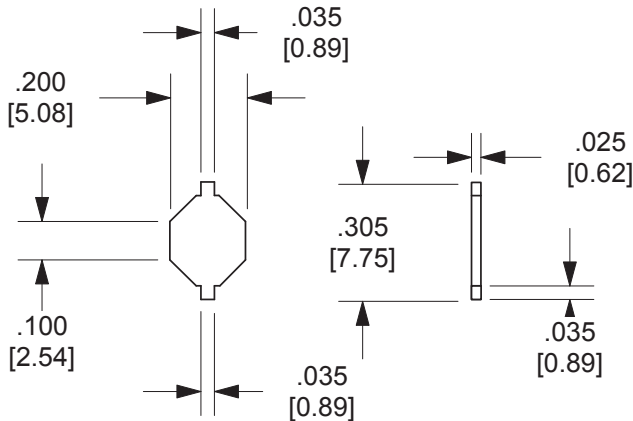
Made in the USA



+/- .010 Inches (mm), 2 x Size



### SMRF205-02



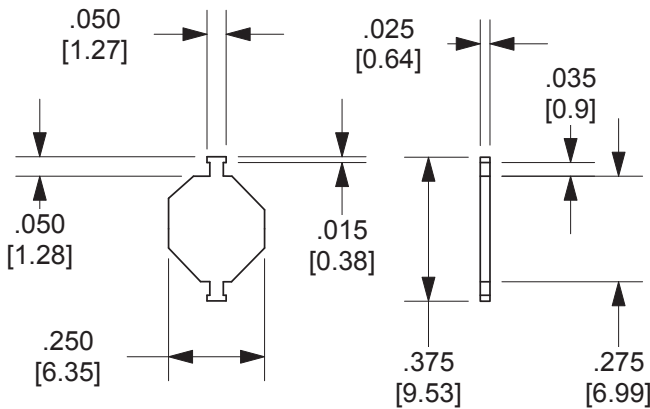
**Material:** Alumina Al<sub>2</sub>O<sub>3</sub> 93% White  
**2 Terminals:** Self Terminating  
**Packaging Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays on page 57.  
**Application:** For high frequency transformer and inductor applications requiring low dielectric loss. Uses the toroids or balun core's winding wire, wrapped on the mount, to make the PCB connection.

Made in the USA



+/- .010 Inches (mm), 2 x Size

### SMRF250-02



**Material:** Alumina Al<sub>2</sub>O<sub>3</sub> 93% White  
**2 Terminals:** Self Terminating  
**Packaging Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays on page 57.  
**Application:** For high frequency transformer and inductor applications requiring low dielectric loss. Uses the toroids or balun core's winding wire, wrapped on the mount, to make the PCB connection.

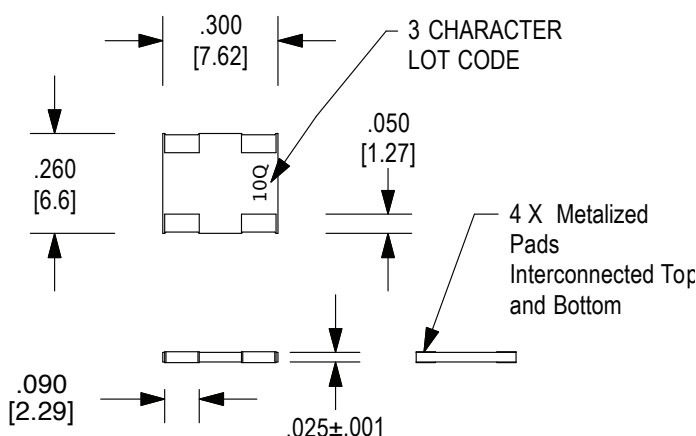
Made in the USA



+/- .010 Inches (mm), 2 x Size

**NEW**

### SMRF258-4



**Material:** Alumina Al<sub>2</sub>O<sub>3</sub> 93% White  
**4 Terminals:** Nickel, Gold Plated  
**Solderability:** Per MIL-STD-202 Method 208  
**Packaging Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays on page 57.  
**Application:** For high frequency transformer and inductor applications requiring low dielectric loss. Suitable for MOCA applications.

Made in the USA



+/- .010 Inches (mm), 2 x Size

Ceramic Headers

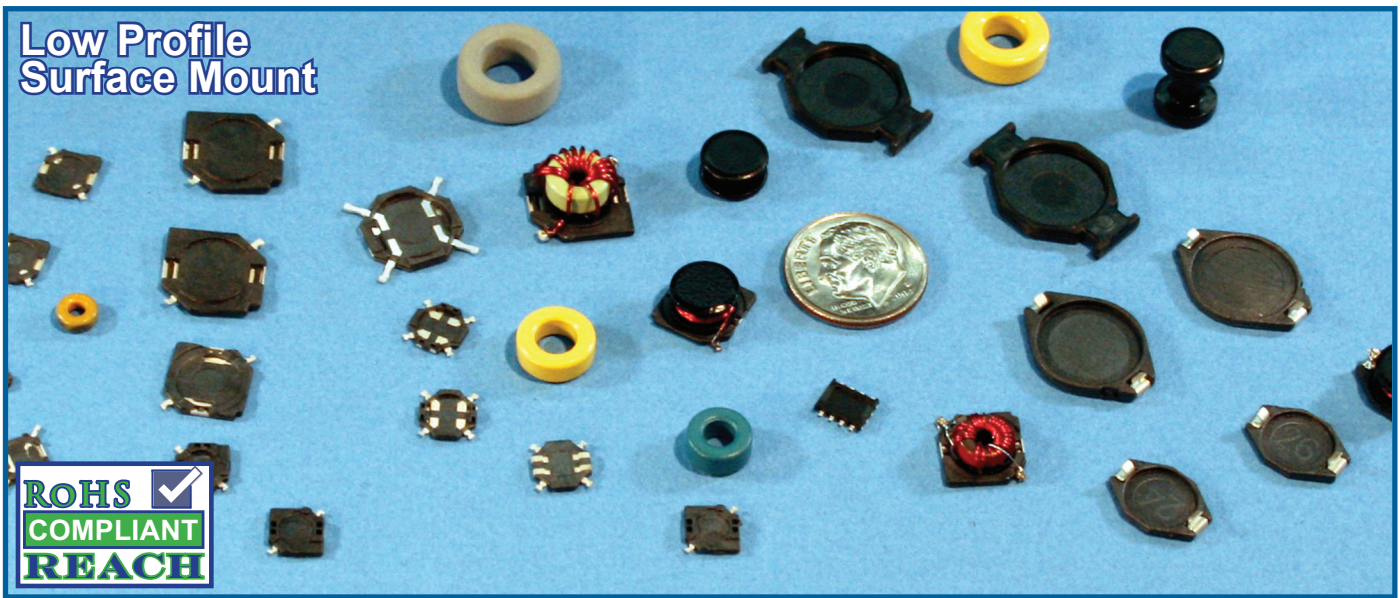
DR Series

Surface Mount

Horizontal

Vertical

Trays



## Low Profile Surface Mount

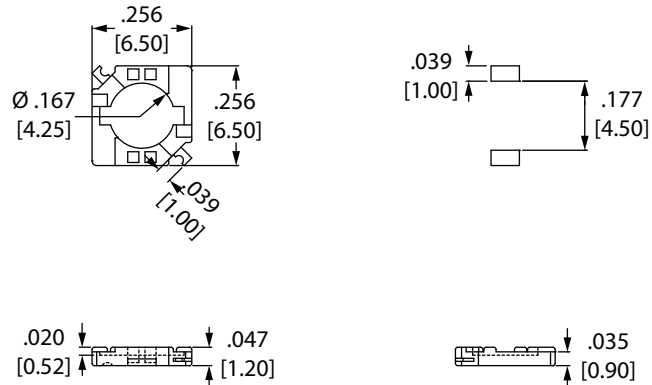


### SMDR176-2

**Material:** LCP (Black)  
**UL Rating:** UL94-VO, Class F  
**2 Terminals:** Phosphorus Bronze  
 100% Tin Plate  
**Solderability:** MIL-STD-202  
 Method 208

**Packaging Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays on page 57.

**Application:** For surface mounting of  
 4 mm bobbin cores or low profile wound  
 toroids up to .180 inches in diameter.



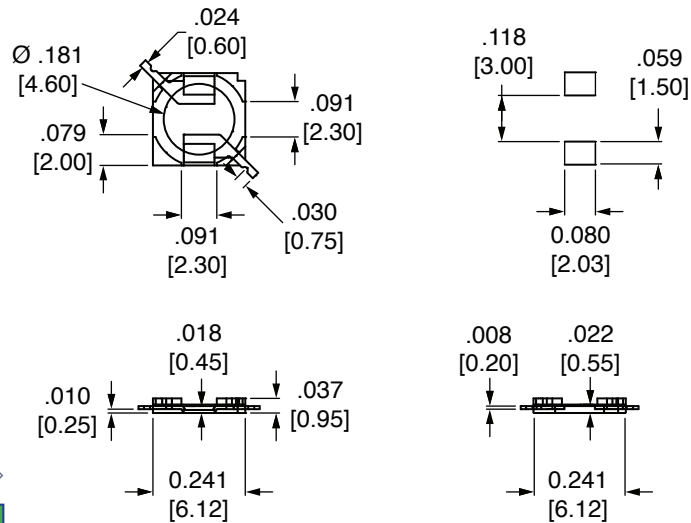
+/- .010 Inches  
(mm), 2 x Size

### SMDR186-2

**Material:** LCP (Black)  
**UL Rating:** UL94-VO, Class F  
**2 Terminals:** Phosphorus Bronze  
 100% Tin Plate  
**Solderability:** MIL-STD-202  
 Method 208

**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays on page 57.

**Application:** For surface mounting of  
 4 mm bobbin cores or low profile wound  
 toroids up to .180 inches in diameter.



+/- .010 Inches  
(mm), 2 x Size

## Industry Standard Bobbin Core and Tape & Reel Sizes

Part No.	Core	T & R No	Cavity Width	Cavity Length	Cavity Depth	Tape Width
SMDR176-2	4 mm	TP67X67X50	6.7	6.7	5.0	16 mm
SMDR186-2	4 mm	TP67X67X50	6.7	6.7	5.0	16 mm
SMDR216-4	5 mm	TP74X74X30	7.4	7.4	3.0	16 mm
SMDR226-4	5 mm	TP74X74X30	7.4	7.4	3.0	16 mm
SMDR346-2	9 mm	TP97X134X30	9.7	13.4	3.0	24 mm
SMDR386-2	9 mm	TP126X126X59	12.6	12.6	5.9	24 mm
SMDR396-2	9 mm	TP126X126X59	12.6	12.6	5.9	24 mm
SMDR416-2	9 mm	TP104X104X41	10.4	10.4	4.1	24 mm
SMDR516-2	13 mm	TP126X126X59	12.6	12.6	5.9	24 mm
SMDR526-02	13 mm	TP160X160X105	16.0	16.0	10.5	32 mm

All Dimensions Meet EIA-481-B • for 330 mm (13 Inch) diameter reels to made from High Impact Styrene.

Technical drawings for SMDR216-4 showing top, side, and terminal views with dimensions in inches and millimeters.

Top View Dimensions: .047 [1.20], .031 [0.80], .106 [2.70], Ø .213 [5.40], .106 [2.70]

Side View Dimensions: .031 [0.80], .057 [1.45], .161 [4.10], .043 [1.10]

Terminal View Dimensions: .020 [0.50], .276 [7.00], .039 [1.00], .276 [7.00]

### SMDR216-4

**Material:** LCP (Black)

**UL Rating:** UL94-VO, Class F

**4 Terminals:** Phosphorus Bronze  
100% Tin Plate

**Solderability:** MIL-STD-202  
Method 208

**Package Method:** Bulk in Poly Bags  
See RoHS compliant PVC packaging trays on page 57.

**Application:** For surface mounting of 5 mm bobbin cores or low profile wound toroids up to .220 inches in diameter.

Technical drawings for SMDR226-2 showing top, side, and terminal views with dimensions in inches and millimeters.

Top View Dimensions: .367 [9.33], .276 [7.00], Ø .276 [7.00], .276 [7.00], Ø .217 [5.50]

Side View Dimensions: .157 [4.00], .059 [1.50]

Terminal View Dimensions: .020 [0.50], .036 [0.92], .020 [0.50], .026 [0.65]

### SMDR226-2

**Material:** LCP (Black)

**UL Rating:** UL94-VO, Class F

**2 Terminals:** Phosphorus Bronze  
100% Tin Plate

**Solderability:** MIL-STD-202  
Method 208

**Package Method:** Bulk in Poly Bags  
See RoHS compliant PVC packaging trays on page 57.

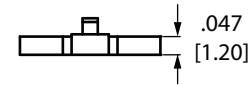
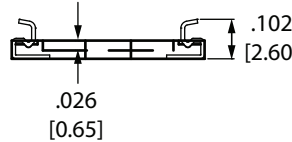
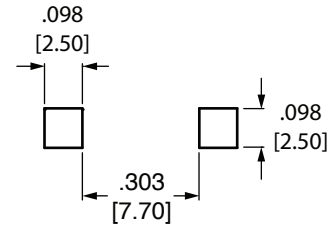
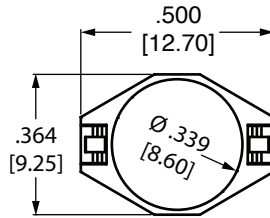
**Application:** For surface mounting of 5 mm bobbin cores or low profile wound toroids up to .230 inches in diameter.

## SMDR346-2

**Material:** LCP (Black)  
**UL Rating:** UL94-VO, Class F  
**2 Terminals:** Phosphorus Bronze  
 100% Tin Plate  
**Solderability:** MIL-STD-202  
 Method 208

**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays on page 57.

**Application:** For surface mounting of 5 to 8.5 mm bobbin cores or low profile wound toroids up to .350 inches in diameter.



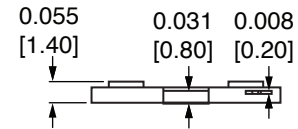
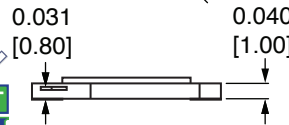
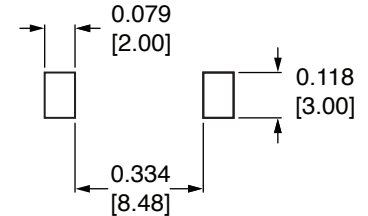
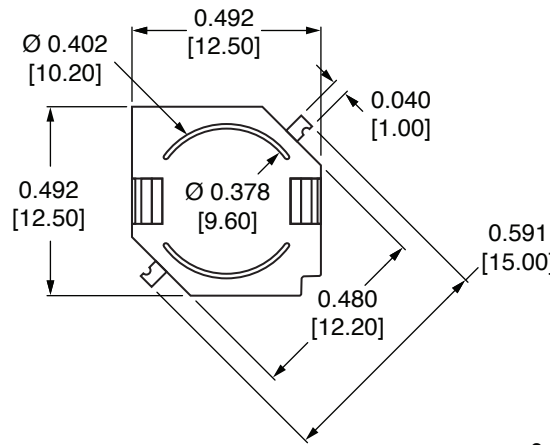
+/- .010 Inches (mm), 2 x Size

## SMDR386-2

**Material:** LCP (Black)  
**UL Rating:** UL94-VO, Class F  
**2 Terminals:** Phosphorus Bronze  
 100% Tin Plate  
**Solderability:** MIL-STD-202  
 Method 208

**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays on page 57.

**Application:** For surface mounting of 9 mm bobbin cores or low profile wound toroids up to .390 inches in diameter.



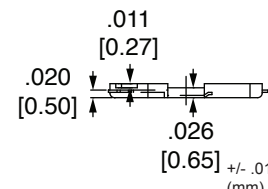
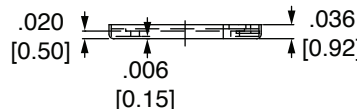
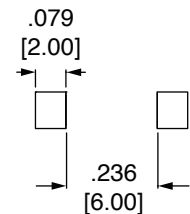
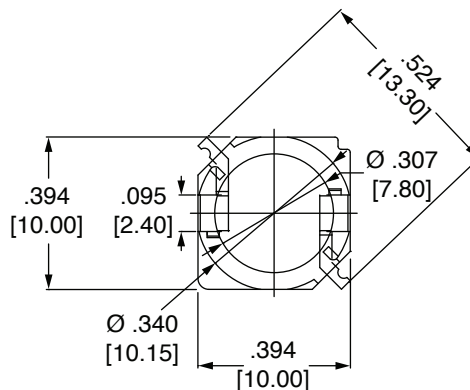
+/- .010 Inches (mm), 2 x Size

## SMDR416-2

**Material:** LCP (Black)  
**UL Rating:** UL94-VO, Class F  
**2 Terminals:** Phosphorus Bronze  
 100% Tin Plate  
**Solderability:** MIL-STD-202  
 Method 208

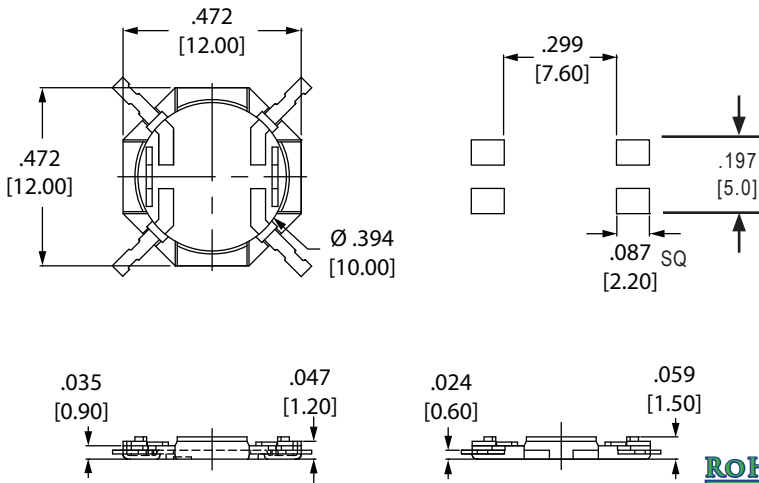
**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays on page 57.

**Application:** For surface mounting of 9 mm bobbin cores or low profile wound toroids up to .420 inches in diameter.



+/- .010 Inches (mm), 2 x Size

### SMDR396-4



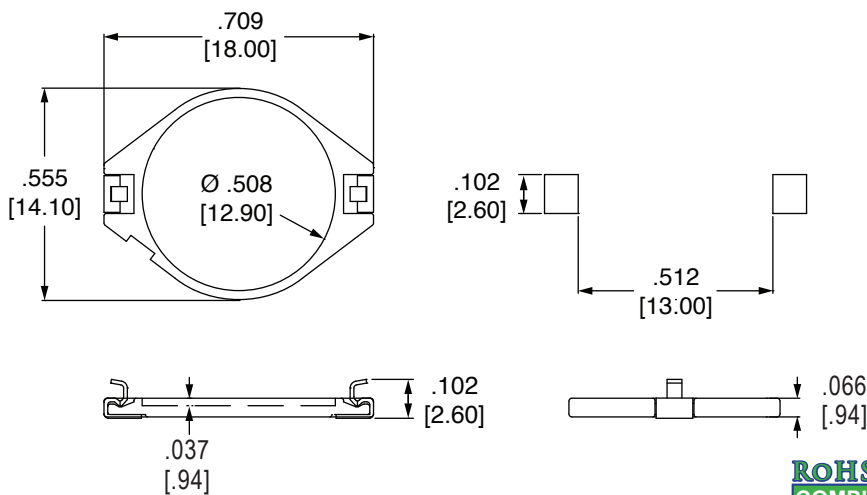
+/- .010 Inches (mm), 2 x Size



**Material:** LCP (Black)  
**UL Rating:** UL94-VO, Class F  
**4 Terminals:** Phosphorus Bronze  
 100% Tin Plate  
**Solderability:** MIL-STD-202  
 Method 208  
**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays on page 57.

**Application:** For surface mounting of 9 mm bobbin cores or low profile wound toroids up to  $.400$  inches in diameter.

### SMDR516-2



+/- .010 Inches (mm), 2 x Size

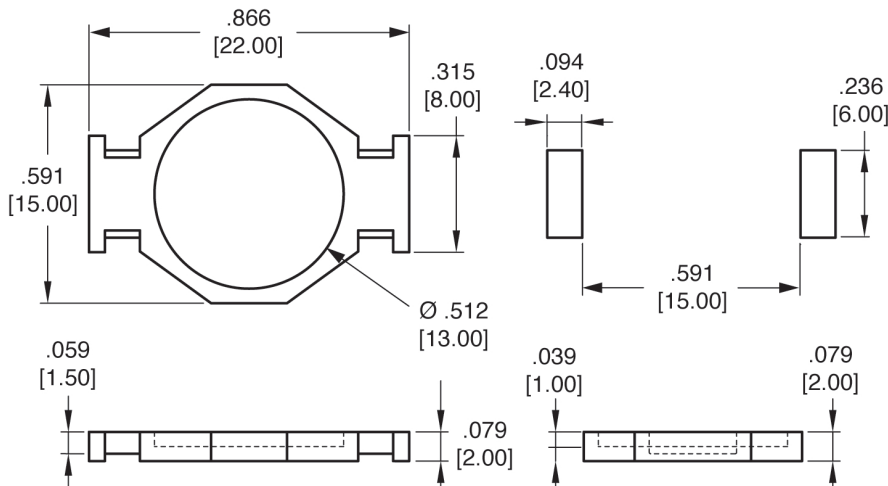


**Material:** LCP (Black)  
**UL Rating:** UL94-VO, Class F  
**2 Terminals:** Phosphorus Bronze  
 100% Tin Plate  
**Solderability:** MIL-STD-202  
 Method 208

**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging tray options on page 57.

**Application:** For surface mounting of 9 to 13 mm bobbin cores or low profile wound toroids up to  $.520$  inches in diameter.

### SMDR526-02



+/- .010 Inches (mm), 2 x Size



**Material:** PH (Black)  
**UL Rating:** UL94-VO, Class F  
**2 Terminals:** Self Terminating  
**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging tray options on page 57.

**Application:** For surface mounting of 9 to 13 mm bobbin cores or low profile wound toroids up to  $.530$  inches in diameter utilizing the winding wire to make the connection to the PCB.

Ceramic Headers

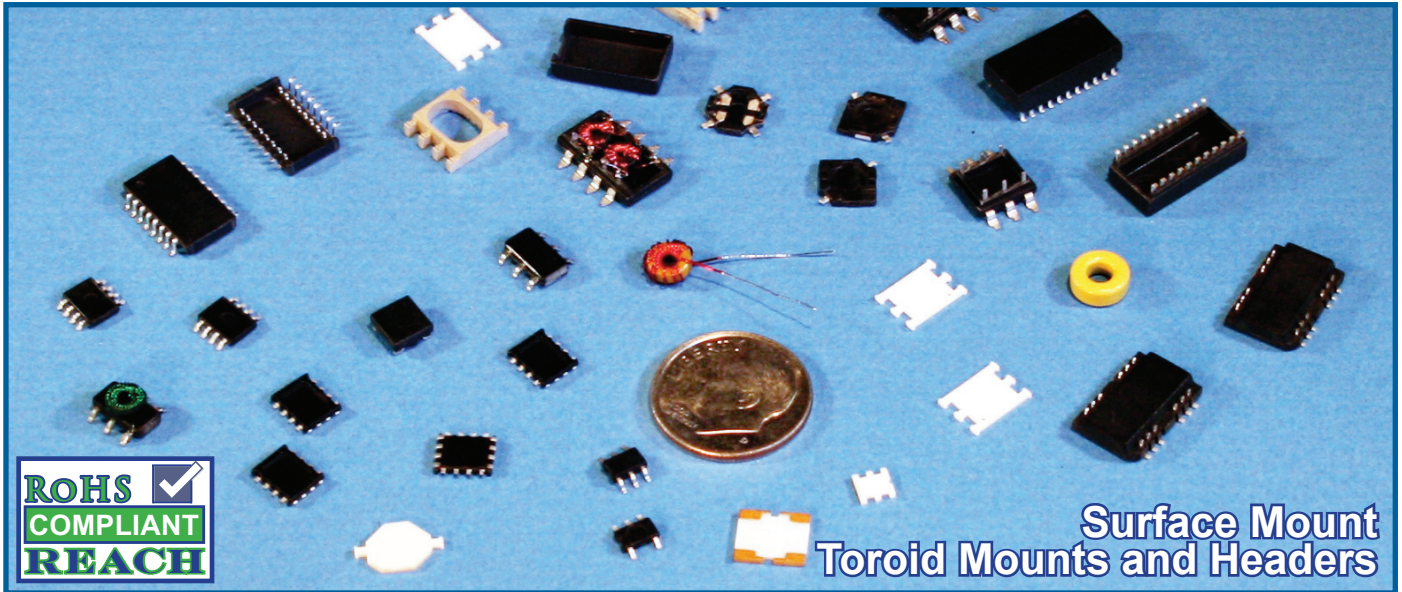
DR Series

Surface Mount

Horizontal

Vertical

Trays

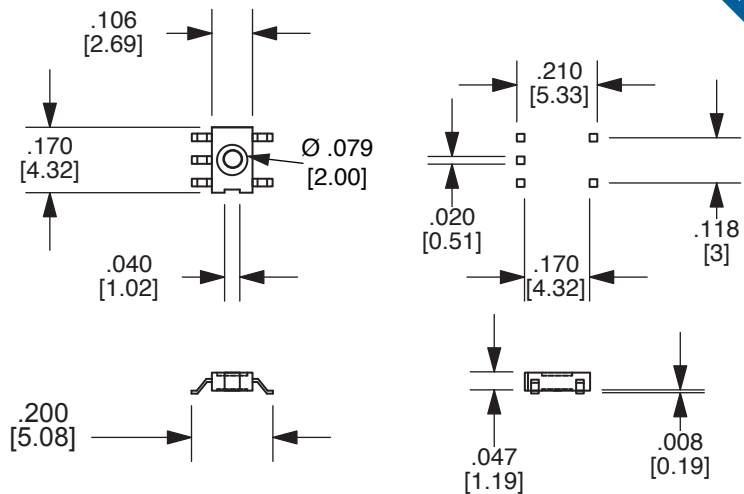


## Surface Mount Toroid Mounts and Headers

### STM106-5

**Material:** PH4 (Black)  
**UL Rating:** UL94-VO, Class F  
**5 Terminals:** Phosphorus Bronze  
 .020 (.5mm) x .010 (.25mm). 100% Tin Plate.  
**Solderability:** MIL-STD-202  
 Method 208  
**Package Method:** 1000/Tray  
 Fits PVC packaging tray TY37X47-A.  
 More RoHS compliant trays on page 57.  
**Application:** For gull wing surface mount of wound toroids and balun cores to .106 inches in dia or .170 inches long.

Made in our China Factory



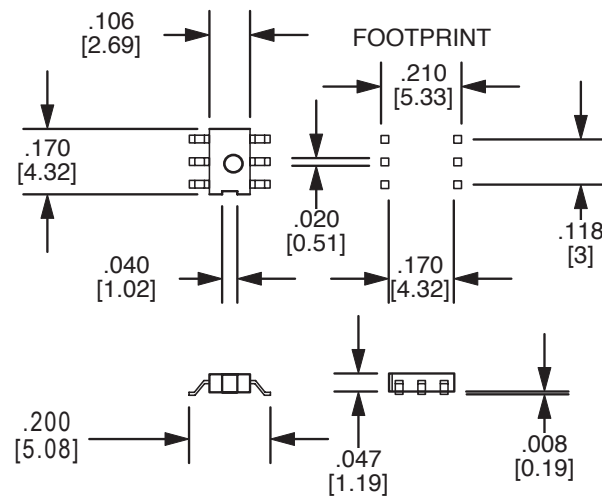
NEW

+/- .010 Inches (mm), 2 x Size

### STM107-6

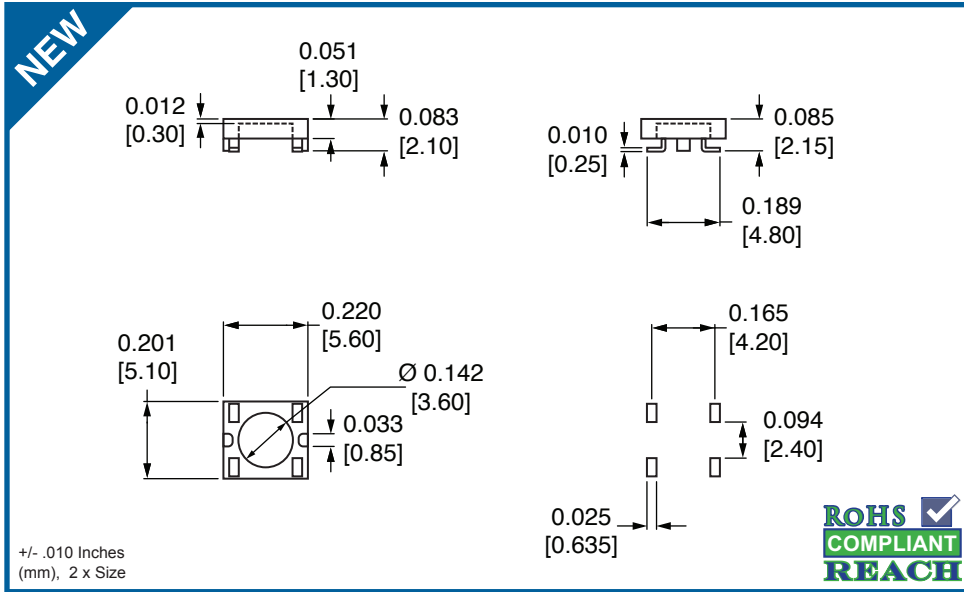
**Material:** DAP4 (Black)  
**UL Rating:** UL94-VO, Class F  
**6 Terminals:** Phosphorus Bronze  
 .020 (.5mm) x .010 (.25mm). 100% Tin Plate.  
**Solderability:** MIL-STD-202  
 Method 208  
**Package Method:** 1000/Tray.  
 Fits PVC packaging tray TY37X47-A.  
 More RoHS compliant trays on page 57.  
**Application:** For gull wing surface mount of wound toroids and balun cores to .106 inches in dia. or .170 inches long.

Made in our China Factory



NEW

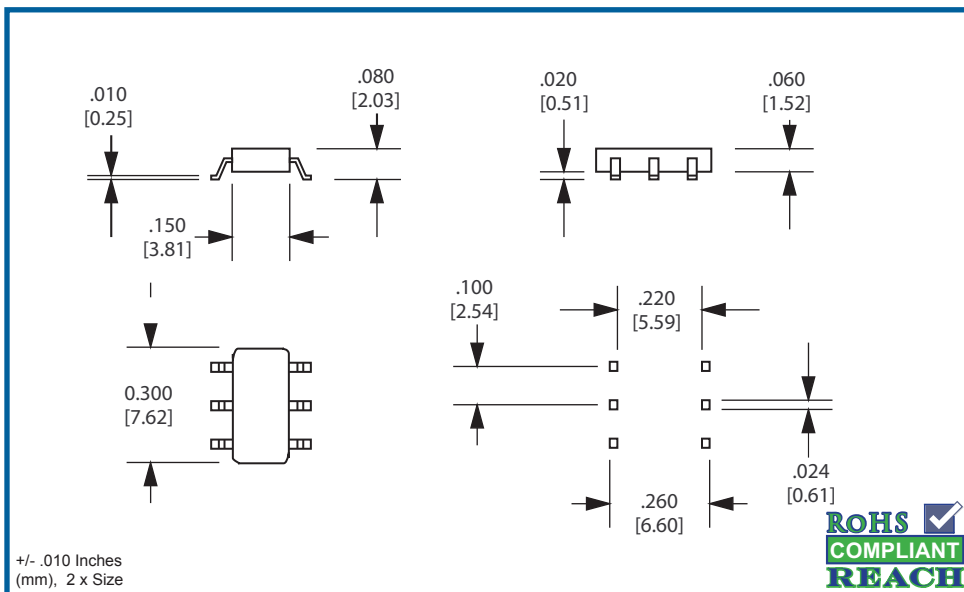
+/- .010 Inches (mm), 2 x Size



**STM148-4**

**Material:** PH4 (Black)  
**UL Rating:** UL94-VO, Class F  
**4 Terminals:** Phosphorus Bronze .020 (.5mm) x .010 (.25mm). 100% Tin Plate.  
**Solderability:** MIL-STD-202 Method 208  
**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays, on page 57.  
**Application:** For gull wing surface mount of wound toroids up to .148 inches in diameter.

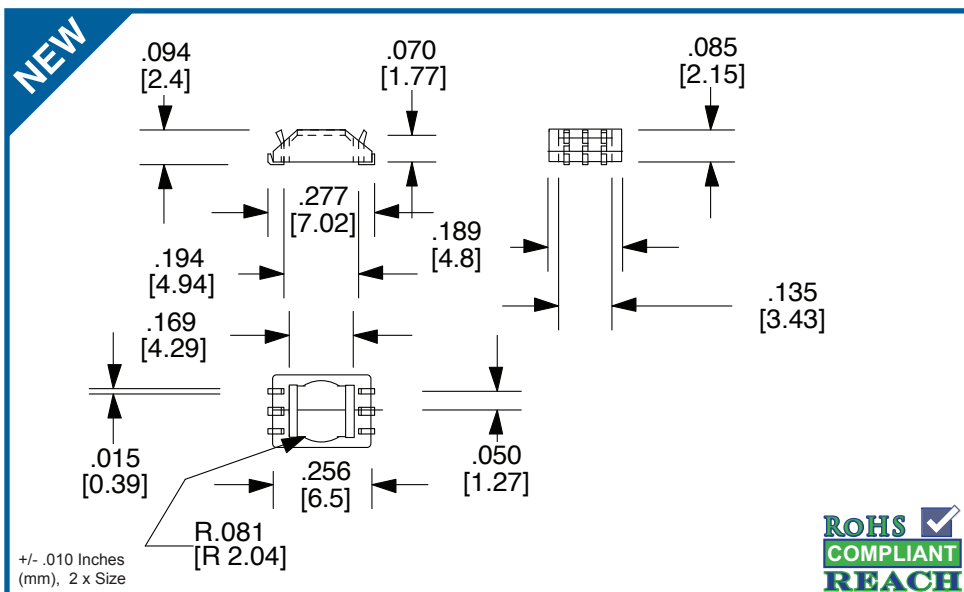
Made in our China Factory



**STM152-6**

**Material:** DAP4 (Black)  
**UL Rating:** UL94-VO, Class F  
**6 Terminals:** Alloy 42 100% Tin Plate  
**Solderability:** MIL-STD-202 Method 208  
**Package Tray (HIPS):** TY37x47-B (280/tray)  
 See RoHS compliant PVC packaging trays options on page 57.  
**Application:** For gull wing surface mount of wound toroids and balun cores up to .150 inches in diameter.

Made in our China Factory



**STM158-6**

**Material:** PH4 (Black)  
**UL Rating:** UL94-VO, Class F  
**6 Terminals:** Phosphorus Bronze .020 (.5mm) x .010 (.25mm). 100% Tin Plate.  
**Solderability:** MIL-STD-202 Method 208  
**Package Method:** Bulk in Poly Bags.  
 See RoHS compliant PVC packaging trays options on page 57.  
**Application:** For gull wing surface mount of wound toroids and balun cores up to .15 inches in diameter.

Made in our China Factory

Ceramic Headers

DR Series

Surface Mount

Horizontal

Vertical

Trays

Ceramic Headers

DR Series

Surface Mount

Horizontal

Vertical

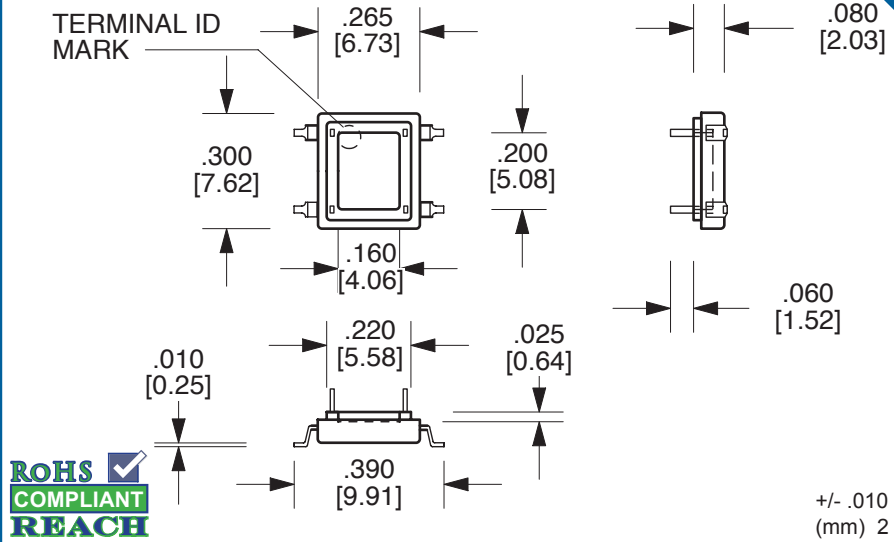
Trays

## SMD166-4

**Material:** DAP4  
**UL Rating:** UL94-VO, Class F  
**4 Terminals:** Phosphorus Bronze  
 .020 (.5mm) x .010 (.25mm). 100% Tin Plate.  
**Solderability:** MIL-STD-202  
 Method 208

**Package Tray (HIPS):** Bulk in Poly Bags.  
 Fits tray TY37x47-B (280/tray)  
 See RoHS compliant PVC packaging trays options on page 57.

**Application:** Gull wing surface mount version of the industry standard "dual-in-line package (DIP) Encapsulation cups sold separately. (Page 16).  
 Made in our China Factory



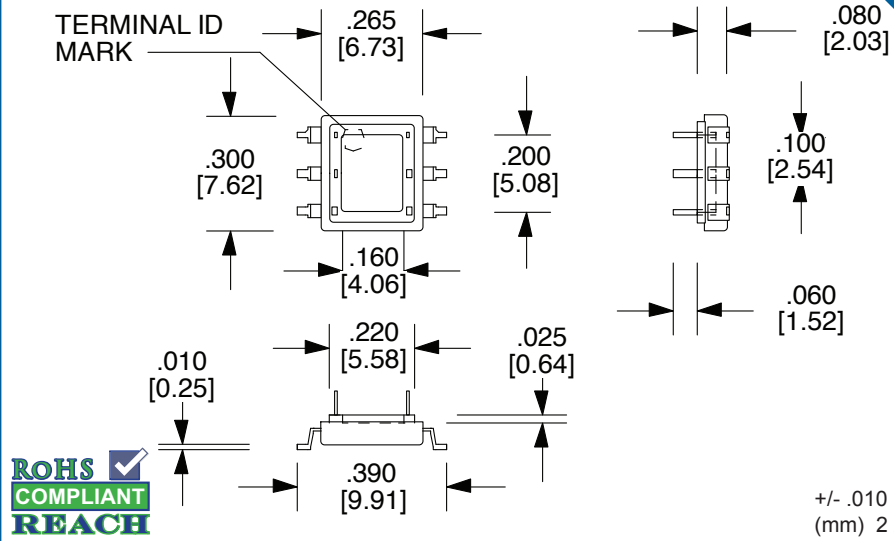
NEW

## SMD166-6

**Material:** DAP4  
**UL Rating:** UL94-VO, Class F  
**6 Terminals:** Phosphorus Bronze  
 .020 (.5mm) x .010 (.25mm). 100% Tin Plate.  
**Solderability:** MIL-STD-202  
 Method 208

**Package Tray (HIPS):** Bulk in Poly Bags.  
 Fits Tray TY37x47-B (280/tray)  
 See RoHS compliant PVC packaging trays options on page 57.

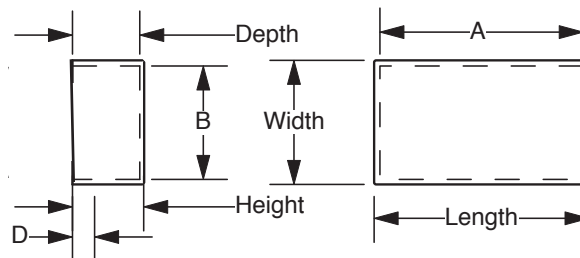
**Application:** Gull wing surface mount version of the industry standard "dual-in-line package (DIP) Encapsulation cups sold separately. (Page 16). SMD165-6 with Alloy 42 lead frame still available.



NEW

## POTTING CUPS & COVERS

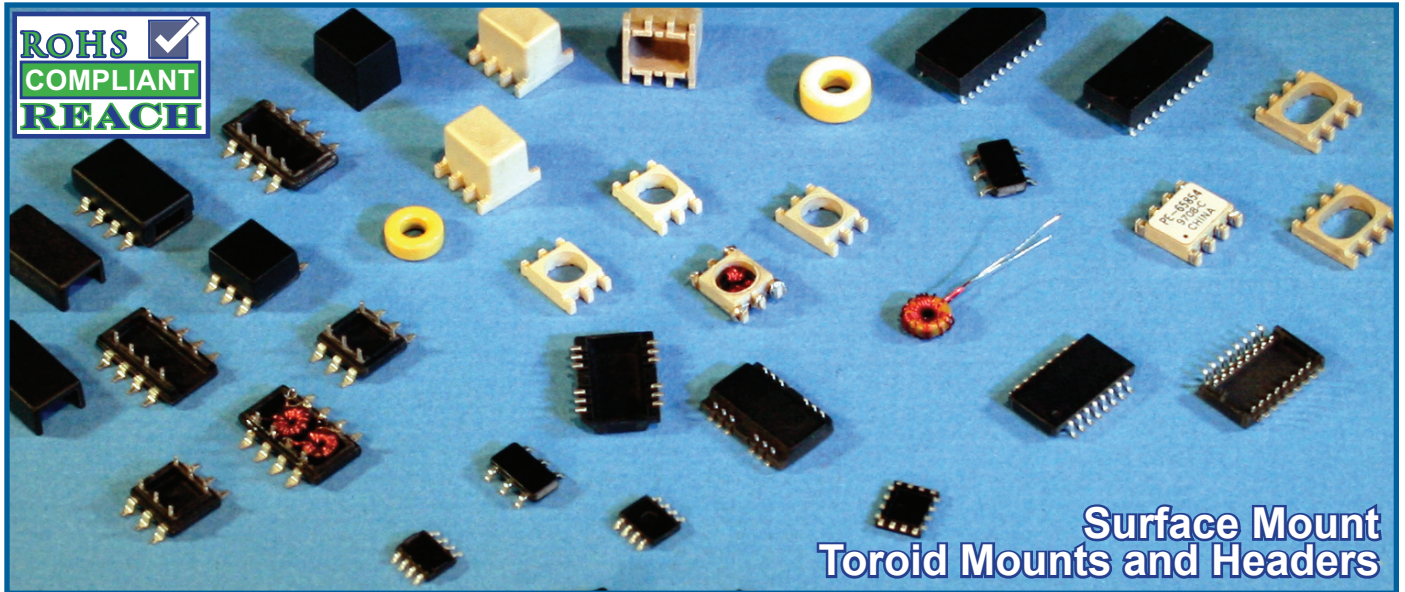
**Material:** DAP (Black)  
**UL Rating:** UL94-VO, Class F  
**Package Method:** Bulk in Poly Bags  
**Application:** For potting and sealing toroid and components on surface mount devices. Cup part number matches mount part number.



ROHS COMPLIANT REACH

Cup Part No.	Mount No.	Page No.	Length	Width	Height	Depth	Mat'l
PC166-6/170	SMD166-4	16	.300 [7.6]	.265 [6.7]	.170 [4.3]	.150 [3.8]	DAP4
PC166-6/170	SMD166-6	16	.300 [7.6]	.265 [6.7]	.170 [4.3]	.150 [3.8]	DAP4
PC280-8	STM280-8	22	.400 [10.2]	.400 [10.2]	.210 [5.3]	.190 [4.8]	DAP





## Surface Mount Toroid Mounts and Headers

Ceramic Headers

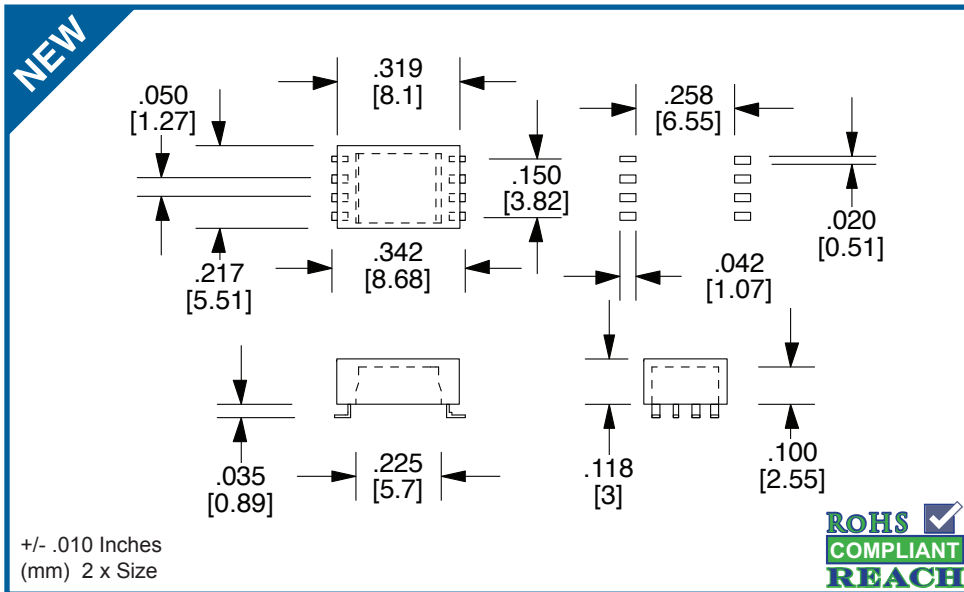
DR Series

Surface Mount

Horizontal

Vertical

Trays



**SMD170-8**

**Material:** DAP4

**UL Rating:** UL94-VO, Class F

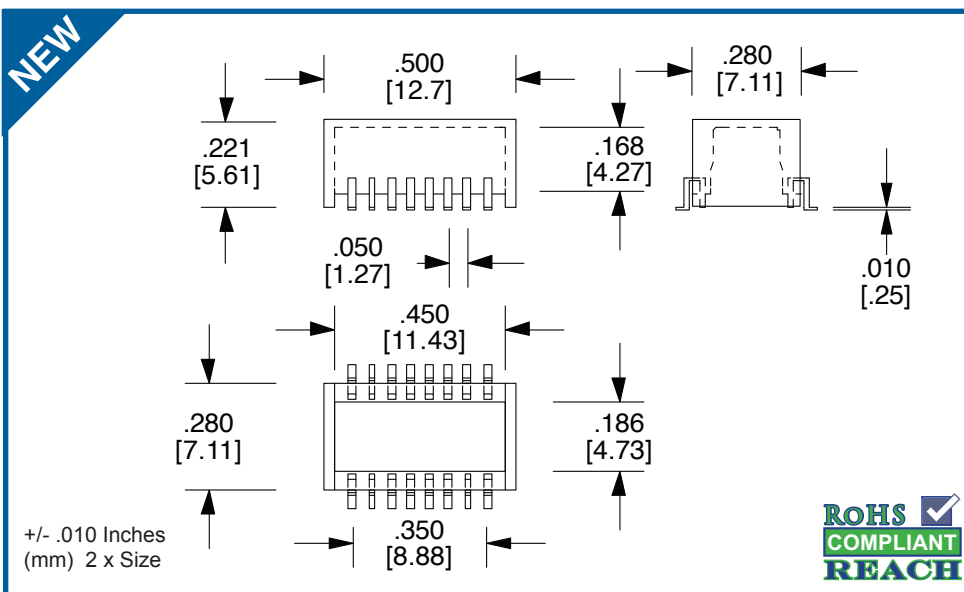
**8 Terminals:** Phosphorus Bronze  
.020 (.5mm) x .010 (.25mm). 100% Tin Plate.

**Solderability:** MIL-STD-202 Method 208

**Package Method:** Bulk in Poly Bags  
See RoHS compliant PVC packaging trays options on page 57.

**Application:** Gull wing surface mount of wound toroids and components and balun cores up to .150 in diameter.

Made in our China Factory



**SMD177-16**

**Material:** DAP4 (Black)

**UL Rating:** UL94-VO, Class F

**16 Terminals:** Phosphorus Bronze  
.020 (.5mm) x .010 (.25mm). 100% Tin Plate.

**Solderability:** MIL-STD-202 Method 208

**Packaging Tubes:** 21" long, 40/tube  
See RoHS compliant PVC packaging trays options on page 57.

**Application:** For gull wing surface mounting of wound toroids and components up to .17 inches in diameter or .44 inches long.

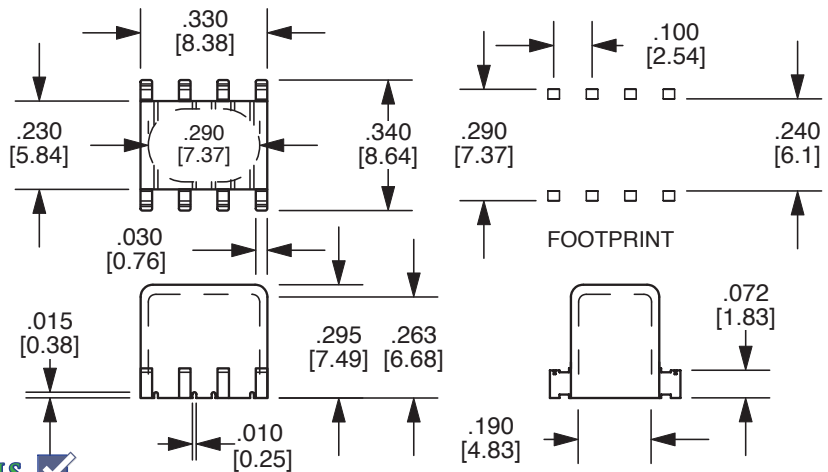
Made in our China Factory

## STM180-08/295

**Material:** LCP (Natural)  
**UL Rating:** UL94-VO, Class F  
**8 Terminals:** Self Terminating  
**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays options on page 57.

**Application:** For surface mounting of toroids with wound diameters up to .190 inches. The toroid leads are tinned, and wrapped around the tabs on the toroid mount. The toroid leads then make a direct connection to the PCB during infrared solder reflow.

Made in our China Factory



+/- .010 Inches (mm), 2 x Size

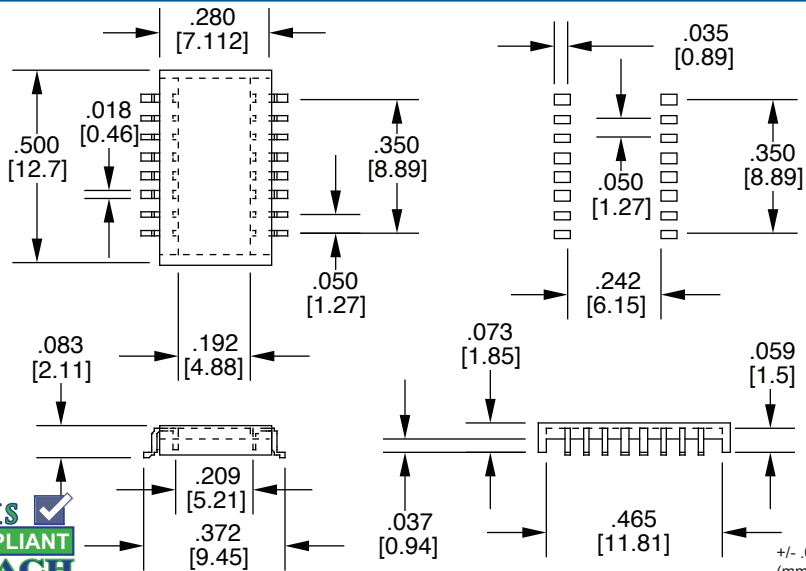
## SMD193-16

**Material:** DAP4 (Black)  
**UL Rating:** UL94-VO, Class F  
**16 Terminals:** Phosphorus Bronze  
 .020 (.5mm) x .010 (.25mm), 100% Tin Plate.  
**Solderability:** MIL-STD-202 Method 208

**Packaging Tubes:** 21" long, 40/tube  
 See RoHS compliant PVC packaging trays options on page 57.

**Application:** Gull wing surface mount. Suitable for wound toroids up to .192 inches in diameter. The toroid is mounted under the mount in a cup like recess.

Made in our China Factory



+/- .010 Inches (mm), 2 x Size

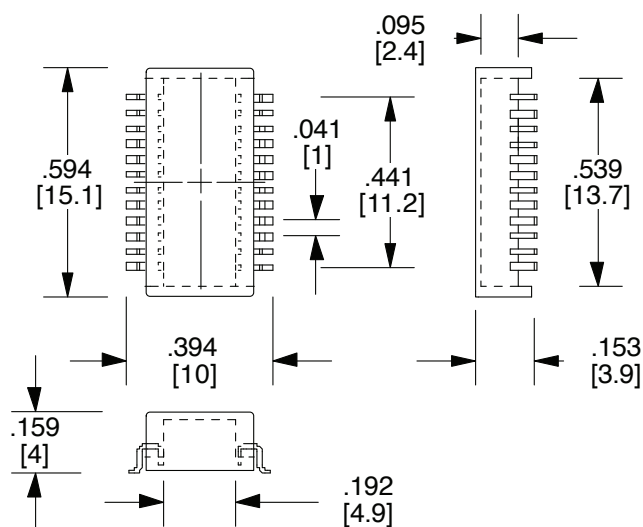
## SMD193-24

**Material:** DAP4 (Black)  
**UL Rating:** UL94-VO, Class F  
**24 Terminals:** Phosphorus Bronze  
 .020 (.5mm) x .010 (.25mm), 100% Tin Plate.  
**Solderability:** MIL-STD-202 Method 208

**Packaging Tubes:** 21" long, 34/tube  
 See RoHS compliant PVC packaging trays options on page 57.

**Application:** Gull wing surface mount suitable for wound toroids up to .192 inches in diameter. The toroid is mounted under the mount in a cup like recess.

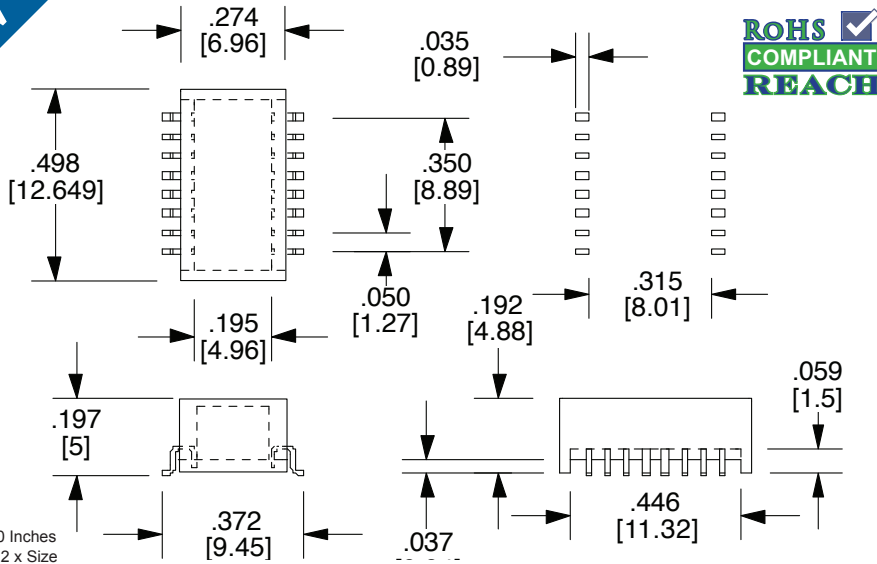
Made in our China Factory



+/- .010 Inches (mm), 2 x Size

NEW

**NEW**



**ROHS COMPLIANT REACH**

### SMD195-16

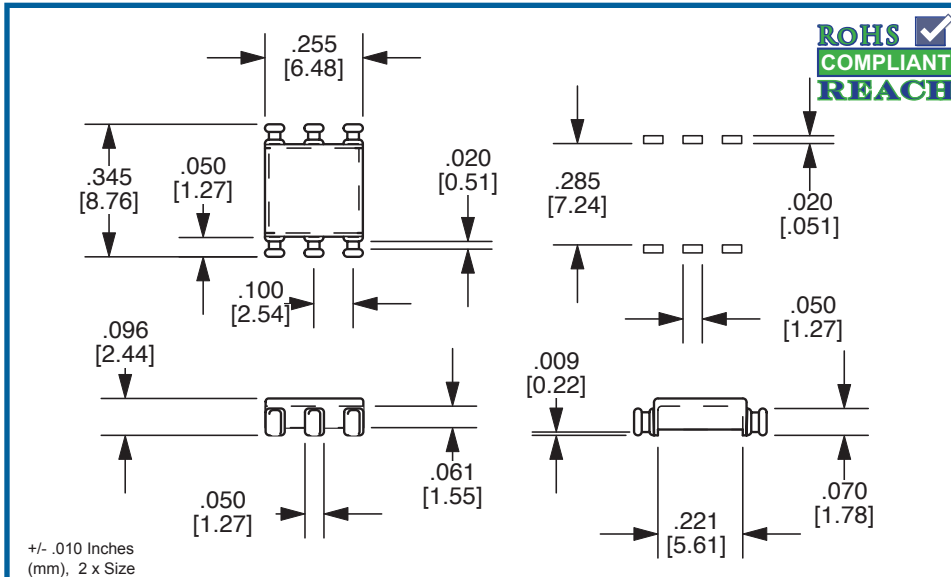
**Material:** DAP4 (Black)  
**UL Rating:** UL94-VO, Class F  
**16 Terminals:** Phosphorus Bronze  
 .020 (.5mm) x .010 (.25mm). 100% Tin Plate.  
**Solderability:** MIL-STD-202  
 Method 208

**Packaging Tubes:** 21" long, 40/tube  
 See RoHS compliant PVC packaging trays options on page 57.

**Application:** Gull wing surface mount, suitable for wound toroids up to .192 inches in diameter. The toroid is mounted under the mount in a cup like recess.

Made in our China Factory

+/- .010 Inches (mm), 2 x Size



**ROHS COMPLIANT REACH**

### STM198-06

**Material:** LCP (Natural)  
**UL Rating:** UL94-VO, Class F  
**6 Terminals:** Self Terminating

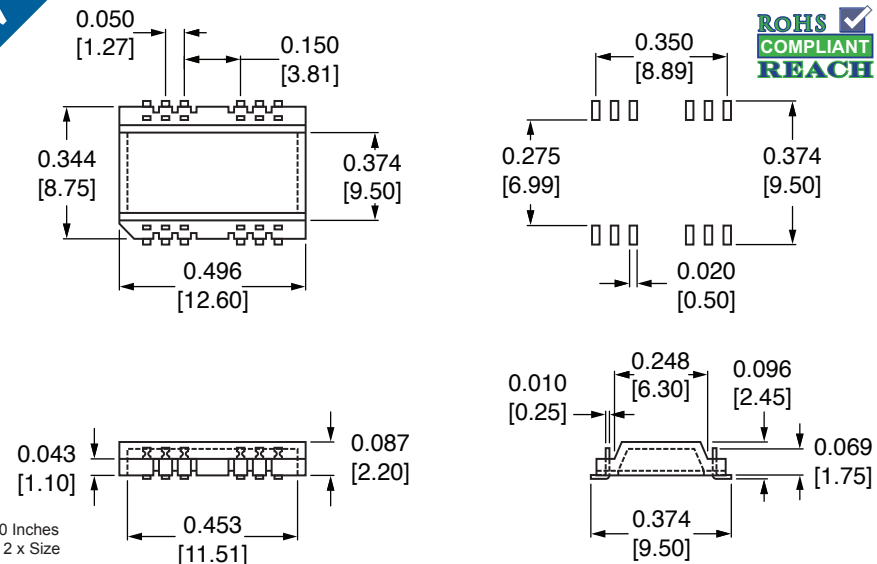
**Packaging Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays options on page 57.

**Application:** For surface mounting of toroids with wound diameters up to .221 inches and a max height of .056 inches. The toroid leads are tinned, and wrapped around the tabs on the toroid mount. The toroid leads then make direct contact to the PCB during infrared solder reflow.

Made in our China Factory

+/- .010 Inches (mm), 2 x Size

**NEW**



**ROHS COMPLIANT REACH**

### SMD201-12

**Material:** DAP4 (Black)  
**UL Rating:** UL94-VO, Class F  
**12 Terminals:** Phosphorus Bronze  
 .020 (.5mm) x .010 (.25mm). 100% Tin Plate.  
**Solderability:** MIL-STD-202  
 Method 208

**Packaging Tubes:** 21" long, 40/tube  
 See RoHS compliant PVC packaging trays options on page 57.

**Application:** For gull wing surface mount of wound toroids and balun cores up to .20 inches in diameter or .430 inches long.

Made in our China Factory

+/- .010 Inches (mm), 2 x Size

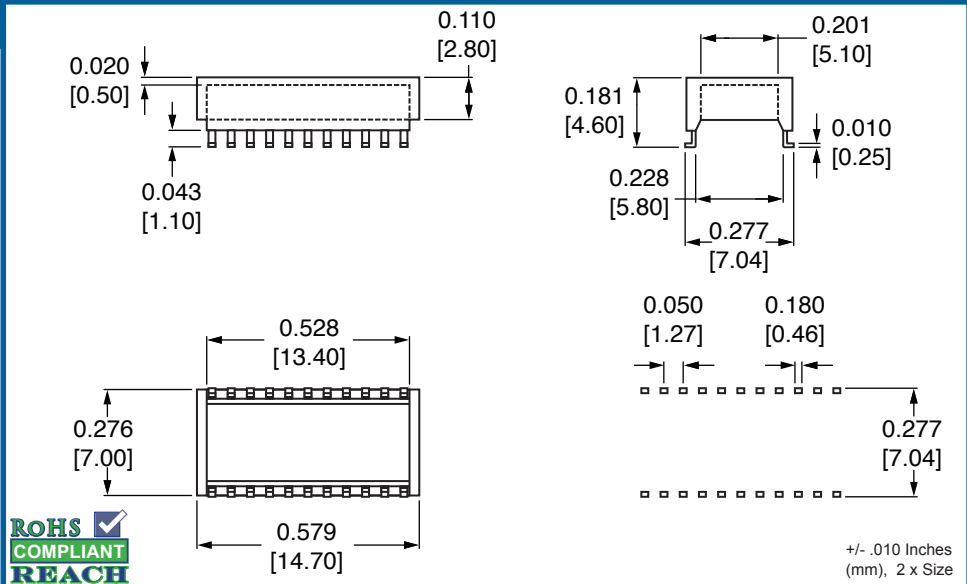
## SMD202-22

**Material:** DAP4 (Black)  
**UL Rating:** UL94-VO, Class F  
**22 Terminals:** Phosphorus Bronze  
 .020 (.5mm) x .010 (.25mm). 100% Tin Plate.  
**Solderability:** MIL-STD-202  
 Method 208

**Packaging Tubes:** 21" long, 34/tube  
 See RoHS compliant PVC packaging trays options on page 57.

**Application:** For gull wing surface mount of wound toroids and balun cores up to .20 inches in diameter or .52 inches long.

Made in our China Factory



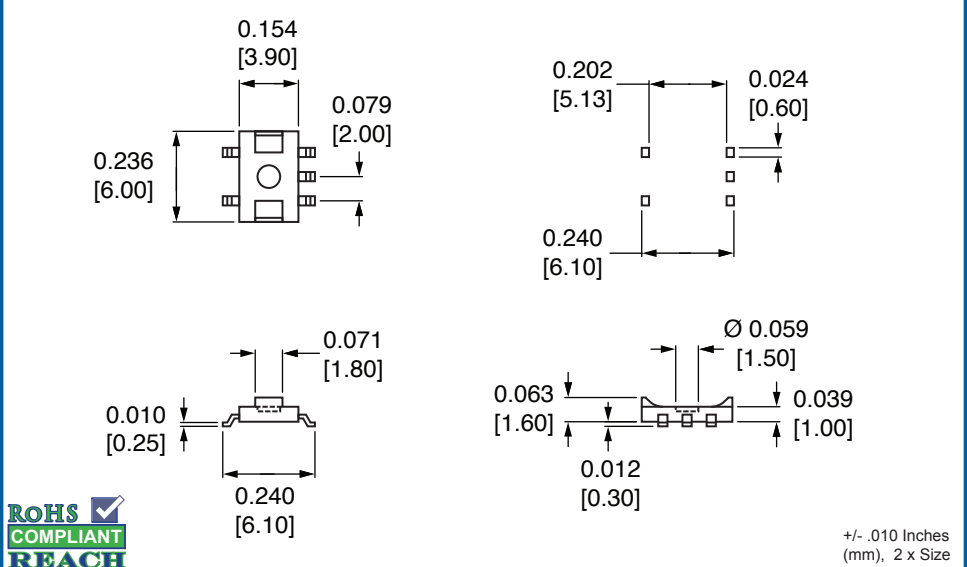
## STM240-5

**Material:** PH4 (Black)  
**UL Rating:** UL94-VO, Class F  
**5 Terminals:** Phosphorus Bronze  
 .020 (.5mm) x .010 (.25mm). 100% Tin Plate.  
**Solderability:** MIL-STD-202  
 Method 208

**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays on page 57.

**Application:** For gull wing surface mounting of components and vertical or horizontal wound toroids up to .240 inches in diameter.

Made in our China Factory



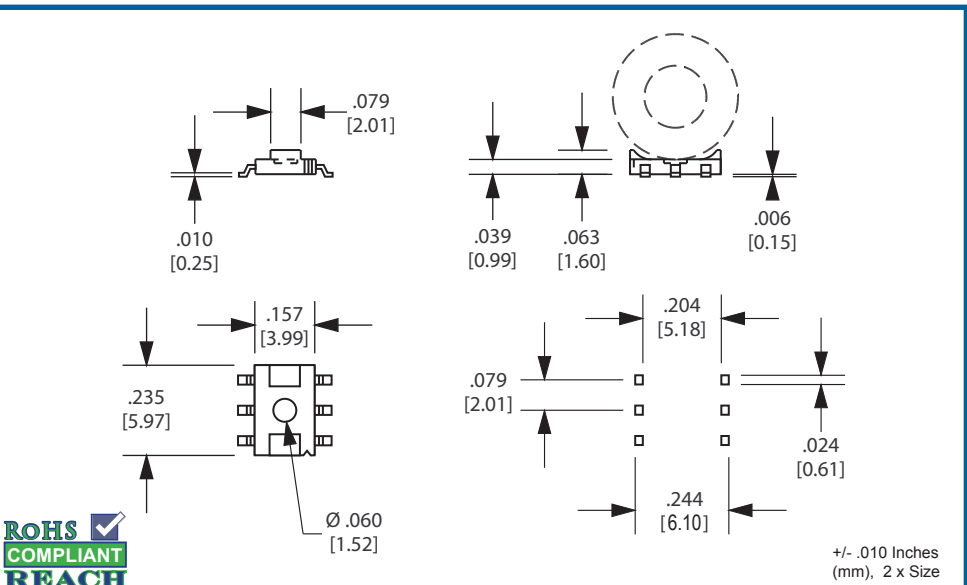
## STM241-6

**Material:** PH4 (Black)  
**UL Rating:** UL94-VO, Class F  
**6 Terminals:** Phosphorus Bronze  
 .020 (.5mm) x .010 (.25mm). 100% Tin Plate.  
**Solderability:** MIL-STD-202  
 Method 208

**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays on page 57.

**Application:** For gull wing surface mounting of components and vertical or horizontal wound toroids up to .240 inches in diameter. STM240-6 had Alloy 42 lead frame.

Made in our China Factory





## High Quality Surface Mount Headers and Mounts

Ceramic Headers

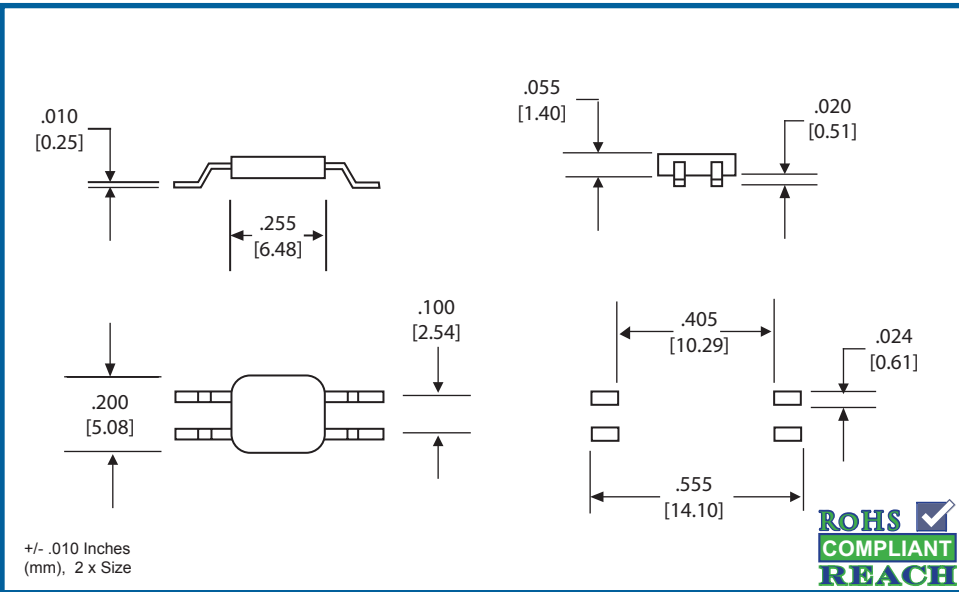
DR Series

Surface Mount

Horizontal

Vertical

Trays



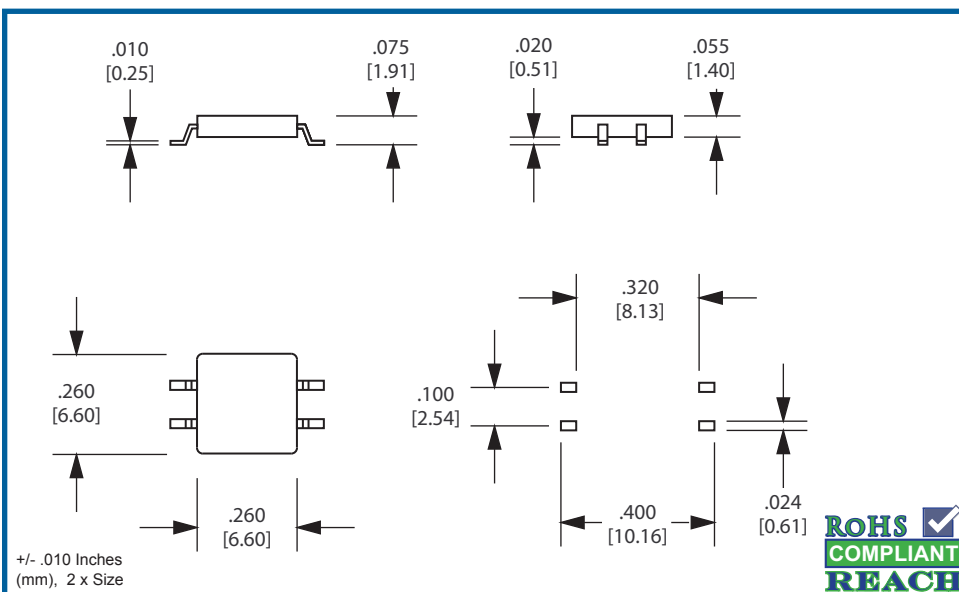
**STM255-4**

**Material:** DAP4 (Black)  
**UL Rating:** UL94-VO, Class F  
**4 Terminals:** Alloy 42  
 .020 (.5mm) x .010 (.25mm). 100% Tin Plate.  
**Solderability:** MIL-STD-202 Method 208

**Package Tray (HIPS):** TY50x50-B (200/tray)  
 See RoHS compliant PVC packaging trays, or tape and reel options on page 57.

**Application:** For gull wing surface mount of components and wound toroids cores up to .255 inches in diameter.

Made in our China Factory



**STM260-4**

**Material:** DAP4 (Black)  
**UL Rating:** UL94-VO, Class F  
**4 Terminals:** Alloy 42  
 .020 (.5mm) x .010 (.25mm). 100% Tin Plate.  
**Solderability:** MIL-STD-202 Method 208

**Package Tray (HIPS):** TY37x47-B (260/Tray)  
 See RoHS compliant PVC packaging trays, or tape and reel options on page 57.

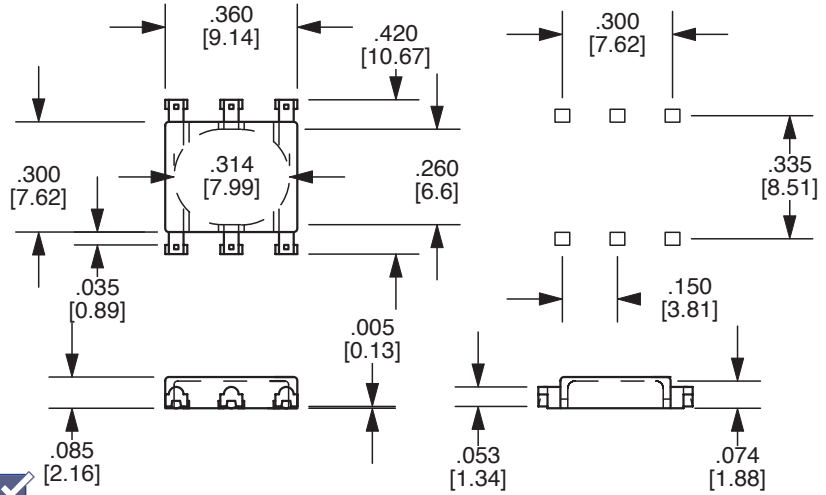
**Application:** For gull wing surface mount of components and wound toroids up to .260 inches in diameter.

Made in our China Factory

## STM270-06

**Material:** LCP (Natural)  
**UL Rating:** UL94-VO, Class F  
**6 Terminals:** Self Terminating  
**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays, or tape and reel options on page 57.  
**Application:** For surface mounting of toroids with wound diameters up to .260 and a max height of .070 inches. The toroid leads are tinned, and wrapped around the tabs on the toroid mount. The toroid leads then make a direct connection to the PCB during infrared solder reflow.

Made in our China Factory

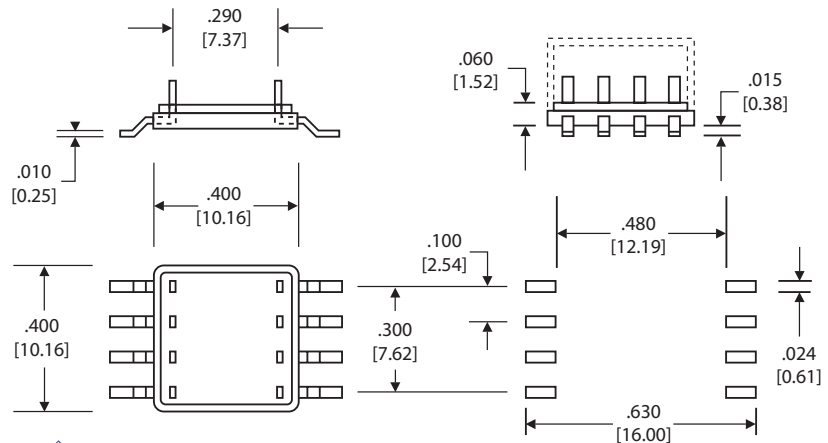


+/- .010 Inches (mm), 2 x Size

## STM281-8

**Material:** DAP4 (Black)  
**UL Rating:** UL94-VO, Class F  
**8 Terminals:** Phosphorus Bronze .020 (.5mm) x .010 (.25mm). 100% Tin Plate.  
**Solderability:** MIL-STD-202 Method 208  
**Package Tray (HIPS):** TY45x70-B (150/Tray)  
 See RoHS compliant PVC packaging trays options on page 57.  
**Application:** For surface mounting of components and wound toroids up to .280 inches in diameter. Encapsulation cover PC280 is available on page 16.

STM280-8 with Alloy 42 terminals instead of Phos Bronze is still available.

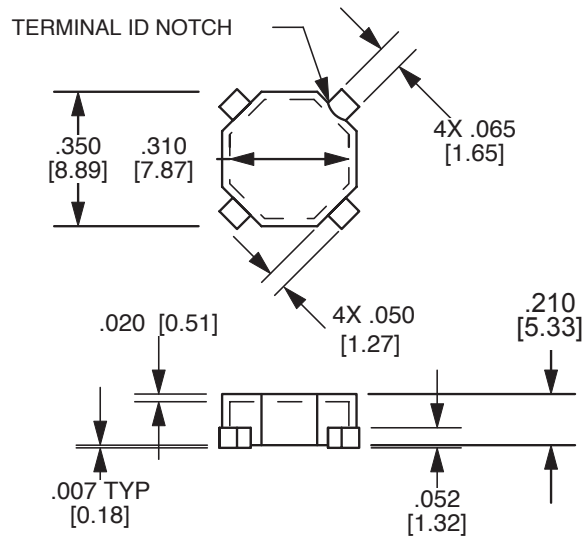


+/- .010 Inches (mm), 2 x Size

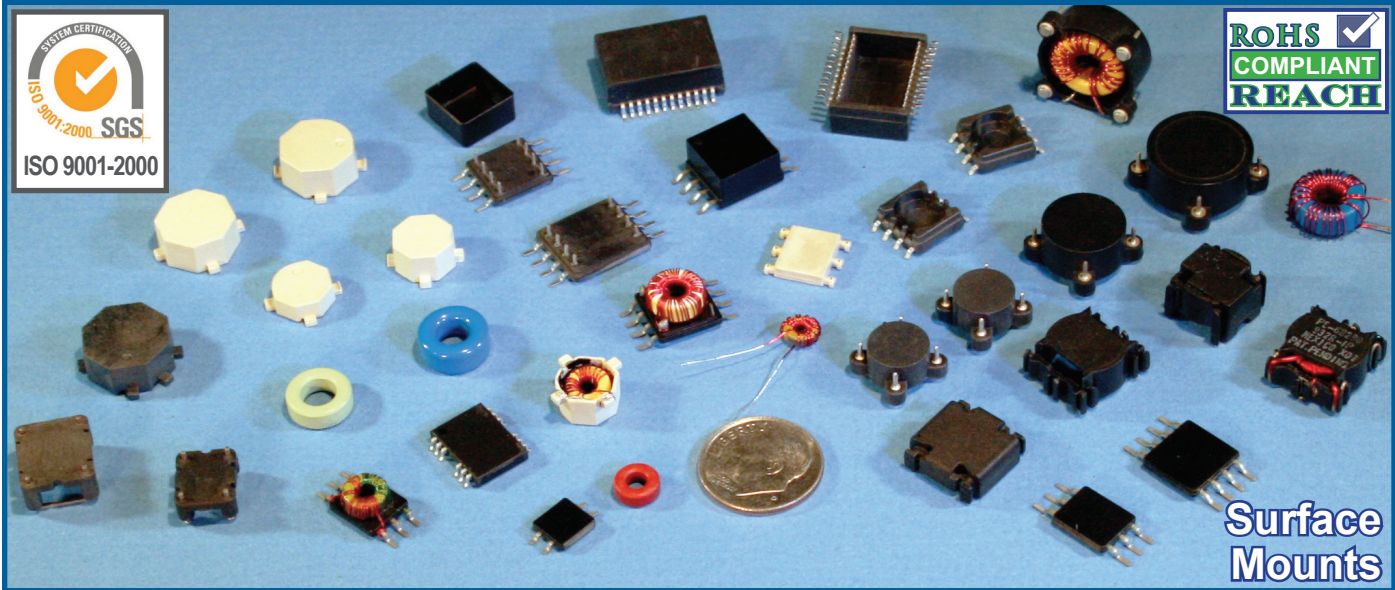
## STM303-04/175

**Material:** LCP2 (Black)  
**UL Rating:** UL94-VO, Class N  
**4 Terminals:** Self Terminating  
**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays, or tape and reel options on page 57.  
**Application:** For surface mounting of toroids with wound diameters up to .303 inches, and .175 inches in height. The toroid leads are tinned and wrapped around the tabs on the toroid mount that then make a direct connection to the PCB. Ideal for automatic pick and place.

Made in our China Factory



+/- .010 Inches (mm), 2 x Size



Ceramic Headers

DR Series

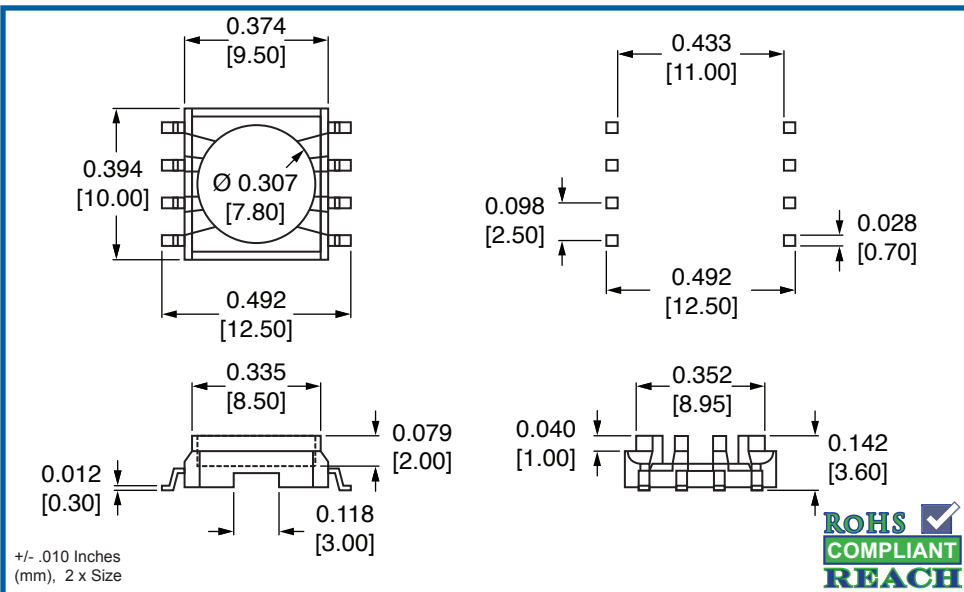
Surface Mount

Horizontal

Vertical

Trays

**Surface Mounts**

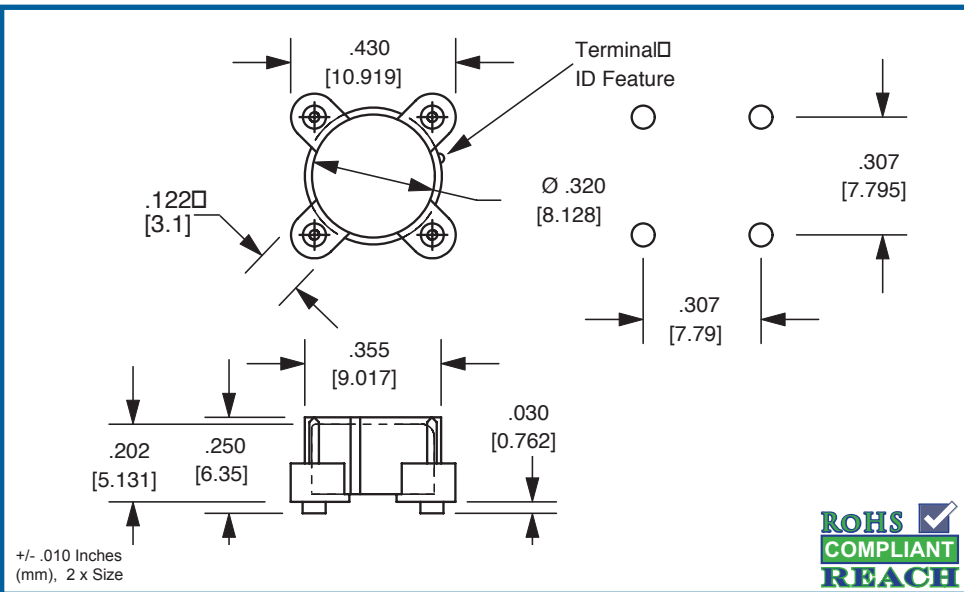


### STM309-8

**Material:** LCP (Black)  
**UL Rating:** UL94-VO, Class F  
**8 Terminals:** Phosphorus Bronze .020 (.5mm) x .010 (.25mm), 100% Tin Plate.  
**Solderability:** MIL-STD-202 Method 208

**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays, or tape and reel options on page 57.  
**Application:** For gull wing surface mount of wound toroids up to .309 inches in diameter.

Made in our China Factory



### STM360-4

**Material:** DAP4 (Black)  
**UL Rating:** UL94-VO, Class F  
**4 Terminals:** Brass - Nickel Flash 100% Tin Plate  
**Solderability:** MIL-STD-202 Method 208

**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays, or tape and reel options on page 57.  
**Application:** For surface mounting of wound toroids to .32 inches in diameter. "Lunar Lander" terminal design improves coplanarity, terminal durability during handling and transit, and uses less circuit board real estate.

NEW

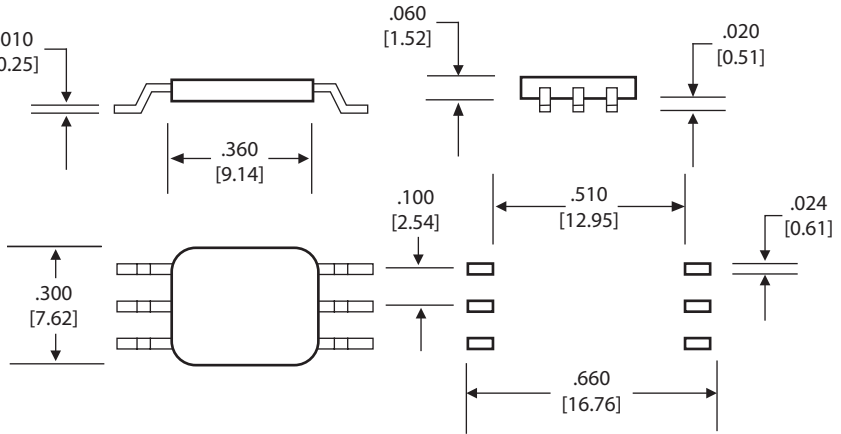
## STM366-6

**Material:** DAP4 (Black)  
**UL Rating:** UL94-VO, Class F  
**6 Terminals:** Phosphorus Bronze  
 .020 (.6mm) x .010 (.25mm), 100% Tin Plate.  
**Solderability:** MIL-STD-202  
 Method 208

**Package Tray (HIPS):** TY45x70-B (150/tray)  
 See RoHS compliant PVC packaging trays, on page 57.

**Application:** For gull wing surface mount of wound toroids and balun cores up to .360 inches in diameter. STM365-6 with Alloy 42 terminals is still available.

Made in our China Factory



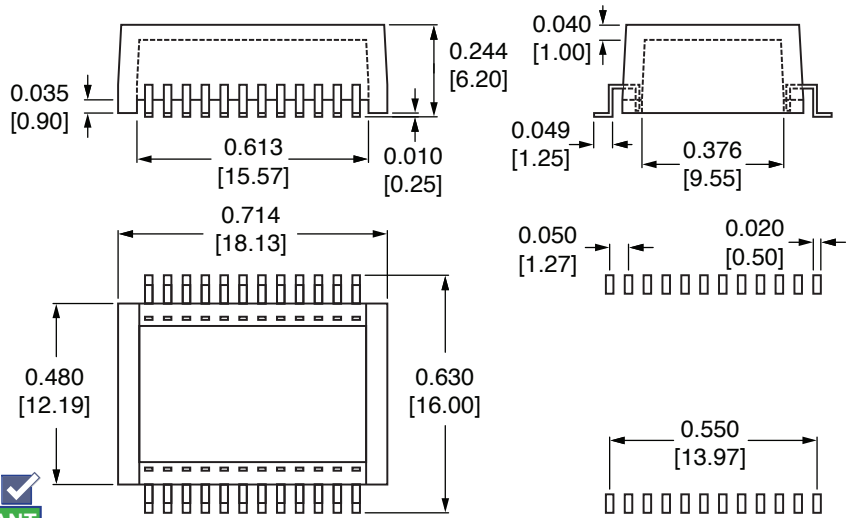
## SMD369-24

**Material:** DAP4 (Black)  
**UL Rating:** UL94-VO, Class F  
**24 Terminals:** Phosphorus Bronze  
 .020 (.5mm) x .010 (.25mm), 100% Tin Plate.  
**Solderability:** MIL-STD-202  
 Method 208

**Packaging Tubes:** 21" long, 28/tube  
 See RoHS compliant PVC packaging trays options on page 57.

**Application:** For gull wing surface mount of wound toroids and balun cores up to .369 inches in diameter or .60 inches long.

Made in our China Factory

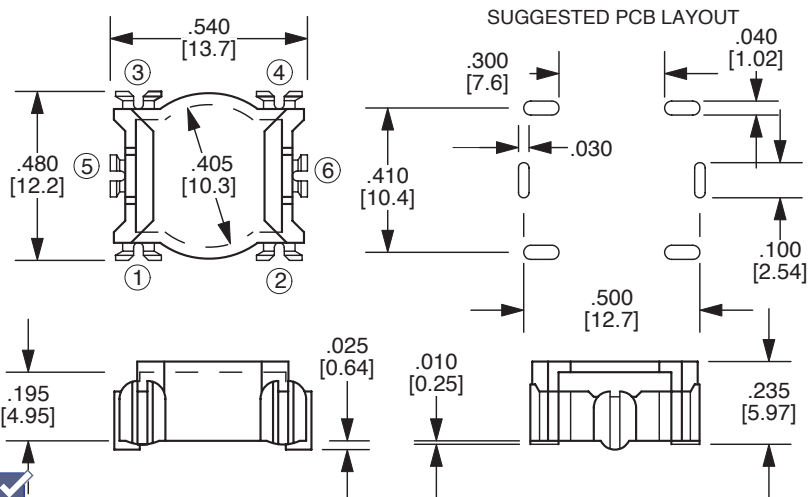


+/- .010 Inches (mm), 2 x Size

## STM37CS-06

**Material:** PPS (Black)  
**UL Rating:** UL94-VO, Class F  
**6 Terminals:** Self Terminating  
**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays, or tape and reel options on page 57.

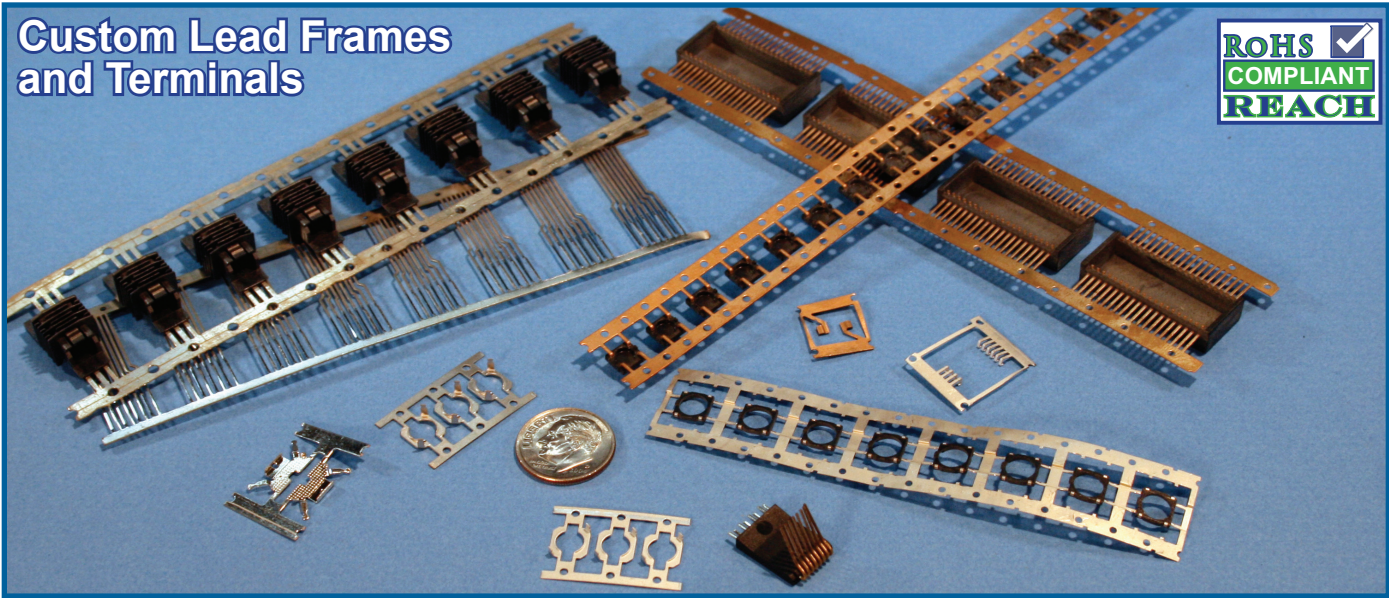
**Application:** For surface mount transformers or current sensors. For toroids up to .400 inches in diameter and uses the toroid's winding leads to surface mount the toroid and case to the PCB. Use #34 AWG (.006) in termination positions 5 & 6, and #24 AWG (.020) in positions 1,2,3 & 4. This product is the patented concept of Pulse Engineering Inc.



+/- .010 Inches (mm), 2 x Size



## Custom Lead Frames and Terminals



Ceramic Headers

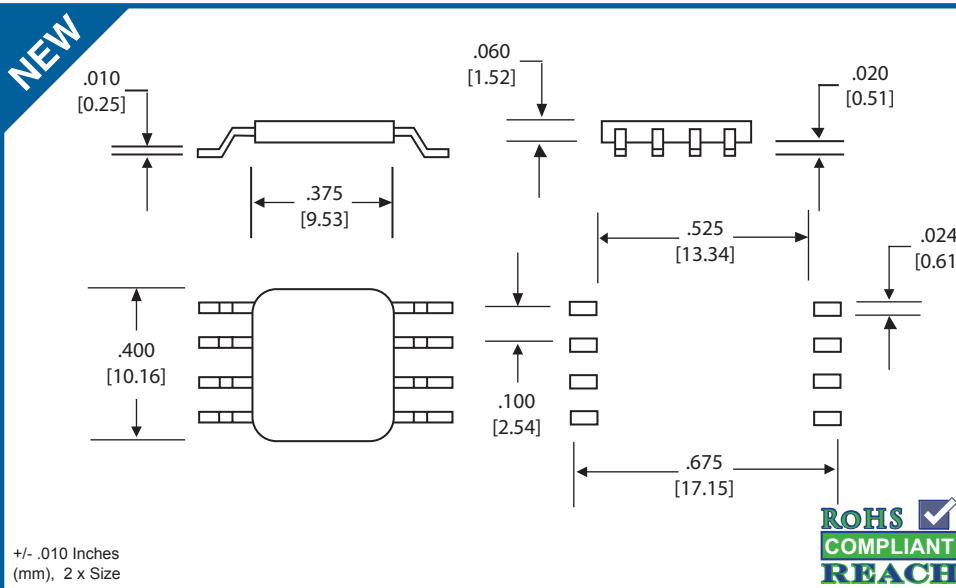
DR Series

Surface Mount

Horizontal

Vertical

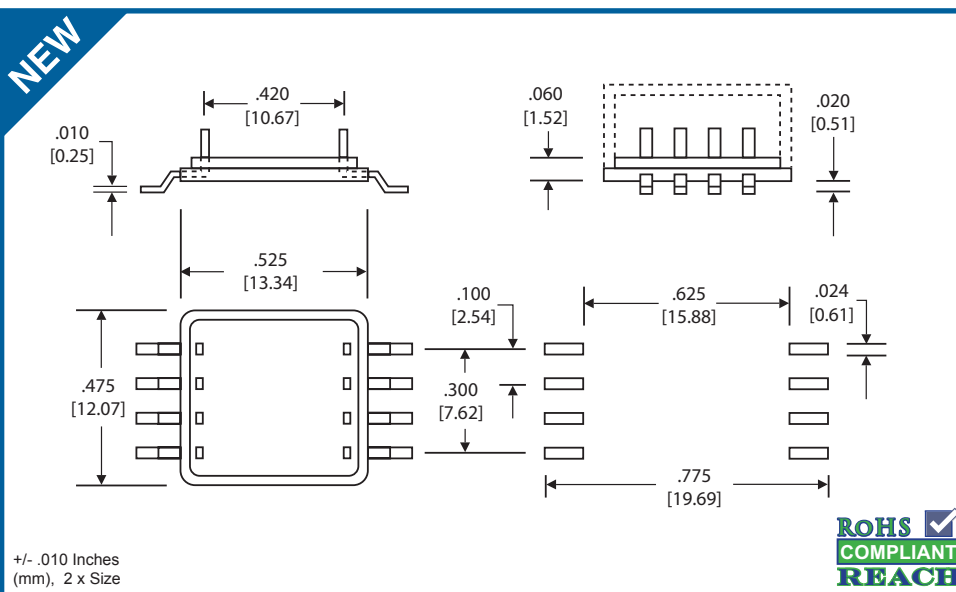
Trays



**STM376-8**

**Material:** DAP4 (Black)  
**UL Rating:** UL94-VO, Class F  
**8 Terminals:** Phosphorus Bronze .020 (.5mm) x .010 (.25mm). 100% Tin Plate.  
**Solderability:** MIL-STD-202 Method 208  
**Package Tray (HIPS):** TY45x70-B (150/tray)  
 See RoHS compliant PVC packaging trays options on page 57.  
**Application:** For gull wing surface mount of wound toroids and balun cores up to .375 inches in diameter. STM375-8 with Alloy 42 terminals is still available.

Made in our China factory



**STM391-8**

**Material:** DAP4 (Black)  
**UL Rating:** UL94-VO, Class F  
**8 Terminals:** Phosphorus Bronze .020 (.5mm) x .010 (.25mm). 100% Tin Plate.  
**Solderability:** MIL-STD-202 Method 208  
**Package Tray (HIPS):** TY65x100-B (75/Tray)  
 See RoHS compliant PVC packaging trays options on page 57.  
**Application:** For surface mounting of components and wound toroids up to .390 inches in diameter. Encapsulation cover PC390 is available on page 33. STM390-8 with Alloy 42 terminals is still available.

Made in our China factory

## STM40LC-02-LCP5

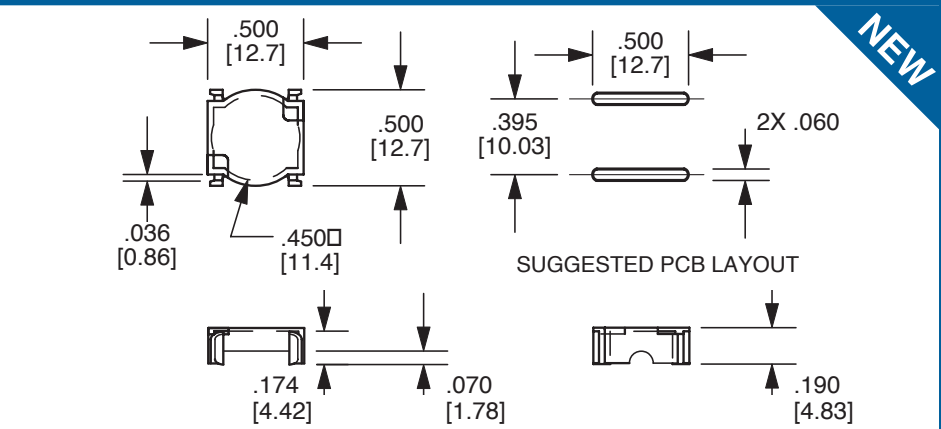
**Material:** LCP5 (Black)  
**UL Rating:** UL94-VO, Class F  
**2 Terminals:** Self Terminating

## STM40LCC-04-LCP5

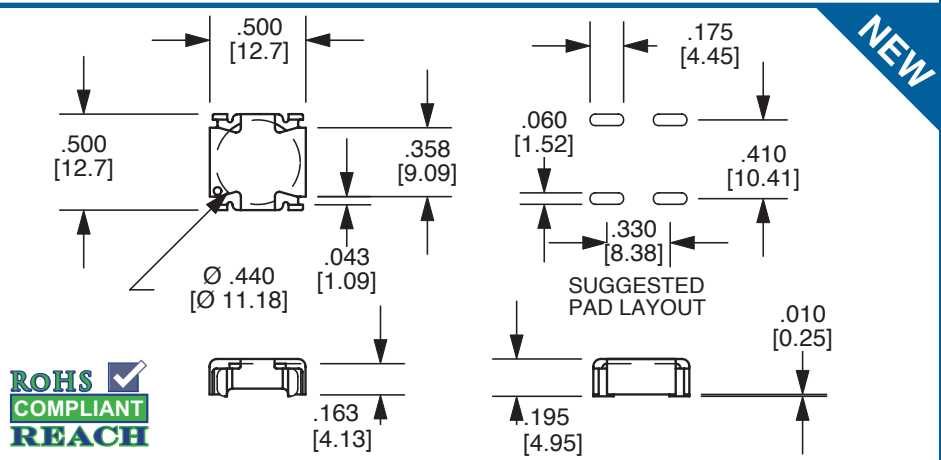
**Material:** LCP5 (Black)  
**UL Rating:** UL94-VO, Class F  
**4 Terminals:** Self Terminating  
**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays.

**Application:** The STM40LC-02 is for self leading surface mount inductors (2 wire terminations) and STM40LCC-04 for inductors and transformers up to 4 wire terminations. For wound toroids up to .450 and uses the toroid's winding leads to surface mount the toroid and case to the PCB. The toroid's leads are held in position by the slots incorporated in the case.

This product is the patented concept of Pulse Engineering Inc.



NEW



NEW

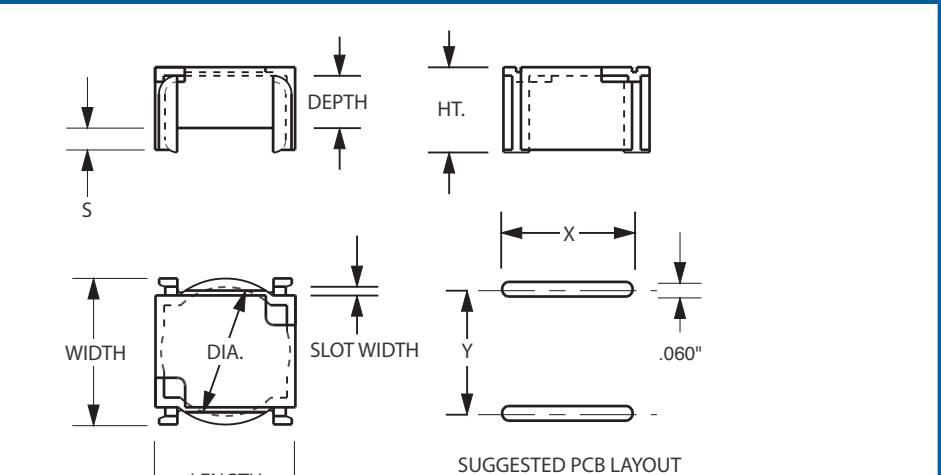


## STM LC SERIES

**Material:** PPS (Black)  
**Rating:** UL 94-VO  
**2 Terminals:** Self Terminating  
**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays, or tape and reel options on page 57.

**Application:** The STM LC Series is for self leading surface mount low current inductors. The series will accommodate wound toroidal cores from .200 up to .610 in diameter and uses the toroid's winding leads to surface mount the toroid and case to the printed circuit board. The wound toroid's leads are held in position by the slots and channels incorporated in the mounting case.

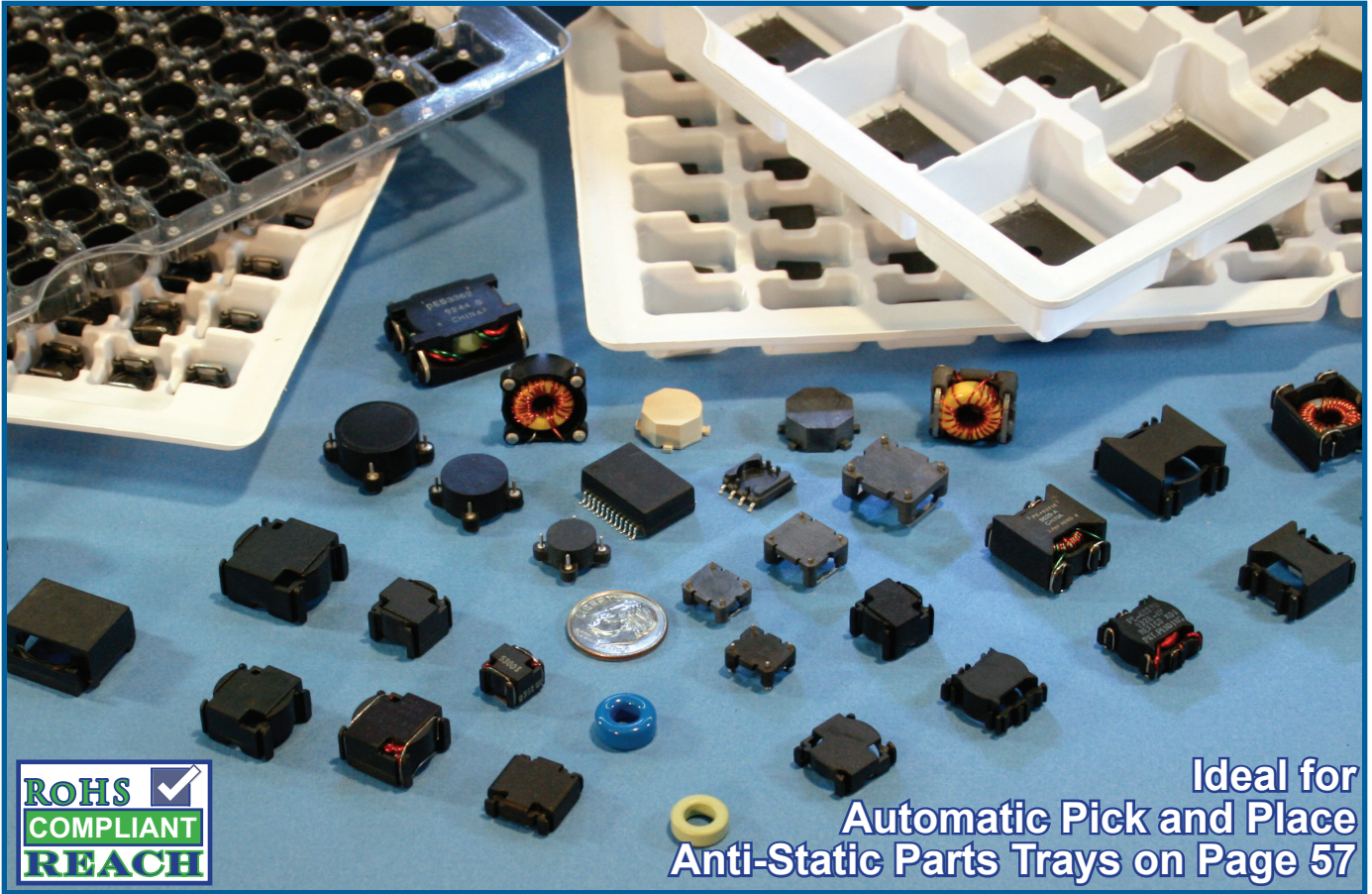
This product is the patented property of Pulse Engineering Inc.



± .010 inches  
 [mm] [Not to Scale]

PART NO.	TRAY NO.
STM20LC-02	TY50x50-A
STM30LC-02	TY50x50-A
STM37LC-02	TY74x77-A
STM44LC-02	TY74x77-A
STM50LC-02	TY74x77-A

PART NO.	LENGTH	WIDTH	HT.	DIA.	DEPTH	S	SLOT	X	Y	RECOMMENDED WIRE SIZE
STM20LC-02	.330 [8.38]	.330 [8.38]	.240 [6.09]	.270 [6.85]	.135 [3.42]	.080 [2.03]	.024 [0.60]	.300 [7.62]	.270 [6.85]	#32 (.009) to #22 (.027)
STM30LC-02	.425 [10.79]	.430 [10.92]	.310 [7.87]	.375 [9.52]	.175 [4.44]	.100 [2.54]	.036 [0.91]	.400 [10.16]	.360 [9.14]	#32 (.009) to #20 (.034)
STM37LC-02	.545 [13.84]	.550 [13.97]	.310 [7.87]	.490 [12.44]	.175 [4.44]	.100 [2.54]	.036 [0.91]	.520 [13.20]	.460 [11.68]	#32 (.009) to #20 (.034)
STM44LC-02	.575 [14.60]	.600 [15.24]	.350 [8.89]	.530 [13.46]	.210 [5.33]	.100 [2.54]	.036 [0.91]	.550 [13.97]	.510 [12.95]	#30 (.011) to #20 (.034)
STM50LC-02	.650 [16.51]	.680 [17.27]	.350 [8.89]	.610 [15.49]	.210 [5.33]	.100 [2.54]	.036 [0.91]	.620 [15.74]	.590 [14.98]	#30 (.011) to #20 (.034)



**Ideal for Automatic Pick and Place  
Anti-Static Parts Trays on Page 57**

Ceramic Headers

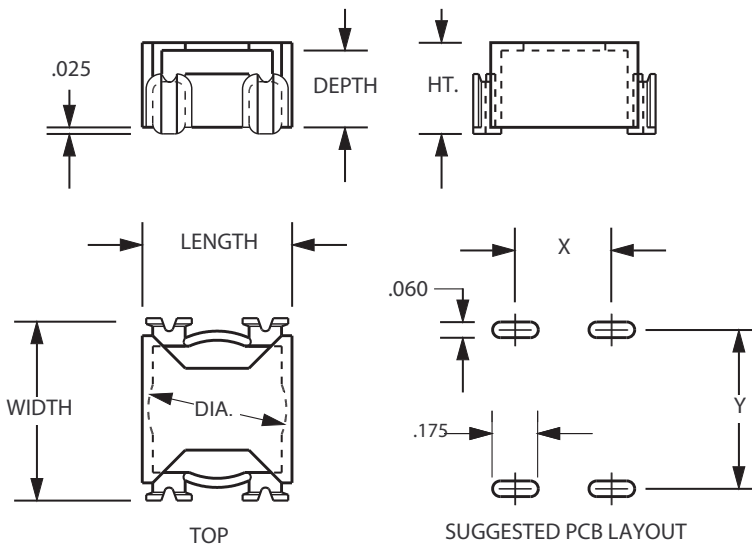
DR Series

Surface Mount

Horizontal

Vertical

Trays



### STM LCC SERIES

**Material:** PPS (Black)  
**Rating:** UL 94-VO  
**4 Terminals:** Self Terminating  
**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays, or tape and reel options on page 57.  
**Application:** The STM LCC Series is for self leading surface mount low current coupled inductors and transformers. The series will accommodate wound toroidal cores from .485 up to .605 in diameter and uses the toroid's winding leads to surface mount the toroid and case to the printed circuit board. The wound toroids leads are held in position by the slots and channels incorporated in the mounting case.

This product and concept is the patented property of Pulse Engineering Inc.

PART NO.	TRAY NO.
STM37LCC-04	TY74x77-A
STM44LCC-04	TY74x77-A
STM50LCC-04	TY74x77-A

± .010 inches  
[mm] Not to Scale

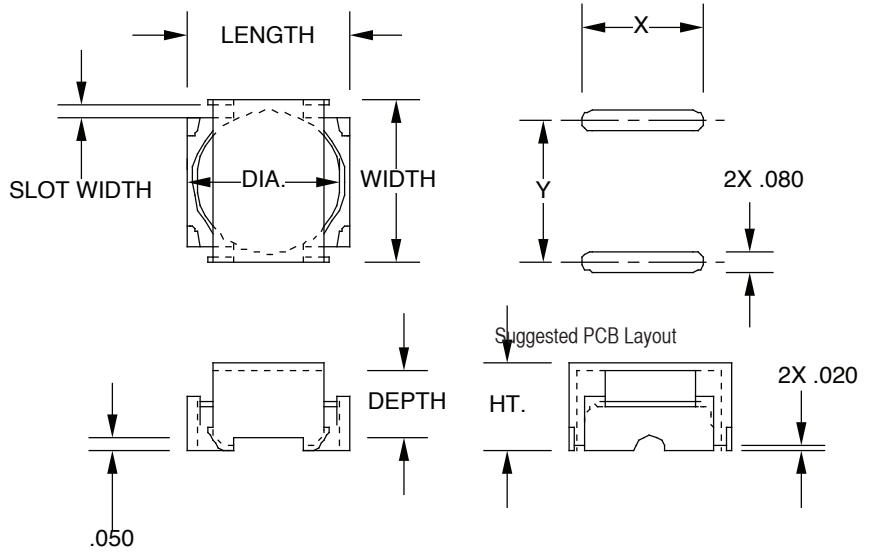


PART NO.	LENGTH	WIDTH	HT.	DIA.	DEPTH	X	Y	RECOMMENDED WIRE SIZE
STM37LCC-04	.550 [13.97]	.630 [16.00]	.310 [7.87]	.485 [12.31]	.255 [6.47]	.340 [8.63]	.530 [13.46]	# 32 (.009) to # 20 (.034) AWG.
STM44LCC-04	.575 [14.60]	.700 [17.78]	.350 [8.89]	.530 [13.46]	.295 [7.49]	.370 [9.39]	.610 [15.49]	# 32 (.009) to # 20 (.034) AWG.
STM50LCC-04	.650 [16.51]	.750 [19.05]	.350 [8.89]	.605 [15.36]	.295 [7.49]	.445 [11.30]	.660 [16.76]	# 32 (.009) to # 20 (.034) AWG.

## STM HC SERIES

**Material:** PPS (Black)  
**Rating:** UL 94-VO  
**2 Terminals:** Self Terminating  
**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays, or tape and reel options on page 57.  
**Application:** The STM HC Series is for self leading surface mount low current inductors. The series will accommodate wound toroidal cores from .500 up to .840 in diameter and uses the toroid's winding leads to surface mount the toroid and case to the printed circuit board. The wound toroid's leads are held in position by the slots and channels incorporated in the mounting case.

This product is the patented property of Pulse Engineering Inc., San Diego, CA.



PART NO.	TRAY NO.
STM37HC-02	TY74x77-A
STM44HC-02	TY74x77-A
STM50HC-02	TY74x77-A
STM68HC-02	TY122x140-A



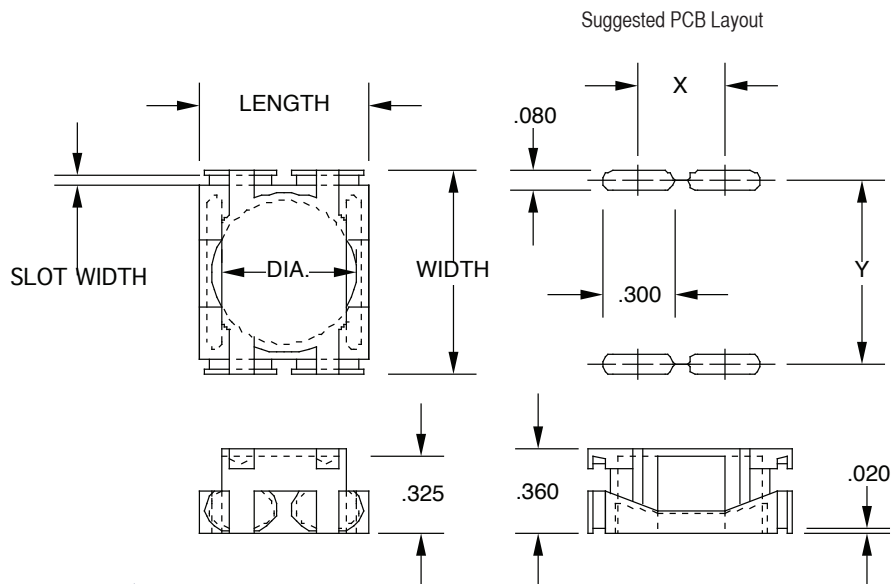
± .010 inches  
 [mm] [Not to Scale]

PART NO.	LENGTH	WIDTH	HT.	DIA.	DEPTH	SLOT WIDTH	X	Y	WIRE SIZE
STM37HC-02	.600 [15.2]	.585 [14.8]	.320 [8.1]	.500 [12.7]	.240 [6.1]	.045 [1.1]	.440 [11.2]	.500 [12.7]	#22 to #18
STM44HC-02	.650 [16.5]	.650 [16.5]	.360 [9.1]	.580 [14.7]	.280 [7.1]	.045 [1.1]	.490 [12.4]	.570 [14.5]	#22 to #18
STM50HC-02	.720 [18.3]	.720 [18.3]	.360 [9.1]	.650 [16.4]	.280 [7.1]	.045 [1.1]	.560 [14.2]	.640 [16.2]	#22 to #18
STM68HC-02	.920 [23.4]	.920 [23.4]	.355 [9.0]	.840 [21.3]	.275 [7.0]	.055 [1.4]	.700 [17.8]	.830 [21.1]	#20 to #16

## STM HCC SERIES

**Material:** PPS (Black)  
**Rating:** UL 94-VO  
**4 Terminals:** Self Terminating  
**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays, or tape and reel options on page 57.  
**Application:** The STM HCC Series is for self leading surface mount low current coupled inductors and transformers. The series will accommodate wound toroidal cores from .600 up to .880 in diameter and uses the toroid's winding leads to surface mount the toroid and case to the printed circuit board. The wound toroid's leads are held in position by the slots and channels incorporated in the mounting case.

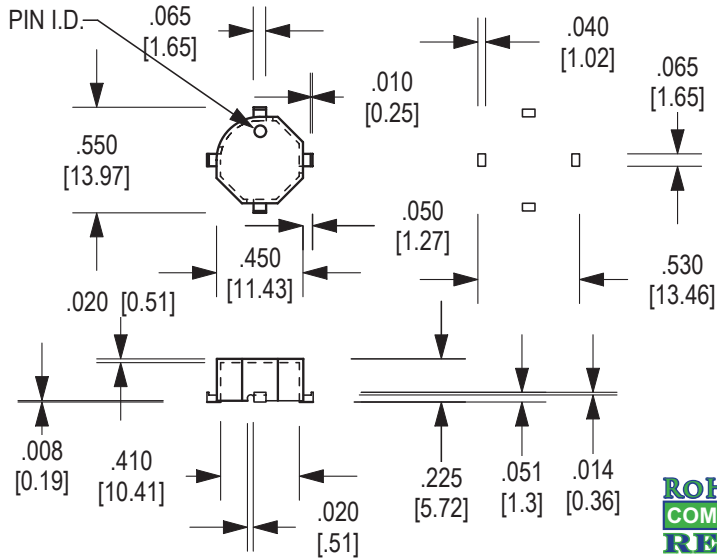
This product is the patented property of Pulse Engineering Inc., San Diego, CA.



± .010 inches  
 [mm] [Not to Scale]

PART NO.	LENGTH	WIDTH	DIA.	X	Y	SLOT WIDTH	WIRE SIZE	PACKAGING TRAY
STM44HCC-04	.700 [17.7]	.850 [21.6]	.600 [15.2]	.360 [9.1]	.770 [19.6]	.045 [1.0]	#22 to #18	TY85x116-A
STM50HCC-04	.780 [19.8]	.895 [22.7]	.680 [17.3]	.440 [11.2]	.810 [20.6]	.045 [1.0]	#22 to #18	TY85x116-A
STM68HCC-04	.980 [24.9]	1.090 [27.7]	.880 [22.3]	.620 [15.7]	1.010 [25.6]	.055 [1.4]	#20 to #16	TY122x140-A

## STM403-04/190



+/- .010 Inches (mm), Actual Size

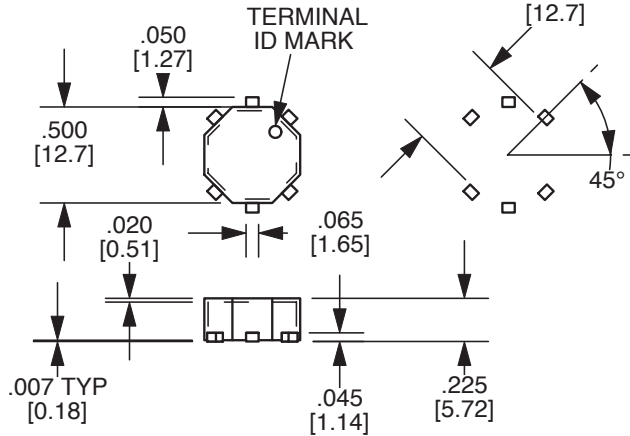


**Material:** LCP (Natural)  
**UL Rating:** UL94-VO, Class N  
**4 Terminals:** Self Terminating  
**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays on page 57.

**Application:** For surface mounting toroids with wound diameters up to .403 inches and .190 inches in height. The toroid leads are tinned, then wrapped around the tabs on the toroid mount. The toroid's leads then make direct contact to the PCB. Ideal for automatic pick and place.

Made in our China factory

## STM453-06/195



+/- .010 Inches (mm), Actual Size

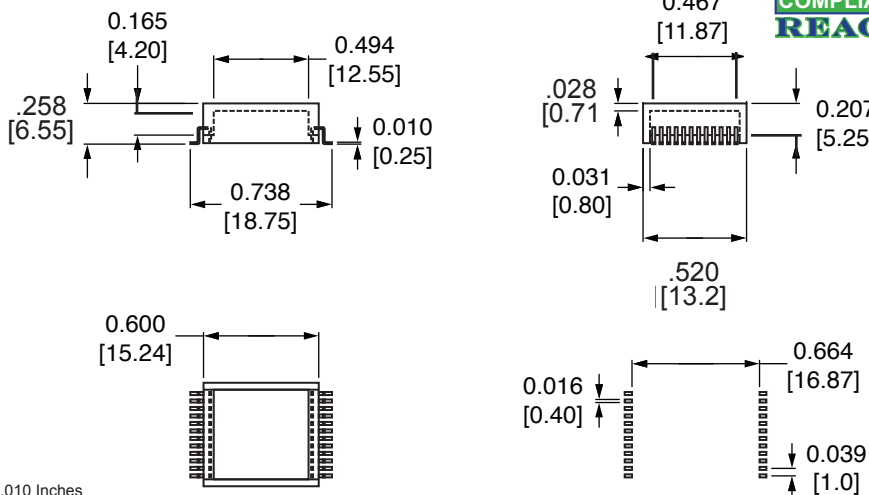


**Material:** LCP (Natural)  
**UL Rating:** UL94-VO, Class N  
**6 Terminals:** Self Terminating  
**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays on page 57.

**Application:** For surface mounting toroids with wound diameters up to .403 inches and .190 inches in height. The toroid leads are tinned, then wrapped around the tabs on the toroid mount. The toroid's leads then make direct contact to the PCB. Ideal for automatic pick and place.

Made in our China factory

## SMD472-24



+/- .010 Inches (mm), Actual Size



**Material:** DAP4 (Black)  
**UL Rating:** UL94-VO, Class F  
**24 Terminals:** Phos Bronze  
 .020 (.5mm) x .010 (.25mm). 100% Tin Plate.  
**Solderability:** MIL-STD-202 Method 208

**Packaging Tubes:** 21" long, 34/tube  
 See RoHS compliant PVC packaging trays options on page 57.

**Application:** For gull wing surface mount of wound toroids and balun cores up to .47 inches in diameter or .59 inches long.

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Ceramic Headers

DR Series

Surface Mount

Horizontal

Vertical

Trays

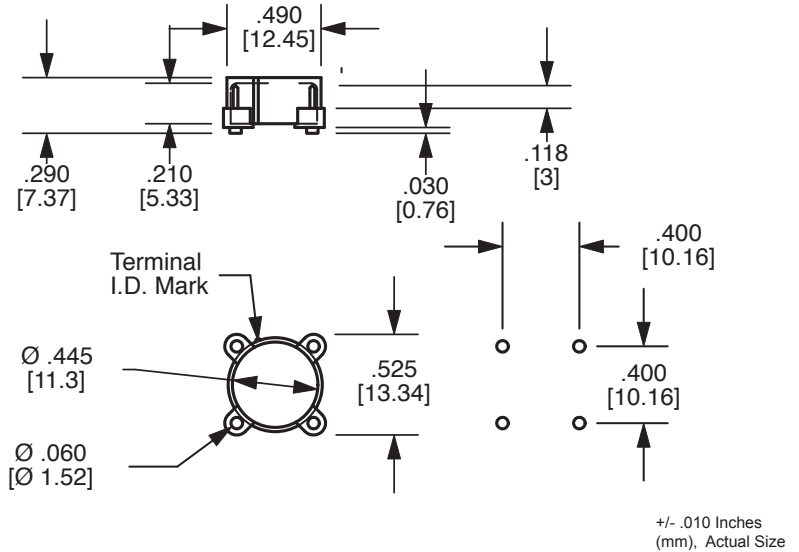
## STM460-4

**Material:** DAP4 (Black)  
**UL Rating:** UL94-VO, Class F  
**4 Terminals:** Brass - Nickel Flash  
 100% Tin Plate  
**Solderability:** MIL-STD-202  
 Method 208

**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays,  
 or tape and reel options on page 57.

**Application:** For low profile surface  
 mounting of wound toroids up to .445  
 inches in diameter. "Lunar Lander" de-  
 sign improves coplanarity and terminal  
 durability. Ideal for pick and place.

Made in our China factory



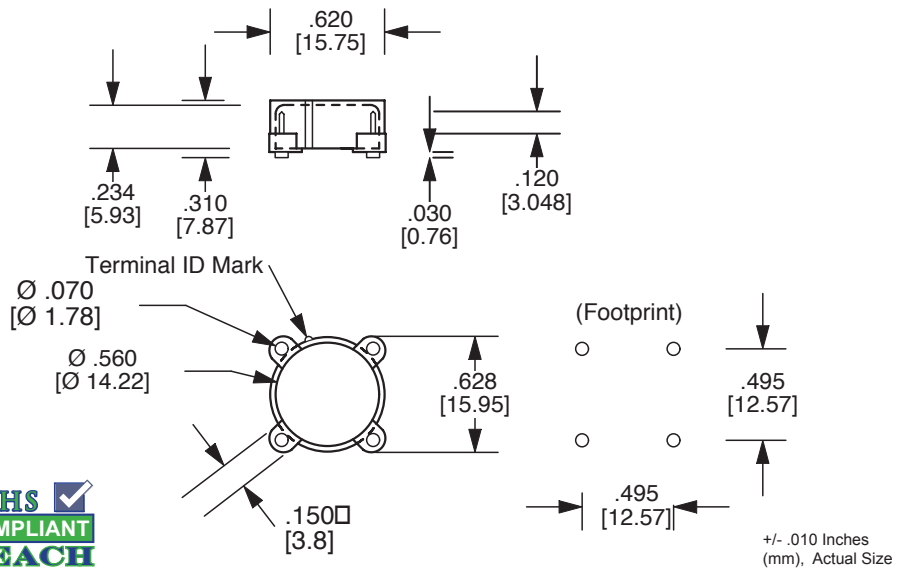
## STM560-4

**Material:** DAP4 (Black)  
**UL Rating:** UL94-VO, Class F  
**4 Terminals:** Brass - Nickel Flash  
 100% Tin Plate  
**Solderability:** MIL-STD-202  
 Method 208

**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays,  
 or tape and reel options on page 57.

**Application:** For low profile surface  
 mounting of wound toroids up to .560  
 inches in diameter. "Lunar Lander" de-  
 sign improves coplanarity and terminal  
 durability. Ideal for pick and place.

Made in our China factory

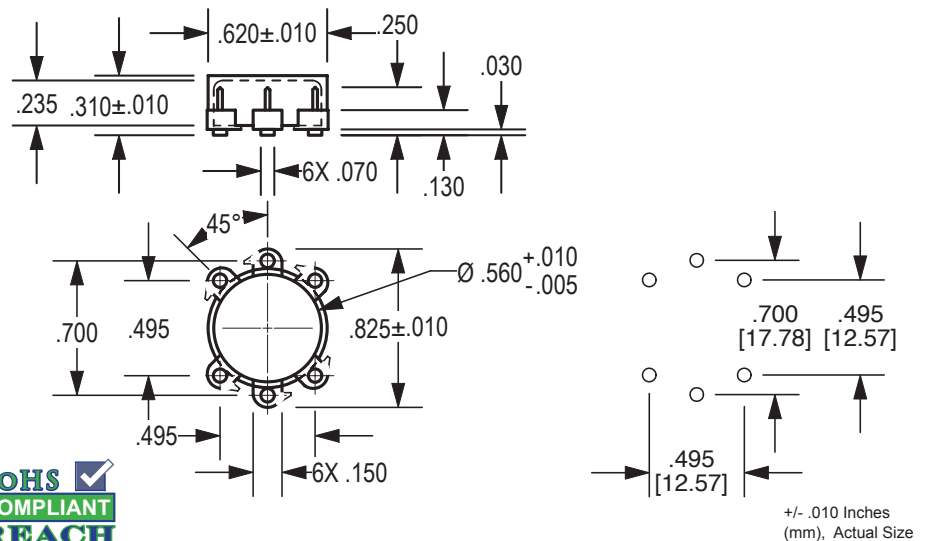


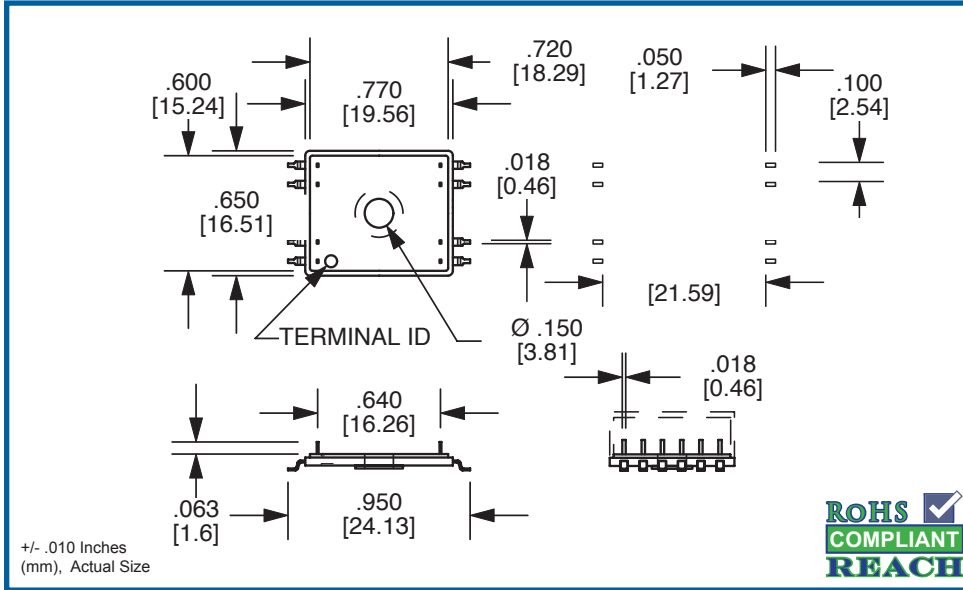
## STM560-6

**Material:** DAP4 (Black)  
**UL Rating:** UL94-VO, Class F  
**6 Terminals:** Brass - Nickel Flash  
 100% Tin Plate  
**Solderability:** MIL-STD-202  
 Method 208

**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays,  
 or tape and reel options on page 57.

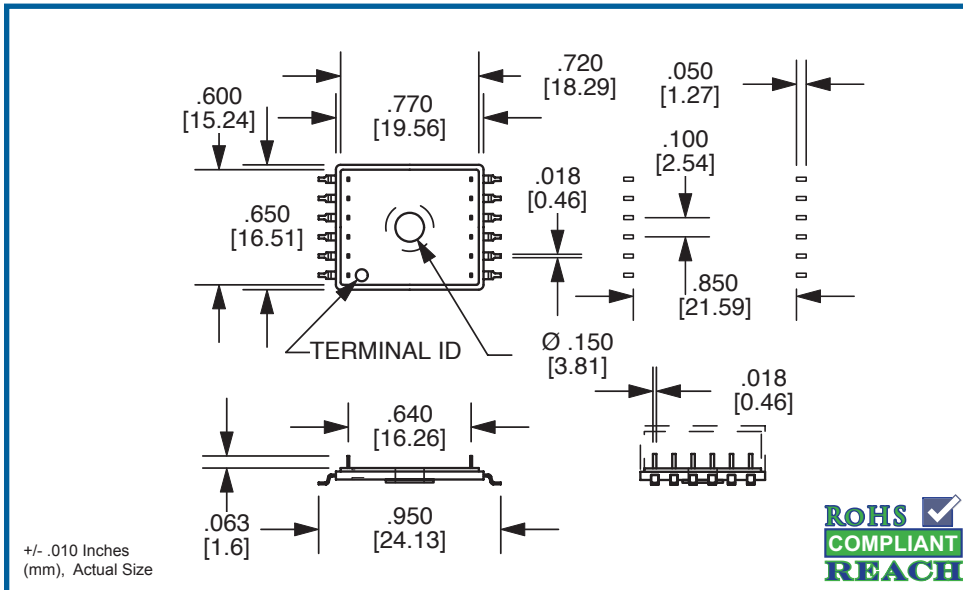
**Application:** For low profile surface  
 mounting of wound toroids up to .560  
 inches in diameter. "Lunar Lander"  
 terminal design improves coplanarity  
 and terminal durability. Ideal for pick and  
 place. Made in our China factory





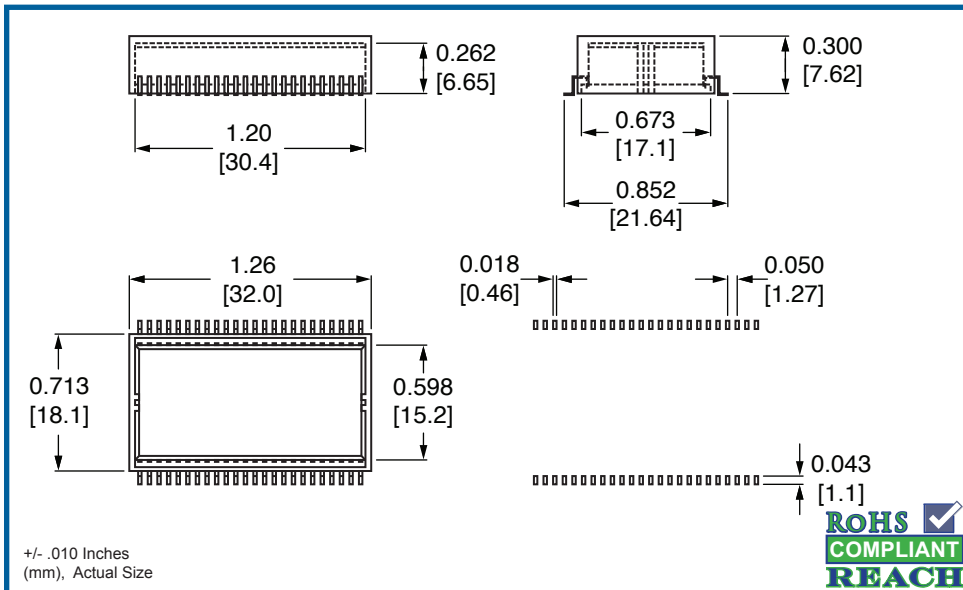
### STM581-8

**Material:** DAP4 (Black)  
**UL Rating:** UL94-VO, Class F  
**8 & 12 Terminals:** Alloy 42  
 100% Tin Plate  
**Solderability:** MIL-STD-202  
 Method 208  
**Package Tray (HIPS):** TY65X100-B (75/tray)  
 See RoHS compliant PVC packaging tray options on page 57.  
**Application:** For surface mounting of components, pot cores and wound toroids up to .580 inches in diameter. Potting cup PC581 may be used to encapsulate the component. (Page 33)  
 Made in our China Factory



### STM581-12

**Material:** DAP4 (Black)  
**UL Rating:** UL94-VO, Class F  
**8 & 12 Terminals:** Alloy 42  
 100% Tin Plate  
**Solderability:** MIL-STD-202  
 Method 208  
**Package Tray (HIPS):** TY65X100-B (75/tray)  
 See RoHS compliant PVC packaging tray options on page 57.  
**Application:** For surface mounting of components, pot cores and wound toroids up to .580 inches in diameter. Potting cup PC581 may be used to encapsulate the component. (Page 33)  
 Made in our China Factory



### SMD600-48

**Material:** DAP4 (Black)  
**UL Rating:** UL94-VO, Class F  
**48 Terminals:** Phosphorus Bronze  
 .020 (.5mm) x .010 (.25mm), 100% Tin Plate.  
**Solderability:** MIL-STD-202  
 Method 208  
**Packaging Tubes:** 21.5" long, 16/tube  
 See RoHS compliant PVC packaging trays options on page 57.  
**Application:** For gull wing surface mount of wound toroids and components up to .60 inches in diameter and 1.150 inches long.  
 Made in our China Factory

Ceramic Headers

DR Series

Surface Mount

Horizontal

Vertical

Trays

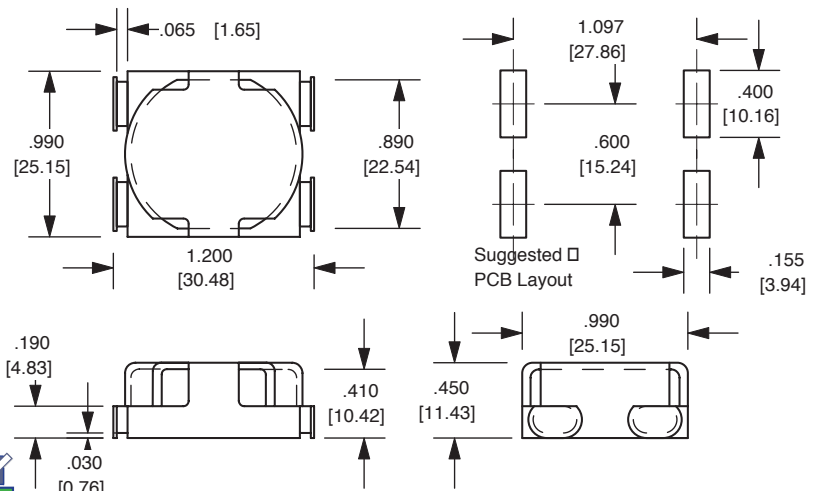


## Surface Mount Toroid Mounts Matching Trays Anti-Static Parts Trays



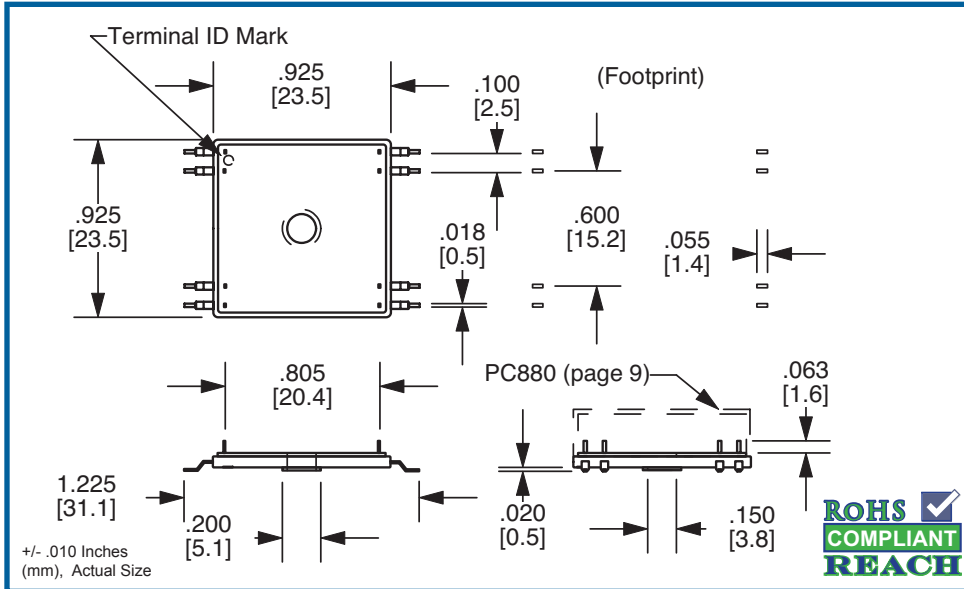
### STM80HCC-04

**Material:** PPS (Black)  
**UL Rating:** UL94-VO, Class F  
**4 Terminals:** Self Terminating  
**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays, or tape and reel options on page 57.  
**Application:** For self leading of surface mount high current coupled inductors and transformers using wound toroids up to .890 inches in diameter. The toroid's winding leads are used to make the surface mount connection to the PCB. This "Bigfoot" concept is the patented property of Pulse Engineering.



+/- .010 Inches  
(mm), Actual Size





**STM880-8**

**Material:** DAP4 (Black)

**UL Rating:** UL94-VO, Class F

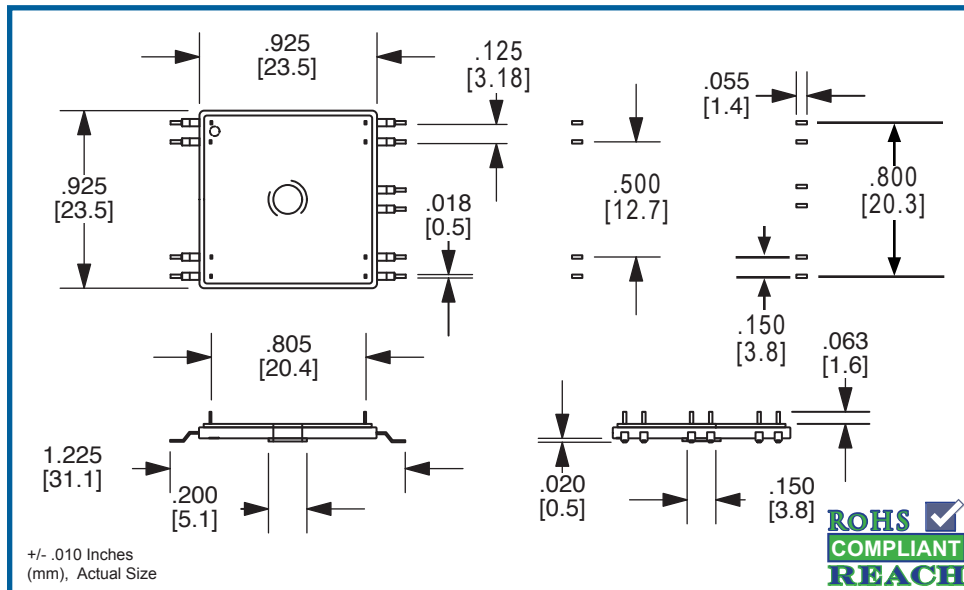
**8 Terminals:** Alloy 42  
100% Tin Plate

**Solderability:** MIL-STD-202  
Method 208

**Package Tray (HIPS):** TY122X140-B (35/tray)  
See RoHS compliant PVC packaging trays options on page 57.

**Application:** For surface mounting of components, pot cores and wound toroids up to .900 inches in diameter. Potting cup PC880 may be used to encapsulate the component. (Page 33)

Made in our China Factory



**STM880-10**

**Material:** DAP4 (Black)

**UL Rating:** UL94-VO, Class F

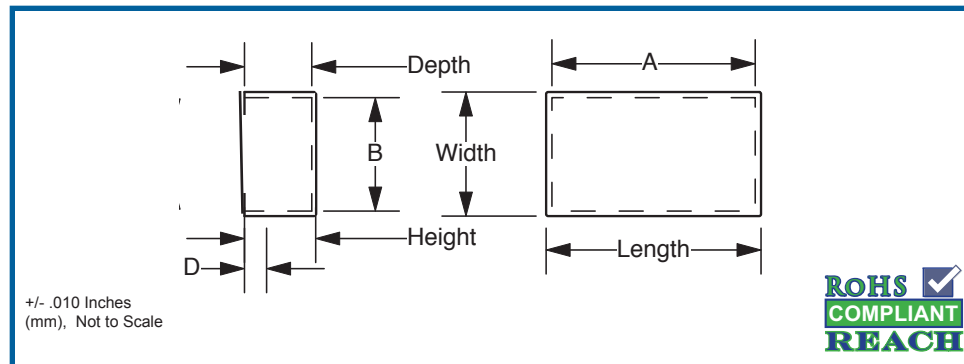
**12 Terminals:** Alloy 42  
100% Tin Plate

**Solderability:** MIL-STD-202  
Method 208

**Package Tray (HIPS):** TY122X140-B (35/tray)  
See RoHS compliant PVC packaging trays options on page 57.

**Application:** For surface mounting of components, pot cores and wound toroids up to .900 inches in diameter. Potting cup PC880 may be used to encapsulate the component. (Page 33)

Made in our China Factory



**POTTING CUPS & COVERS**

**Material:** DAP (Black)

**UL Rating:** UL94-VO, Class F

**Package Method:** Bulk in Poly Bags

**Application:** For potting and sealing toroid and components on surface mount devices. Cup part number matches mount part number.

Cup part No.	Mount No.	Page No.	Length	Width	Height]	Depth	Mat'l
PC390	STM390-8	25	.525 [13.3]	.475 [12.1]	.280 [7.1]	.250 [6.3]	DAP
PC581	STM581-8	31	.770 [19.6]	.650 [16.5]	.280 [7.1]	.250 [6.3]	DAP
PC581	STM581-12	31	.770 [19.6]	.650 [16.5]	.280 [7.1]	.250 [6.3]	DAP
PC581/330	STM581-8	31	.770 [19.6]	.650 [16.5]	.330 [8.4]	.300 [7.6]	DAP
PC880-8	STM880-8	33	.925 [23.4]	.925 [23.4]	.365 [9.3]	.335 [8.5]	DAP
PC880-8	STM880-10	33	.925 [23.4]	.925 [23.4]	.365 [9.3]	.335 [8.5]	DAP

Ceramic Headers

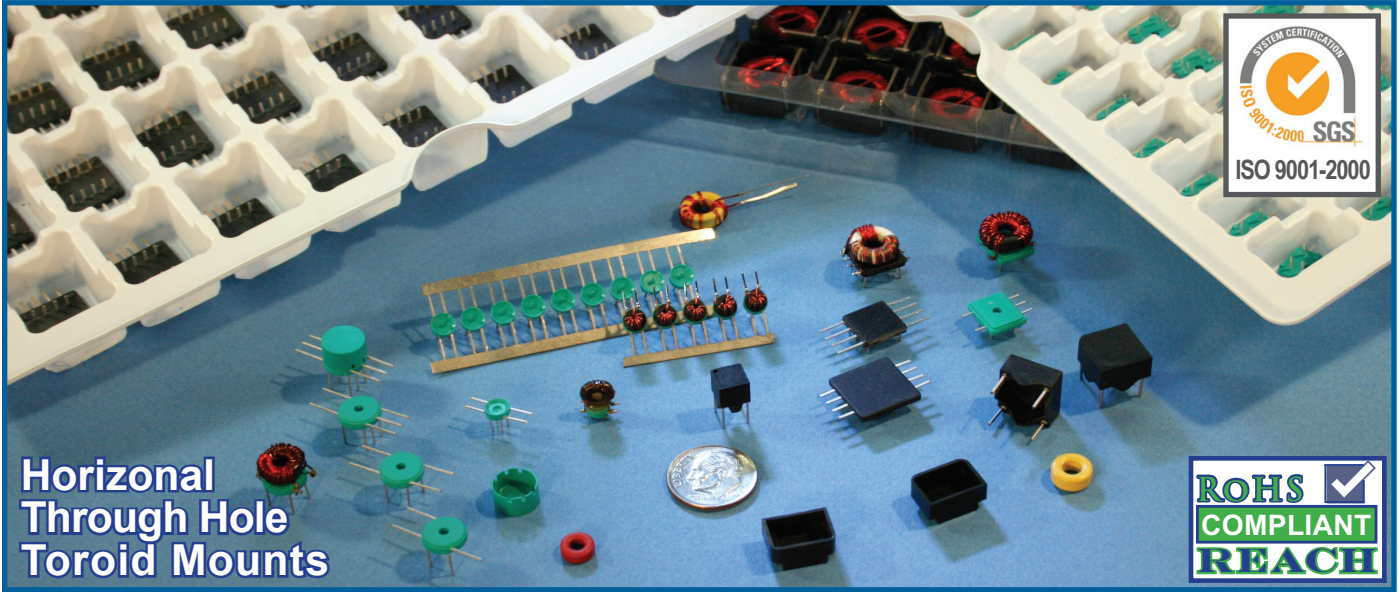
DR Series

Surface Mount

Horizontal

Vertical

Trays

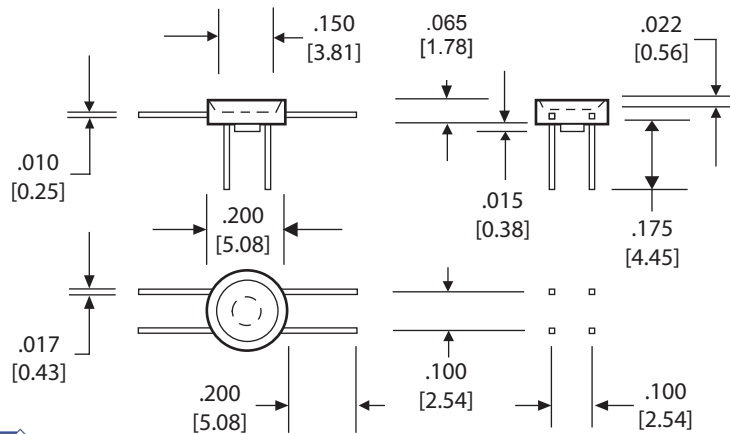


## Horizontal Through Hole Toroid Mounts

### TM200-4

- Material:** DAP (Green)
- UL Rating:** UL94-VO, Class F
- 4 Terminals:** Alloy 42 Lead Frame  
100% Tin Plated
- Solderability:** Per MIL-STD-202  
Method 208
- Package Method:** Styrofoam Trays
- Application:** For horizontal mounting of toroids with wound diameters from .050 to .180 inches.

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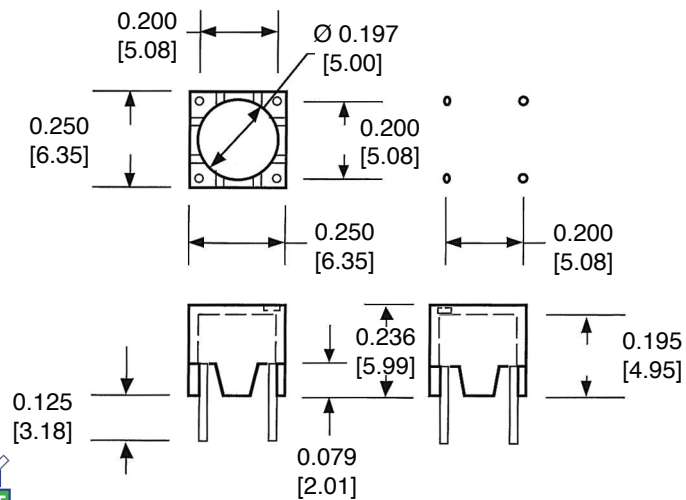


+/- .010 Inches  
(mm) 2 x Size

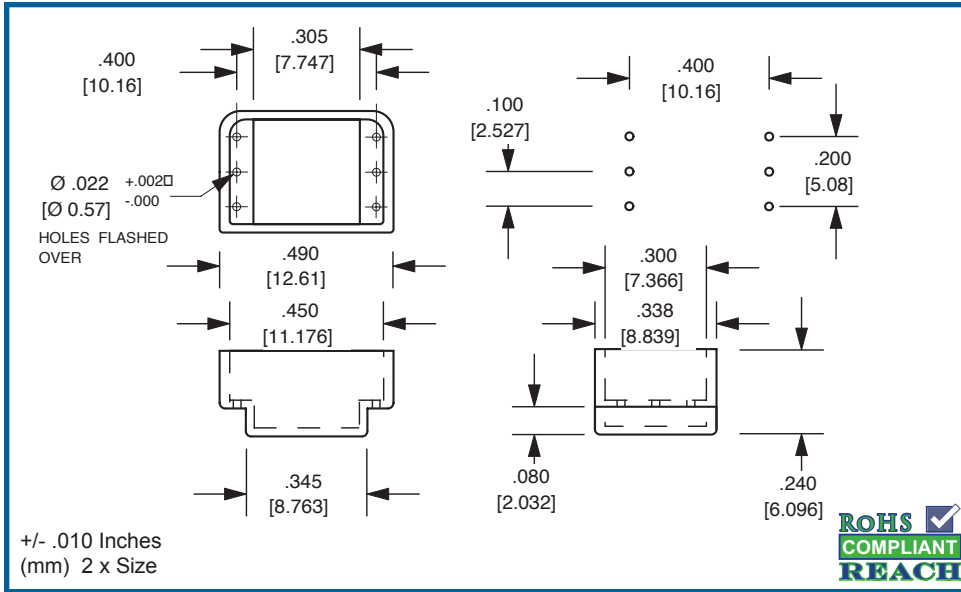
### TM251-4

- Material:** DAP (Green)
- UL Rating:** UL94-VO, Class F
- 4 Terminals:** Copper Wire  
.020 Diameter (.5mm) 100% Tin Plate
- Solderability:** Per MIL-STD-202  
Method 208
- Package Method:** Bulk in Poly Bags  
See RoHS compliant PVC packaging trays on page 57.
- Application:** For encapsulating components and wound toroids up to .195 inches in diameter. Ideal for automatic pick & place.

Made in our China Factory



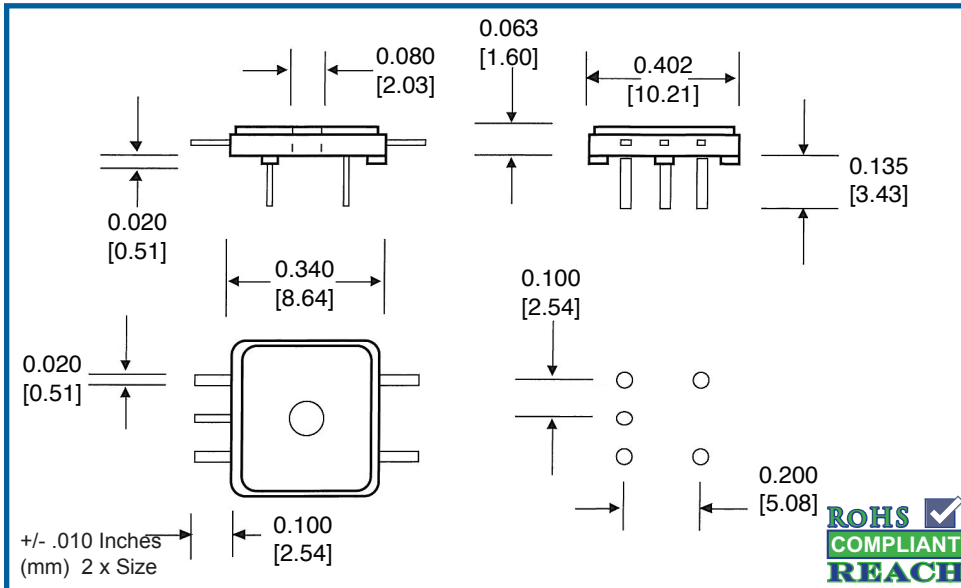
+/- .010 Inches  
(mm) 2 x Size



### TM305-06

**Material:** DAP4 (Black)  
**UL Rating:** UL94-VO, Class F  
**6 Terminals:** Self Terminating  
 Flashed over holes.022 in diameter  
**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays on page 57.  
**Application:** Widely used "T" case or potting cup for mounting components and wound toroids up to .300 in diameter.

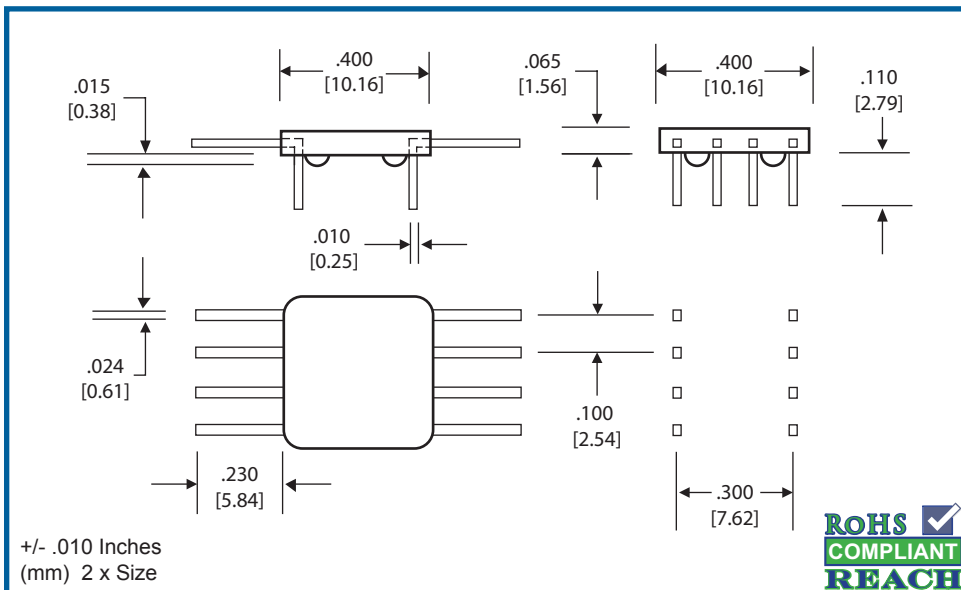
Made in our China Factory



### TM380-5

**Molding:** DAP (Green)  
**UL Rating:** UL94-VO, Class F  
**5 Terminals:** Alloy 42 LeadFrame  
 100 %Tin Plated  
**Solderability:** Per MIL-STD-202  
 Method 208  
**Package Tray (HIPS):** TY45x70-B (150/Tray)  
 See RoHS compliant PVC packaging trays options on page 57.  
**Application:** For horizontal mounting of components and wound toroids up to .380 inches in diameter.

Made in our China Factory



### TM411-8

**Material:** DAP4 (Black)  
**UL Rating:** UL94-VO, Class F  
**8 Terminals:** Phosphorous Bronze  
 .024 (.6mm) x .010 (.25mm). 100% Tin Plate.  
**Solderability:** Per MIL-STD-202  
 Method 208  
**Package Tray (HIPS):** TY65x100-B (75/tray)  
 See RoHS compliant PVC packaging trays options on page 57.  
**Application:** For horizontal mounting of components and wound toroids up to .400 inches in diameter. TM400-8 with Alloy 42 terminals is still available.

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Ceramic Headers

DR Series

Surface Mount

Horizontal

Vertical

Trays

Ceramic Headers

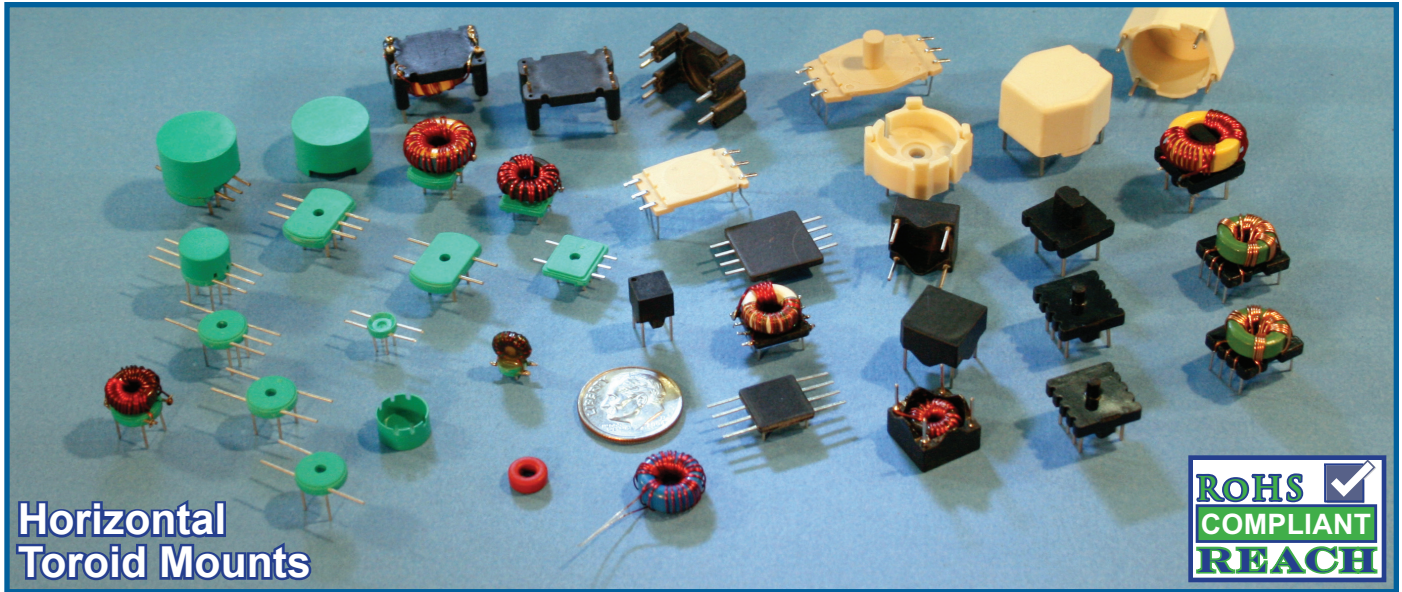
DR Series

Surface Mount

Horizontal

Vertical

Trays



## Horizontal Toroid Mounts

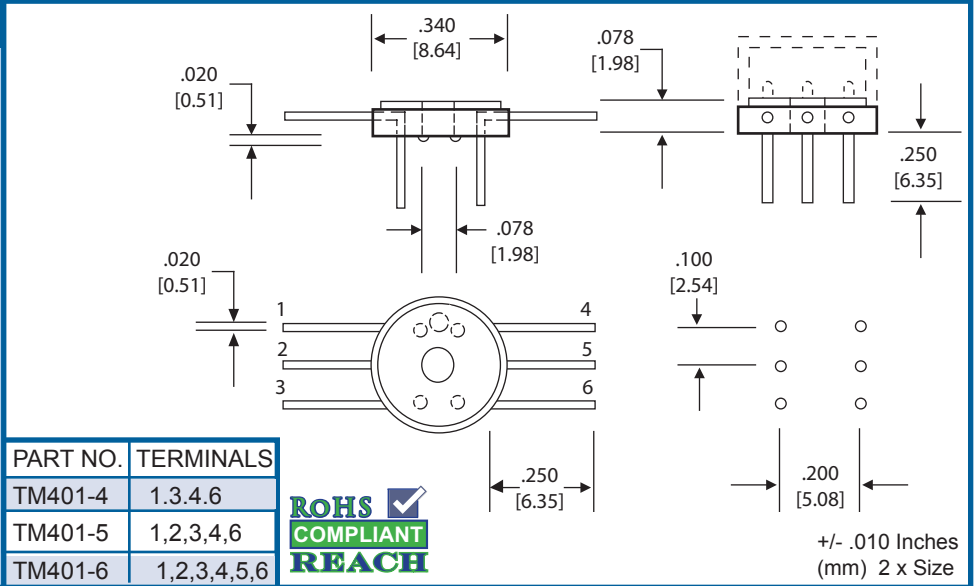
### TM401 SERIES

**Material:** DAP (Green)  
**UL Rating:** UL94-VO, Class F  
**Terminals:** Brass, Nickel Flash  
 100% Tin Plated  
**Solderability:** Per MIL-STD-202  
 Method 208

**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays  
 on page 57.

**Application:** This series is suitable for  
 components and wound toroids up to  
 .340 inches in diameter. Potting cup  
 PC401 is available for encapsulation.  
 See below. (sold separately).

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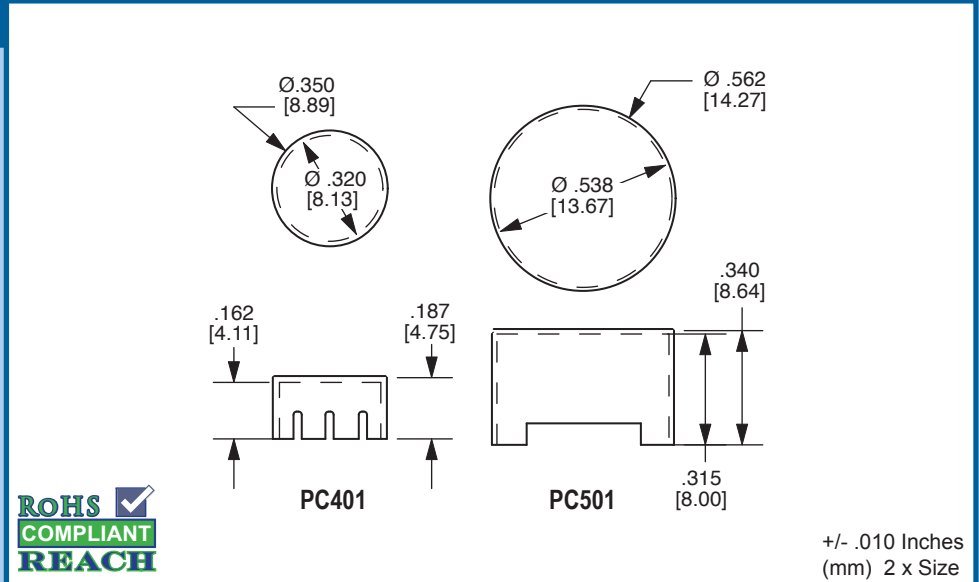


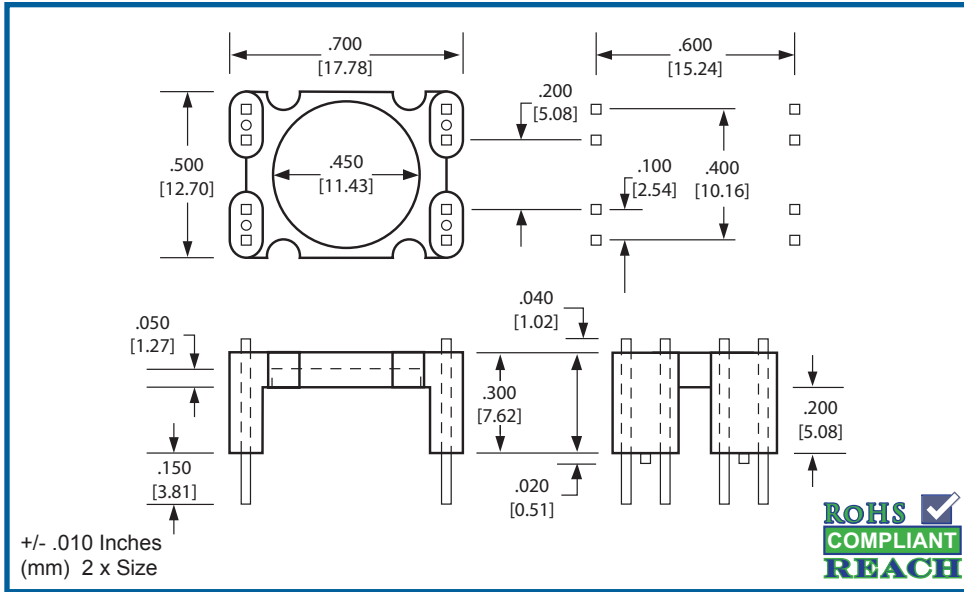
### CUPS

**Material:** DAP (Green)  
**UL Rating:** UL94-VO, Class F  
**Package Method:** Bulk in Poly Bags

**Application:** For potting and sealing  
 toroids and components on the TM401  
 and TM501 Series toroid mounts. The  
 cups protect the component and their  
 connections, and facilitate part number  
 marking. All cups are sold separately.

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**TM450-6**

**Material:** PET (Black)

**UL Rating:** UL94-VO, Class F

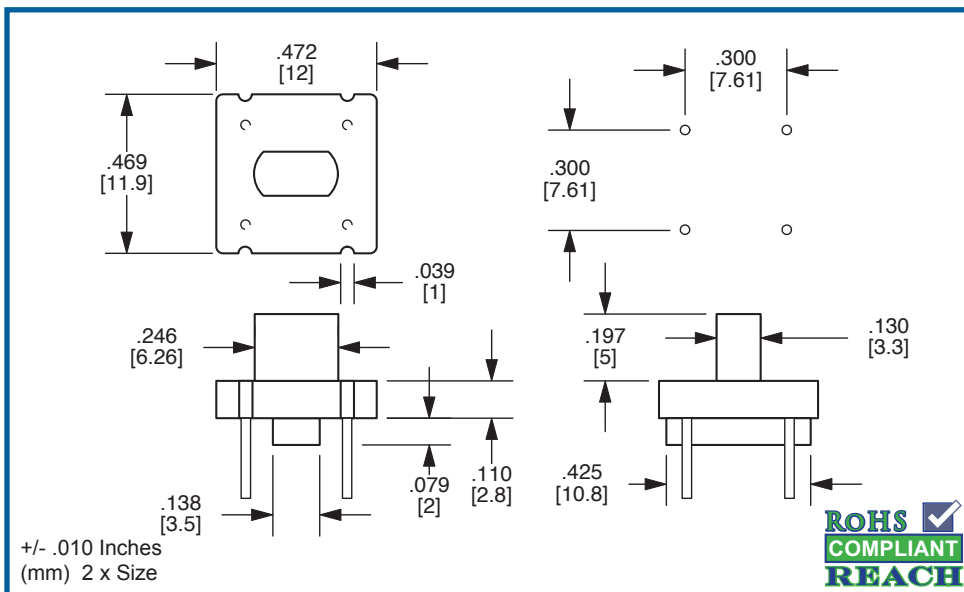
**6 Terminals:** Phospor Bronze  
.025 (.63mm) x .025 (.63mm), 100% Tin Plate.

**Solderability:** Per MIL-STD-202 Method 208

**Package Method:** Bulk in Poly Bags  
See RoHS compliant PVC packaging tray options on page 57.

**Application:** For low profile horizontal mounting of wound toroids up to .450 inches in diameter. Ideal for transformer applications.

Made in our China Factory



**TM470-4**

**Material:** PH3 (Black)

**UL Rating:** UL94-VO, Class F

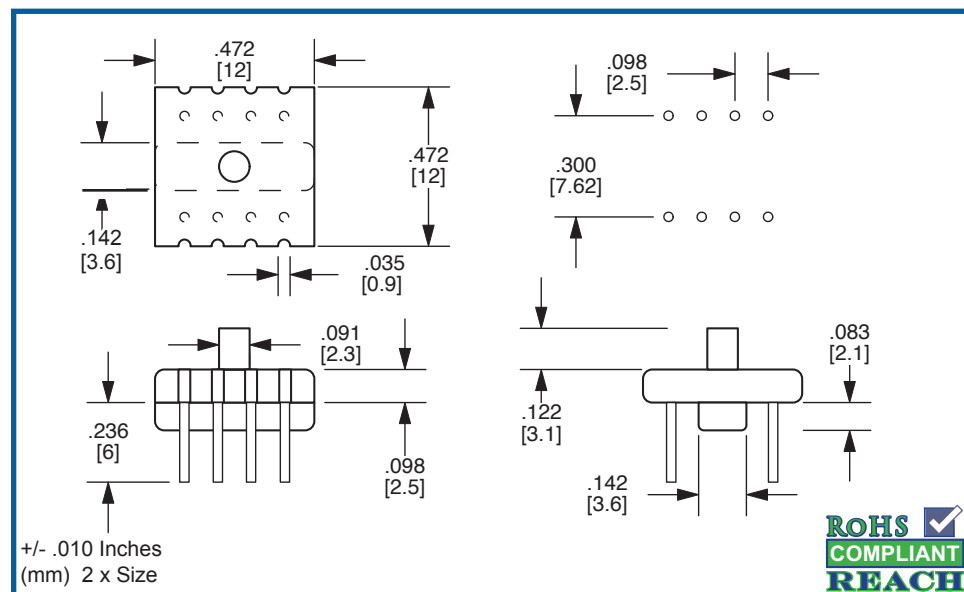
**6 Terminals:** .028 [7mm] CP Wire  
100% Tin Plate

**Solderability:** Per MIL-STD-202 Method 208

**Package Method:** Bulk in Poly Bags  
See RoHS compliant PVC packaging trays on page 57.

**Application:** For horizontal mounting of transformer and inductors using a wound toroid up to .470 inches in diameter. The center post is ideal for winding separation in common mode applications.

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**TM475-8**

**Material:** PH3 (Black)

**UL Rating:** UL94-VO, Class F

**8 Terminals:** .028 [7mm] CP Wire  
100% Tin Plate

**Solderability:** Per MIL-STD-202 Method 208

**Package Method:** Bulk in Poly Bags  
See RoHS compliant PVC packaging trays on page 57.

**Application:** For horizontal mounting of transformer and inductor applications using a wound toroid up to .475 inches in diameter.

Made in our China Factory



Ceramic Headers

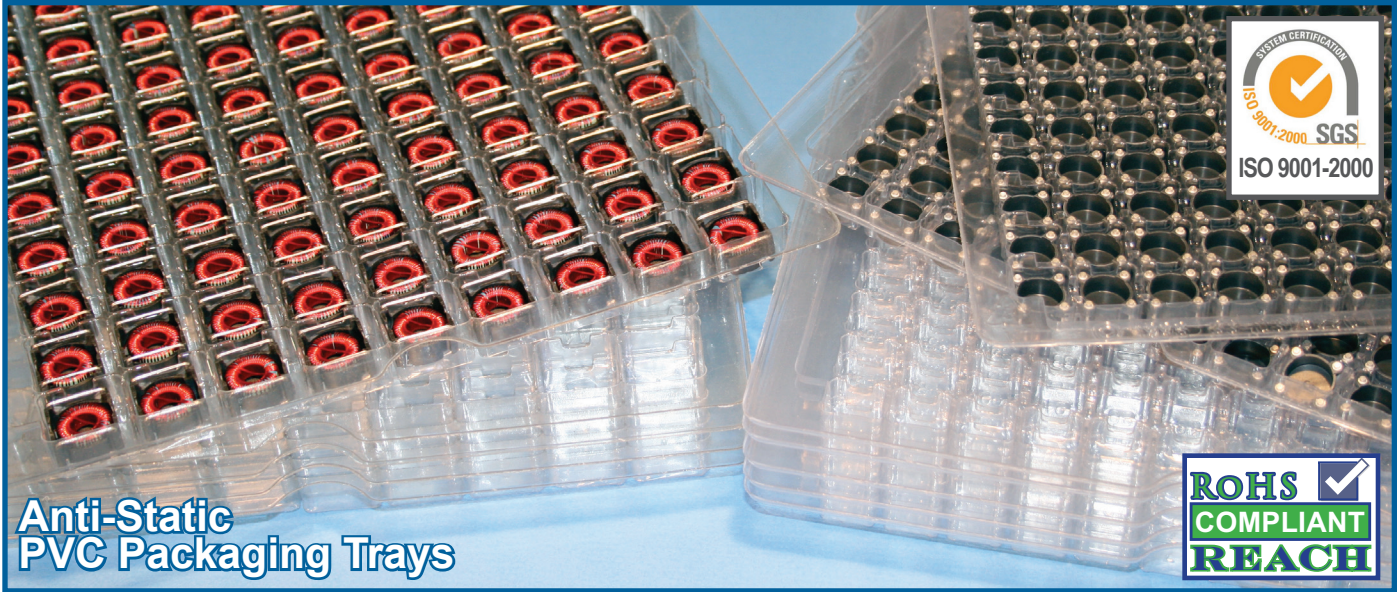
DR Series

Surface Mount

Horizontal

Vertical

Trays



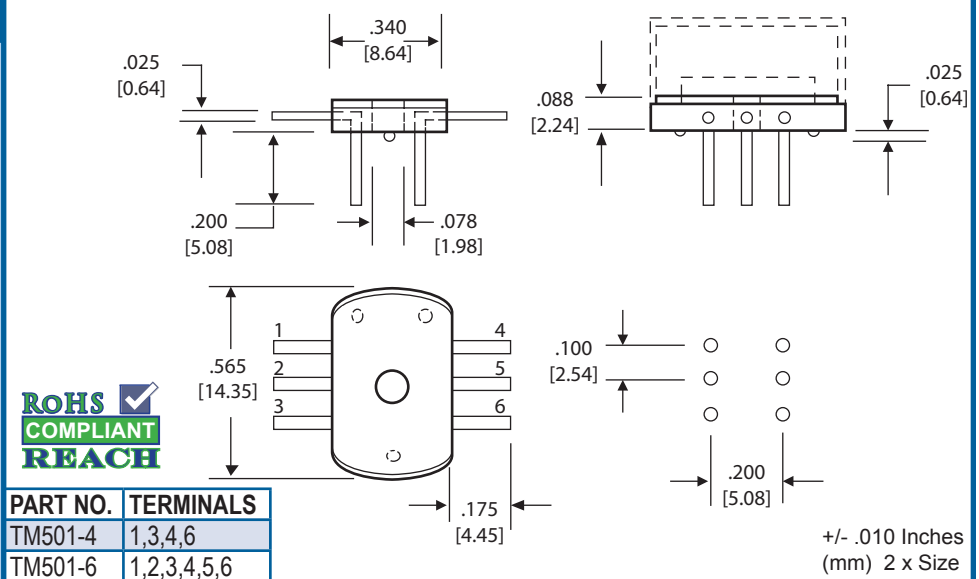
## Anti-Static PVC Packaging Trays

### TM501 SERIES

**Material:** DAP (Green)  
**UL Rating:** UL94-VO, Class F  
**Terminals:** Brass, Nickel Flash  
 100% Tin Plated  
**Solderability:** Per MIL-STD-202  
 Method 208

**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging tray  
 options on page 57.

**Application:** An industry standard for  
 20 years, this series is suitable for compo-  
 nents and wound toroids up to .550  
 inches. Potting cup PC501 is available  
 for encapsulation (sold separately). See  
 page 36.

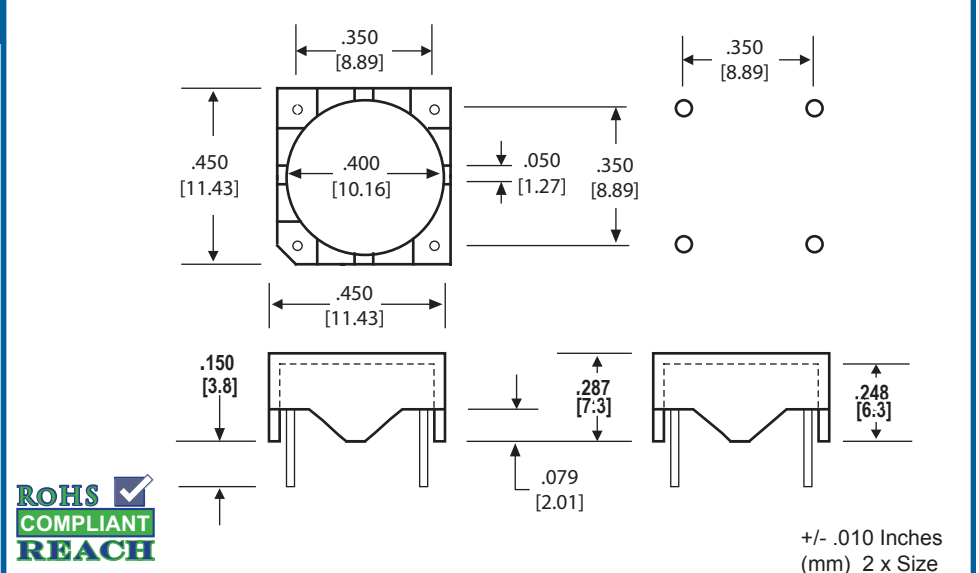


### TM507-4

**Material:** DAP4 (Black)  
**UL Rating:** UL94-VO, Class F  
**4 Terminals:** Brass Wire  
 .025 (.63mm) x .025 (.63mm). 100% Tin Plate.  
**Solderability:** Per MIL-STD-202  
 Method 208

**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging tray  
 options on page 57.

**Application:** For enclosed horizontal  
 mounting of wound toroids up to .400  
 inches in diameter.



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**Additional Products**  
**Transformer Bobbins**  
**Pressure Sensitive Insulation Tape**

Ceramic Headers

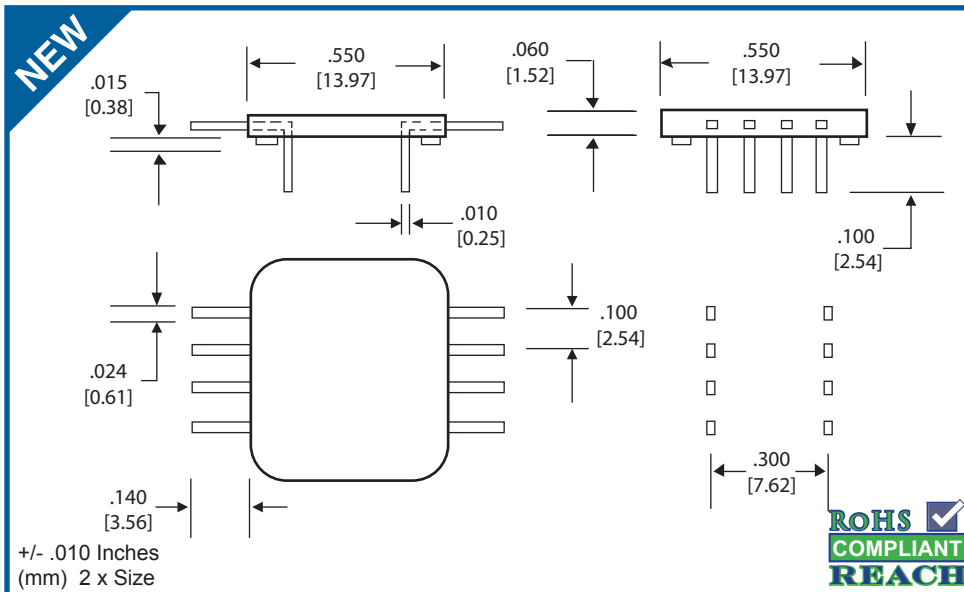
DR Series

Surface Mount

Horizontal

Vertical

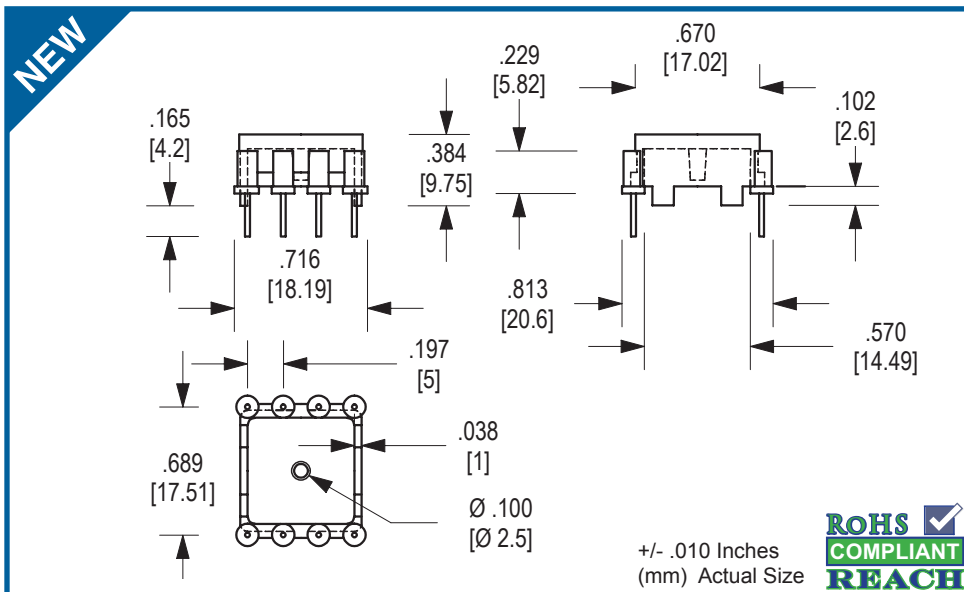
Trays



**TM551-8**

**Material:** DAP4 (Black)  
**UL Rating:** UL94-VO, Class F  
**8 Terminals:** Phosphorus Bronze .020 (.51mm) x .010 (.25mm). 100% Tin Plate.  
**Solderability:** Per MIL-STD-202 Method 208  
**Package Method:** Bulk in Poly Bags See RoHS compliant PVC packaging trays on page 57.  
**Application:** For horizontal mounting of components and wound toroids up to .550 inches in diameter. TM550-8 with Alloy 42 terminals is still available.

Made in our China Factory



**TM595-8**

**Material:** Phenolic PH3 (Black)  
**UL Rating:** UL94-VO, Class F  
**8 Terminals:** CP Wire .024 [6.0mm] Diameter. 100% Tin Plated  
**Solderability:** Per MIL-STD-202 Method 208  
**Package Method:** Bulk in Poly Bags See RoHS compliant PVC packaging trays, or tape and reel options on page 57.  
**Application:** For horizontal mounting of components and wound toroids up to .570 inches in diameter.

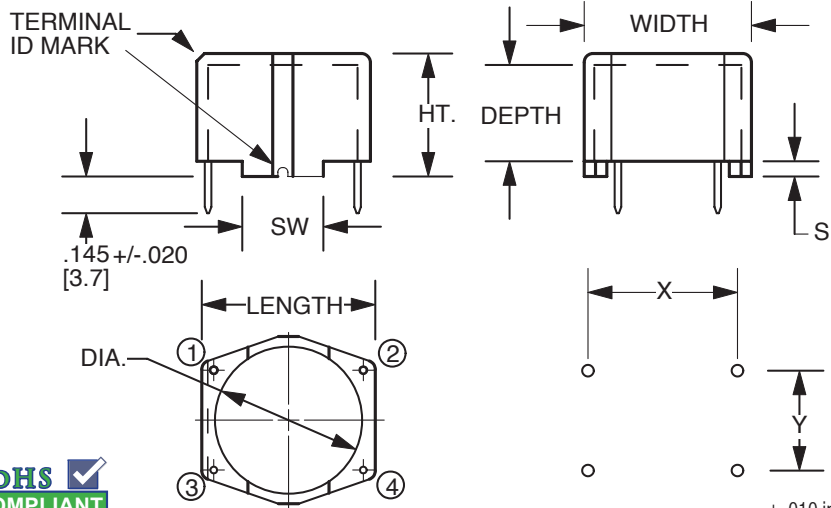
Made in our China Factory

## HTC SERIES

**Material:** GFN (Natural)  
**UL Rating:** UL94-VO, Class F  
**Terminals:** CP Wire  
 .026 X .026  
 100% Tin Plated  
**Solderability:** Per MIL-STD-202  
 Method 208

**Package Method:** Bulk in Poly Bags  
**Application:** Enclosed horizontal mounting of toroidal inductors and transformers up to 1.19 inches in diameter. Ideal for applications requiring potting, part number marking and automatic pick and place.

Made in our China factory



± .010 inches  
 [mm] Not to Scale

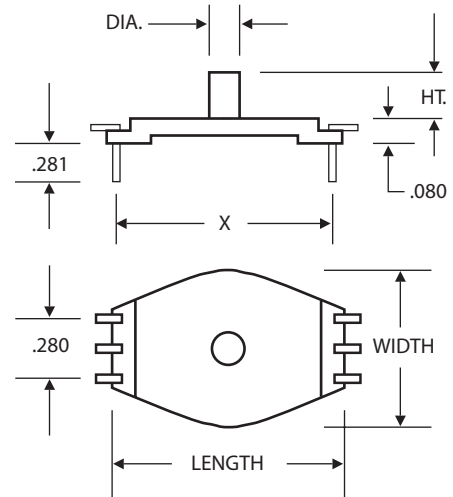
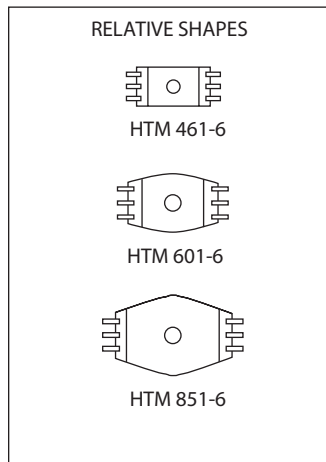
PART NO.	LENGTH	WIDTH	HT.	DEPTH	DIA.	SW	S	X	Y
HTC583-0	.689	.689	.492	.394	.602	.315	.060	.590	.394
HTC583-4	[17.5]	[16.9]	[12.50]	[10.0]	[15.3]	[8.0]	[1.5]	[15.00]	[10.00]
HTC764-0	.886	.886	.590	.472	.819	.405	.077	.787	.492
THC764-4	[22.5]	[22.5]	[15.0]	[10.0]	[20.8]	[10.3]	[2.0]	[20.0]	[12.5]
HTC965-0	1.080	1.080	.690	.550	.972	.472	.098	.984	.590
HTC965-4	[27.5]	[27.5]	[17.5]	[14.0]	[24.7]	[12.0]	[2.5]	[25.00]	[15.00]
HTC1208-0	1.300	1.300	.787	.695	1.190	.846	.060	1.181	.590
HTC1208-4	[33.0]	[33.0]	[20.0]	[17.65]	[30.23]	[21.5]	[1.52]	[30.00]	[15.00]

## HTM SERIES

**Material:** GFN (Natural)  
**UL Rating:** UL94-VO, Class F  
**6 Terminals:** Brass Nickel Flash  
 100% Tin Plated  
**Solderability:** Per MIL-STD-202  
 Method 208

**Package Method:** Bulk in Polybags  
**Application:** Low profile horizontal mounting of wound toroids from .400 to .850 inches in diameter. Each size is available with or without a center post.

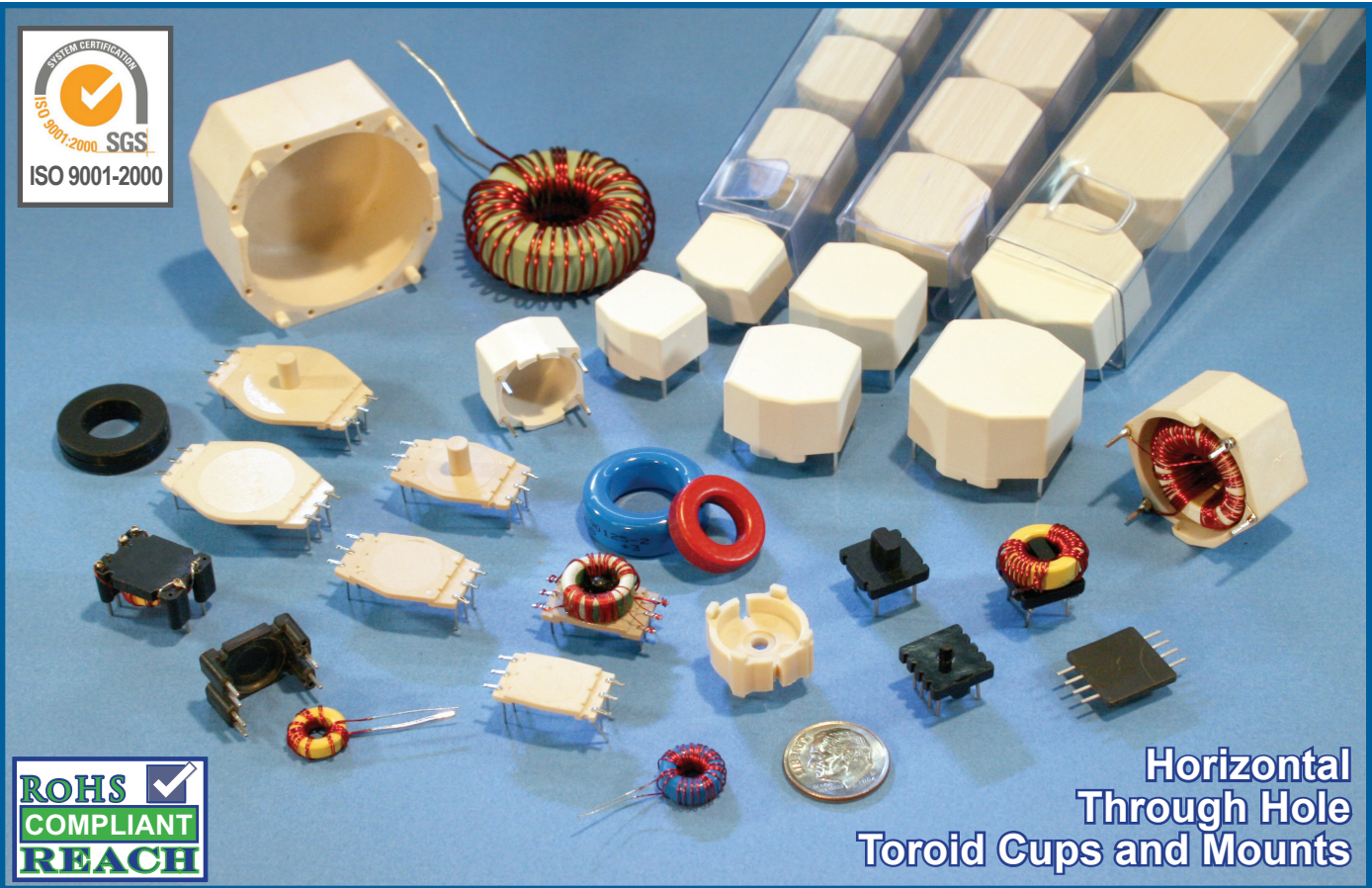
Made in our China Factory



± .010 inches  
 [mm] Not to Scale

PART NO.	LENGTH	WIDTH	HT.	DIA.	X	CORE SIZES	PACKING TRAY
HTM 460-6	.720 [18.28]	.460 [11.68]	.000	.000	.638 [16.20]	up to .500 inches	TY65-100-A
HTM 461-6	.720 [18.28]	.460 [11.68]	.163 [4.14]	.120 [3.04]	.638 [16.20]	up to .500 inches	TY65-100-A
HTM 600-6	.937 [23.79]	.600 [15.24]	.000	.000	.848 [21.53]	up to .750 inches	TY85-116-A
HTM 601-6	.937 [23.79]	.600 [15.24]	.250 [6.35]	.156 [3.96]	.848 [21.53]	up to .750 inches	TY85-116-A
HTM 850-6	1.208 [30.68]	.850 [21.59]	.000	.000	1.130 [28.70]	up to 1.00 inches	TY122-140-A
HTM 851-6	1.208 [30.68]	.850 [21.59]	.250 [6.35]	.156 [3.96]	1.130 [28.70]	up to 1.00 inches	TY122-140-A





## Horizontal Through Hole Toroid Cups and Mounts

Ceramic Headers

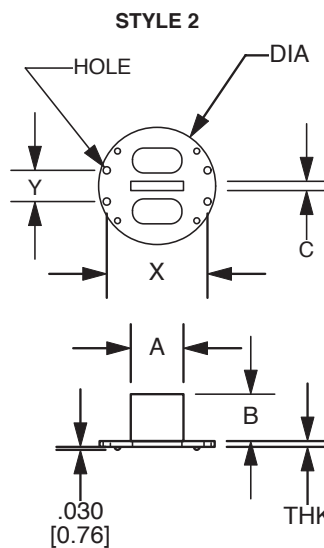
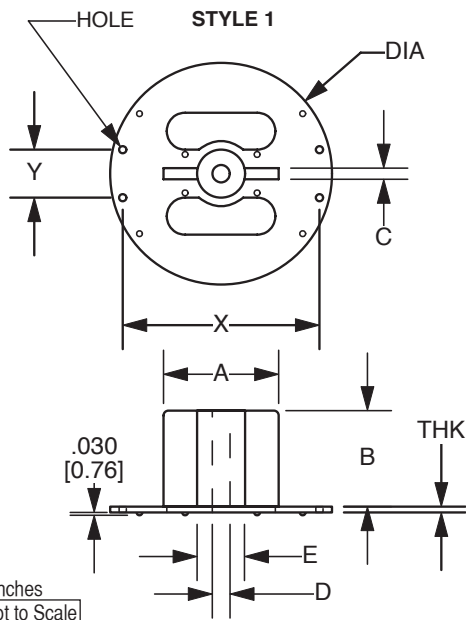
DR Series

Surface Mount

Horizontal

Vertical

Trays



± .010 inches [mm] Not to Scale



### TCM SERIES

**Material:** PET (Black)  
**UL Rating:** UL94-VO, Class F  
**4 Terminals:** Self Terminating  
**Package Method:** Bulk in Polybags

**Application:** For horizontal mounting of toroids utilizing the toroids winding leads to terminate to the PCB. The toroid's leads pass through the holes to be soldered to the PCB. The center post is designed for use in common mode applications where winding separation is important. Style 1 can use a bolt to hold the assembly to the PCB. (Sold separately)

**M185:** Nylon #10 hex nut  
**M187:** Nylon 10-32 x 1.5 inch bolt

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Part No.	Dia.	A	B	C	D	E	THK	HOLES	X	Y	Style
TCM100-04	1.00 [25.4]	.457 [11.6]	.575 [14.6]	.085 [2.2]	—	—	.048 [1.2]	.053 [1.3]	.825 [20.9]	.300 [7.6]	2
TCM120-04	1.21 [30.7]	.554 [14.1]	.490 [12.4]	.093 [2.4]	—	—	.062 [1.6]	.064 [1.6]	1.050 [26.7]	.330 [8.4]	2
TCM170-04	1.70 [43.2]	.862 [21.9]	.800 [20.3]	.120 [3.1]	.200 [5.1]	.440 [11.2]	.062 [1.6]	.064 [1.6]	1.40 [35.6]	.500 [12.7]	1
TCM230-04	2.31 [58.7]	1.20 [30.5]	1.00 [25.4]	.120 [3.1]	.200 [5.1]	.500 [12.7]	.062 [1.6]	.064 [1.6]	2.050 [52.1]	.500 [12.7]	1



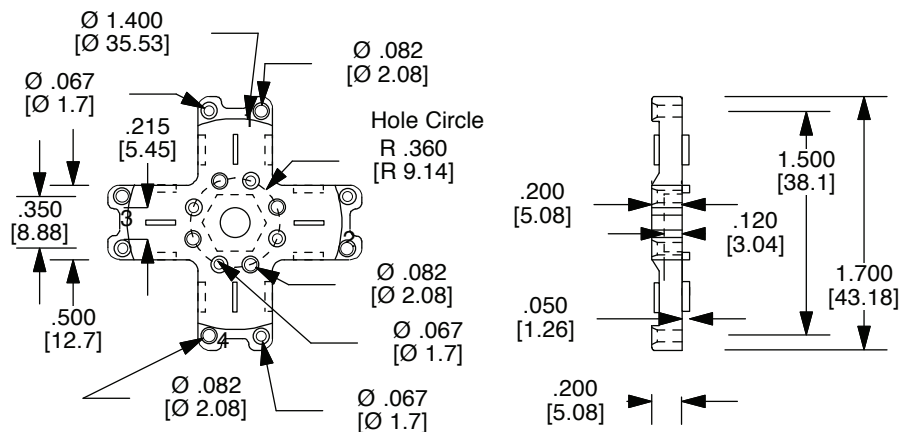
## Large Toroids Mounting Solutions

### XM1300-08

**Material:** PET (Black)  
**UL Rating:** UL94-VO, Class F  
**8 Terminals:** Self Terminating  
**Package Method:** Bulk in Polypags

**Application:** The X-Mount is for horizontal mounting of larger toroids up to 1.50 inches in diameter. The .067" (#12AWG) or .082" (#14 AWG) holes facilitate easy assembly and position the toroids winding wire for connection to the PCB. The HTS toroid spacer (page 43) can be used in common mode applications to attach the toroid to the X-Mount or to the PCB. The TR toroid retainer (page 43) can also be used to attach the toroid to the X-mount or to the PCB.

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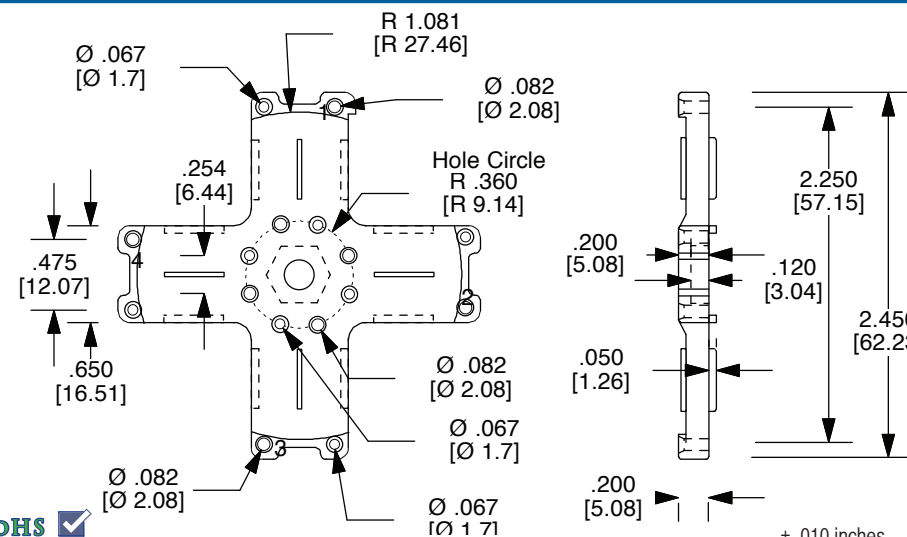
$\pm .010$  inches  
 [mm] [Not to Scale]

### XM2200-08

**Material:** PET (Black)  
**UL Rating:** UL94-VO, Class F  
**8 Terminals:** Self Terminating  
**Package Method:** Bulk in Polypags

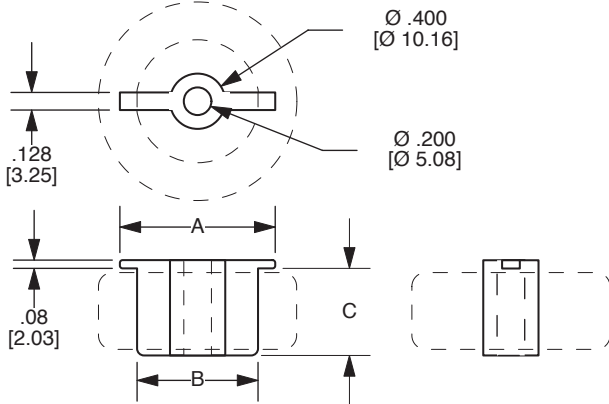
**Application:** The X-Mount is for horizontal mounting of larger toroids up to 2.20 inches in diameter. The .067" (#12AWG) or .082" (#14 AWG) holes facilitate easy assembly and position the toroids winding wire for connection to the PCB. The HTS toroid spacer (page 43) can be used in common mode applications to attach the toroid to the X-Mount or to the PCB. The TR toroid retainer (page 43) can also be used to attach the toroid to the X-mount or to the PCB.

Made in our China Factory



$\pm .010$  inches  
 [mm] [Not to Scale]

## HTS SERIES



**Material:** GFN (Natural)  
**UL Rating:** UL94-VO, Class F  
**Package Method:** Bulk in Polybags  
**Application:** These horizontal spacers are for common mode chokes requiring voltage isolation. The hole through the center will allow a 10-32 bolt to secure the coil to a PCB, chassis, or to horizontal mounting platforms TM1850 and TM2300 (page 44) or XM Series (page 42).

**M185:** Nylon #10 hex nut  
**M187:** Nylon 10-32 x 1.5 inch bolt (Sold separately)

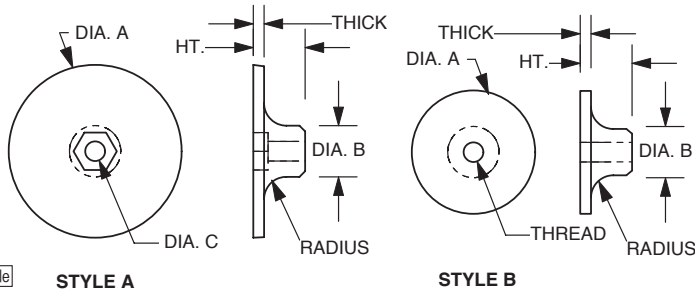
Made in our China Factory

± .010 inches [mm] [Not to Scale]



Part No.	A	B	C	DIA.	HOLE	BOLT SIZE
HTS89-07	1.125 [28.6]	.880 [22.3]	.485 [12.3]	.400 [10.2]	.200 [5.1]	10-32
HTS73-01	1.020 [25.9]	.715 [18.2]	.900 [22.9]	.400 [10.2]	.200 [5.1]	10-32
HTS130-10	1.750 [44.5]	.525 [13.3]	.525 [13.3]	.400 [10.2]	.200 [5.1]	10-32

## TR SERIES



± .010 inches [mm] [Not to Scale]

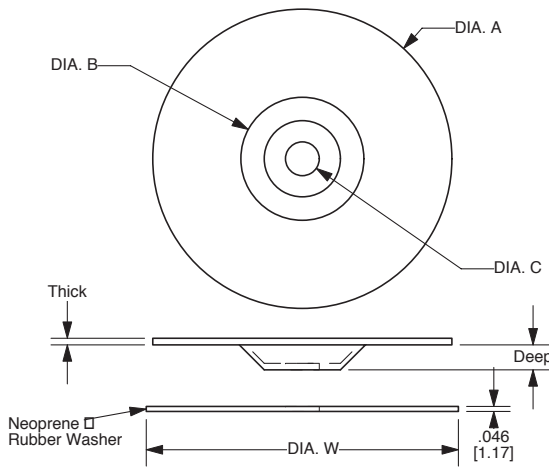


PART No.	DIA. A	DIA. B	HT.	THICK	RAD.	DIA. C	THREAD	BOLT (& Nut)	MAT'L
TR60-B	.615	.250	.250	.036	.250	----	6-32	M190	Zytel
TR80-B	.812	.250	.255	.050	.250	----	6-32	M190	Zytel
TR100-B	1.000	.375	.375	.050	.187	----	10-32	M187	Zytel
TR130-A	1.250	.425	.500	.085	.225	.200	----	M187 & M185	Ryton
TR200-A	1.750	.525	.525	.110	.225	.200	----	M187 & M185	Ryton

**Materials:** PET (Black)  
 Zytel FR50 (Natural)  
**UL Rating:** UL94-VO, Class F  
**Package Method:** Bulk in Polybags  
**Application:** Toroid Retainers are designed to bolt toroids to a PCB, chassis, or to mounting platforms TM1850 and TM2300 (page 44) or XM Series (page 42). Series A Toroid Retainers are designed to use a 10-32 bolt and nut, series B are threaded and require a bolt. (All sold separately).

**M185:** Nylon #10 hex nut  
**M187:** Nylon 10-32 x 1.5 inch bolt  
**M190:** Nylon 6-32 x 1.0 inch bolt

## LARGE TR SERIES



± .010 inches [mm] [Not to Scale]



Part No.	Dia. A	Dia. B	Dia. C	Thick	Deep	Mat'l
TR275-C	2.75 [69.8]	1.13 [28.7]	.310 [7.8]	.060 [1.5]	.260 [6.6]	Steel
TR350-C	3.50 [88.9]	1.25 [30.4]	.310 [7.8]	.060 [1.5]	.280 [7.1]	Steel
TR450-C	4.38 [111.2]	1.38 [35.0]	.310 [7.8]	.080 [2.0]	.300 [7.6]	Steel

**Material:** Steel  
 Electro Zinc Plated  
**Application:** The Toroid Retainer series is designed to bolt toroids from 2.0 to 6.0 inches in diameter to a circuit board or assembly chassis. Neoprene Rubber washers are designed to both insulate and protect the toroid from the pressure of the Retainer. Neoprene washers are sold separately. Steel Toroid Retainers are designed to be used with a Stainless Steel 5/16 bolt nut, and washer, sold separately.

Ceramic Headers

DR Series

Surface Mount

Horizontal

Vertical

Trays

## TM1850-016

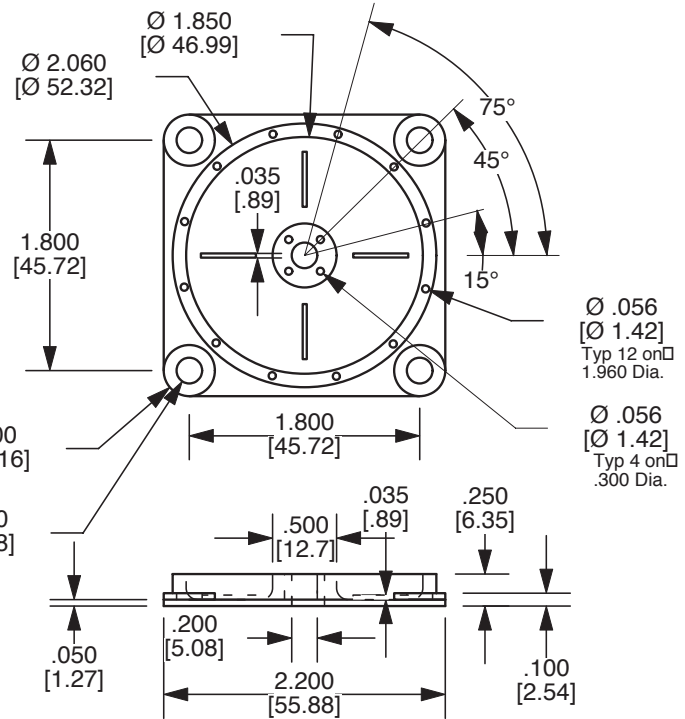
**Material:** PET (Black)  
**Rating:** UL 94-VO, Class N

**16 Terminals:** Self Terminating  
**Package Method:** Bulk in Polybags

**Application:** For mounting wound toroids up to 1.85 inches in diameter. The toroids winding leads pass through holes in the bottom of the mount and are used to make the connection to the PCB. Four #10 bolt holes allow mounting to a chassis or on "stilts" above a crowded printed circuit board. The bolt holes can also be used to connect "flying leads".

The reservoir portion of the mount will hold epoxy or RTP used to attach the coil.

Made in our China factory



± .010 inches  
 [mm] [Not to Scale]

## TM2300-016

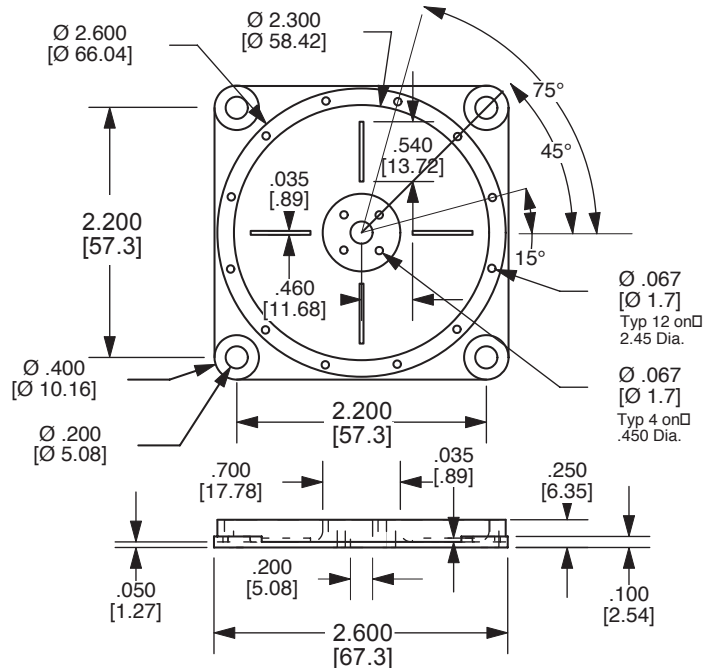
**Material:** PET (Black)  
**Rating:** UL 94-VO, Class N

**16 Terminals:** Self Terminating  
**Package Method:** Bulk in Polybags

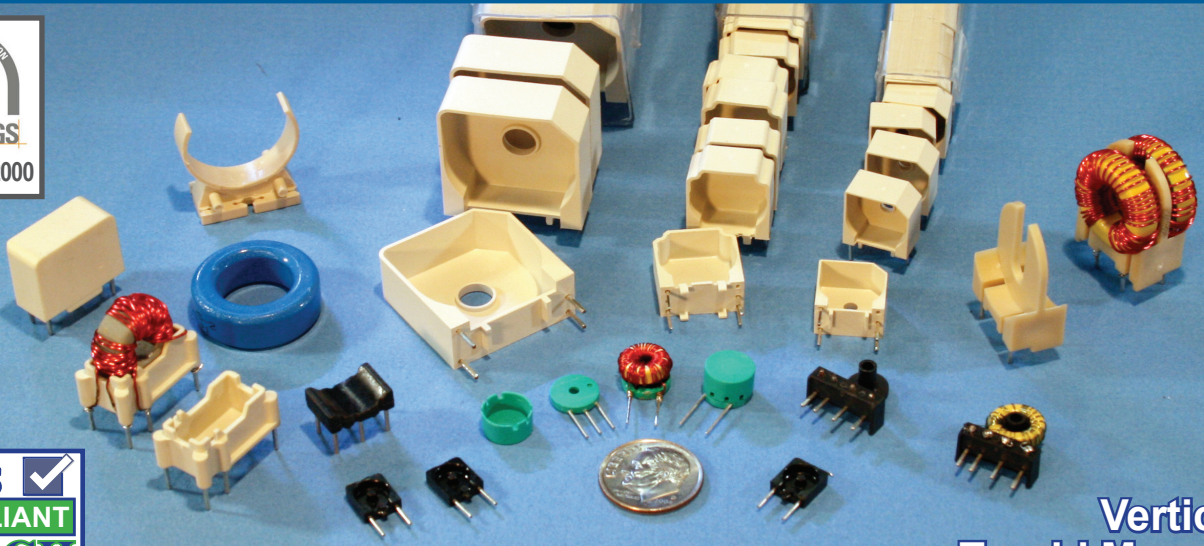
**Application:** For mounting wound toroids up to 2.30 inches in diameter. The toroids winding leads pass through holes in the bottom of the mount and are used to make the connection to the PCB. Four #10 bolt holes allow mounting to a chassis or on "stilts" above a crowded printed circuit board. The bolt holes can also be used to connect "flying leads".

The reservoir portion of the mount will hold epoxy or RTP used to attach the coil.

Made in our China factory



± .010 inches  
 [mm] [Not to Scale]



## Vertical Toroid Mounts

Ceramic Headers

DR Series

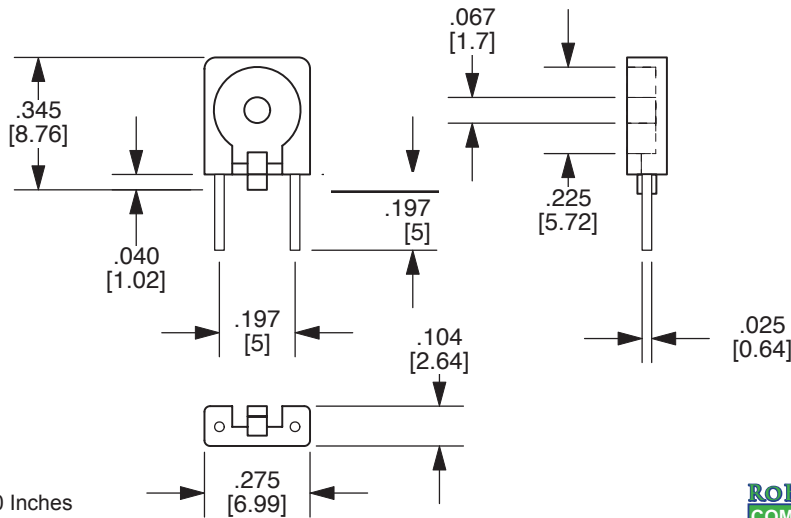
Surface Mount

Horizontal

Vertical

Trays

### VTM225-2



+/- .010 Inches (mm) 2 x Size



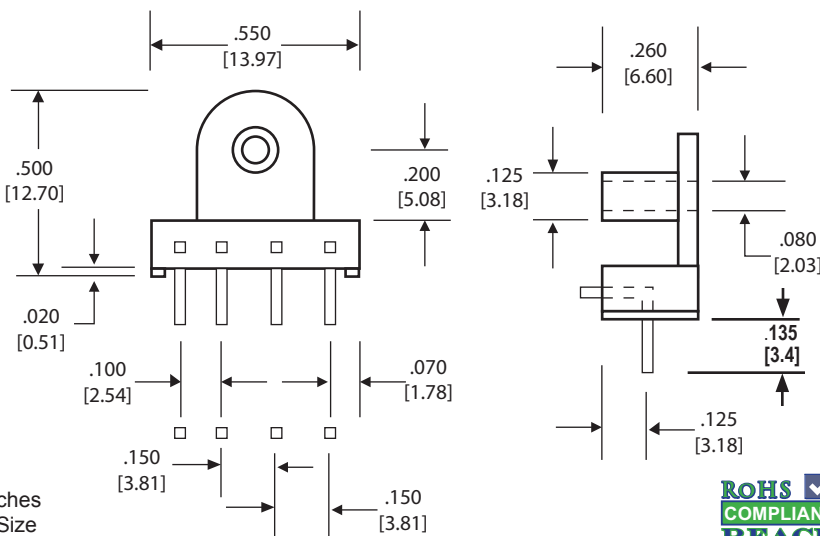
- Material:** PH3 (Black)
- UL Rating:** UL94-VO, Class F
- 2 Terminals:** CP Wire  
100% Tin Plated
- Solderability:** Per MIL-STD-202 Method 208

**Package Tray (HIPS):** Bulk in Poly Bags  
Fits tray TY45x70-B (150/Tray)  
See RoHS compliant PVC packaging trays on page 57.

**Application:** For vertical inductor applications using a wound inductor up to .225 inches in diameter.

Made in our China Factory

### VTM370-4



+/- .010 Inches (mm) 2 x Size



- Material:** PET (Black)
- UL Rating:** UL94-VO, Class F
- 4 Terminals:** Phos Bronze  
.025 (.63mm) x .025 (.63mm), 100% Tin Plate.
- Solderability:** Per MIL-STD-202 Method 208

**Package Tray (HIPS):** TY74x77-A (100/Tray)  
See RoHS compliant PVC packaging trays on page 57.

**Application:** For vertical mounting of wound toroids up to .370 inches in diameter in transformer and current sensing applications.

Made in our China Factory

Ceramic Headers

DR Series

Surface Mount

Horizontal

Vertical

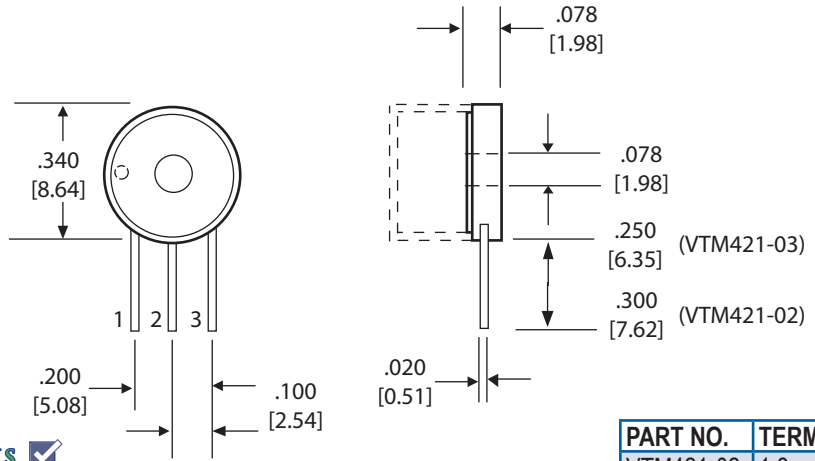
Trays

## VTM421-02 & VTM421-03

**Material:** DAP4  
**UL Rating:** UL94-VO, Class F  
**Terminals:** Brass Wire  
 100% Tin Plated  
**Solderability:** Per MIL-STD-202  
 Method 208

**Package Tray (HIPS):** TY45x70-B (150/Tray)  
 See RoHS compliant PVC packaging trays on page 57.

**Application:** For vertical mounting of wound toroids up to .340 inches. Potting cup PC401 is available for encapsulation of the components on the VTM421 series (sold separately). See page 36.



+/- .010 Inches  
(mm) 2 x Size

PART NO.	TERMINALS
VTM421-02	1,3
VTM421-03	1,2,3

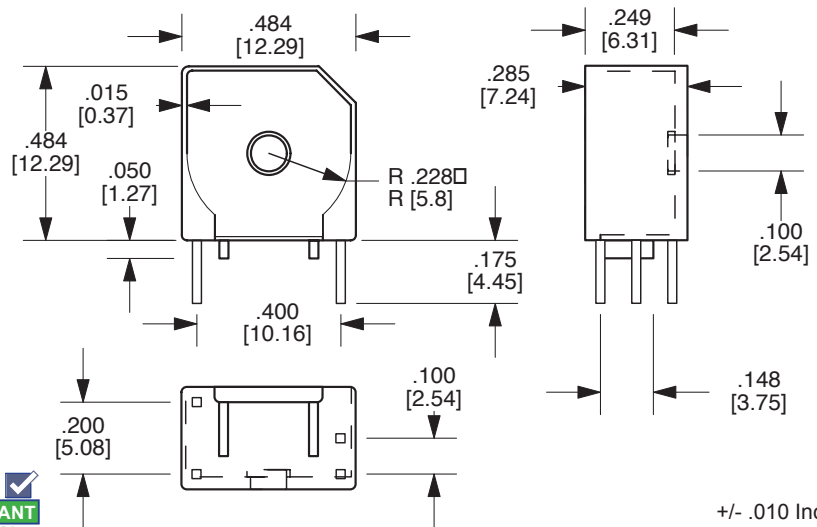
## VTM455-4

**Material:** GFN (Natural)  
**UL Rating:** UL94-VO, Class F  
**4 Terminals:** Brass Wire  
 .020 (.5mm) x .020 (.5mm). 100% Tin Plate.  
**Solderability:** Per MIL-STD-202  
 Method 208

**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays on page 57.

**Application:** For vertical mounting of wound toroids up to .455 inches in diameter in inductor, transformer and current sensor applications.

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+/- .010 Inches  
(mm) 2 x Size

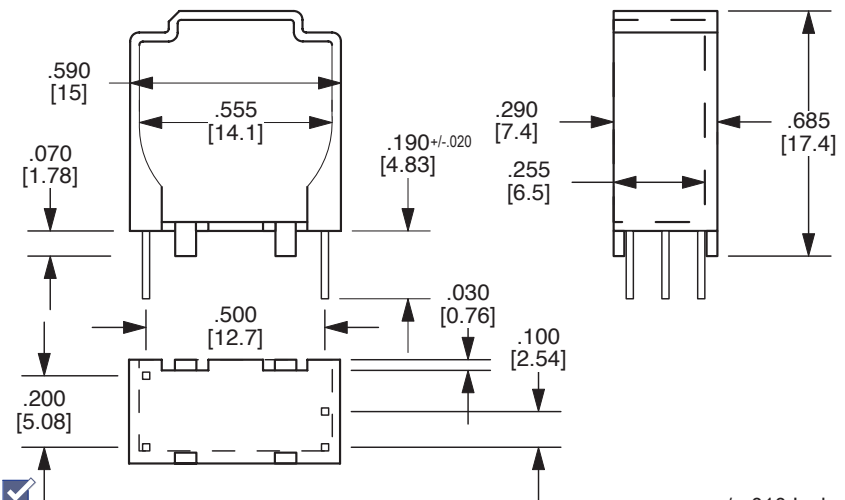
## VTM555-4

**Material:** GFN (Natural)  
**UL Rating:** UL94-VO, Class F  
**4 Terminals:** Brass Wire  
 .020 (.5mm) x .020 (.5mm). 100% Tin Plate.  
**Solderability:** Per MIL-STD-202  
 Method 208

**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays on page 57.

**Application:** For vertical mounting of wound toroids up to .555 inches in diameter.

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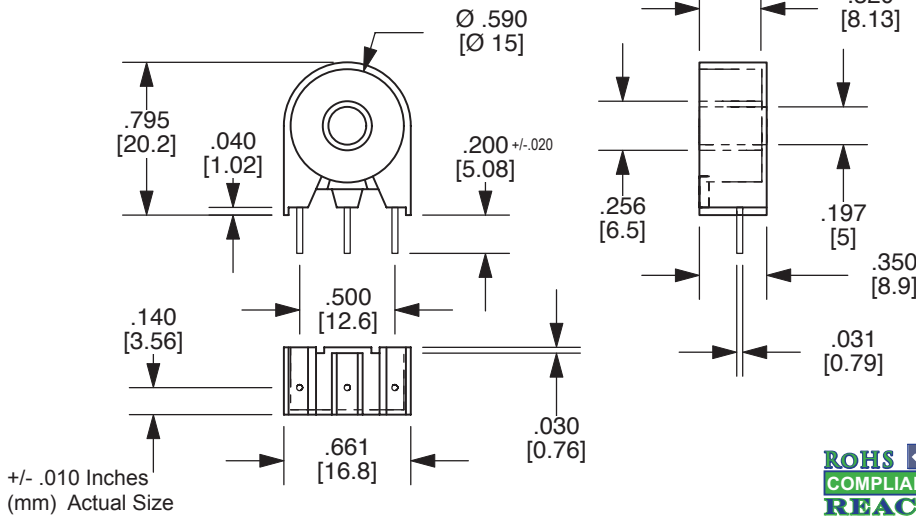


+/- .010 Inches  
(mm) 2 x Size

### VTM590-3

**Material:** PBT (Black)  
**UL Rating:** UL94-VO, Class F  
**3 Terminals:** CP Wire  
 100% Tin Plate  
**Solderability:** Per MIL-STD-202  
 Method 208  
**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays,  
 or tape and reel options on page 57.  
**Application:** For vertical mounting  
 of wound toroids up to .590 inches  
 in diameter in inductor and current sensor  
 applications.

Made in our China Factory

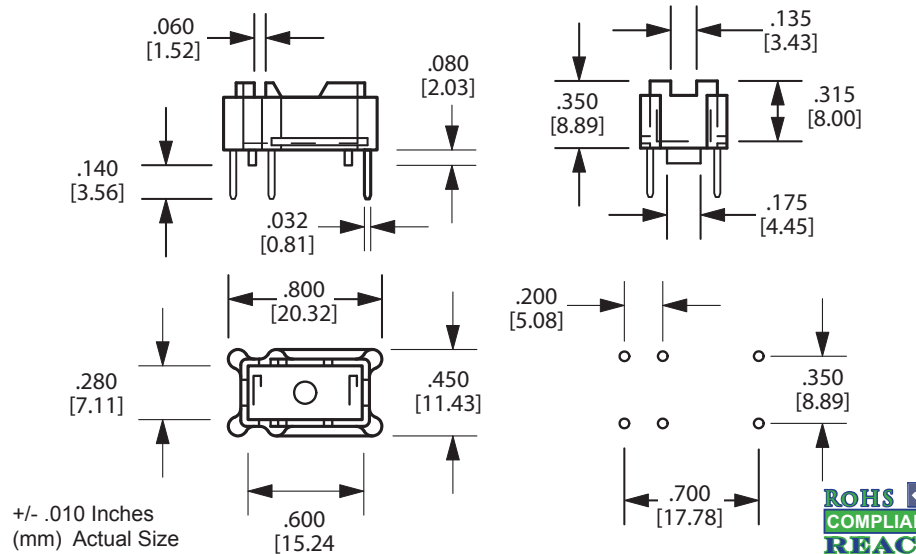


+/- .010 Inches  
(mm) Actual Size

### VTM600-6

**Material:** GFN (Natural)  
**UL Rating:** UL94-VO, Class F  
**6 Terminals:** CP Wire  
 100% Tin Plate  
**Solderability:** Per MIL-STD-202  
 Method 208  
**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays  
 on page 57.  
**Application:** For vertical mounting of  
 wound toroids up to .600 inches in diam-  
 eter in transformer, current sensing, and  
 gate drive transformer applications.

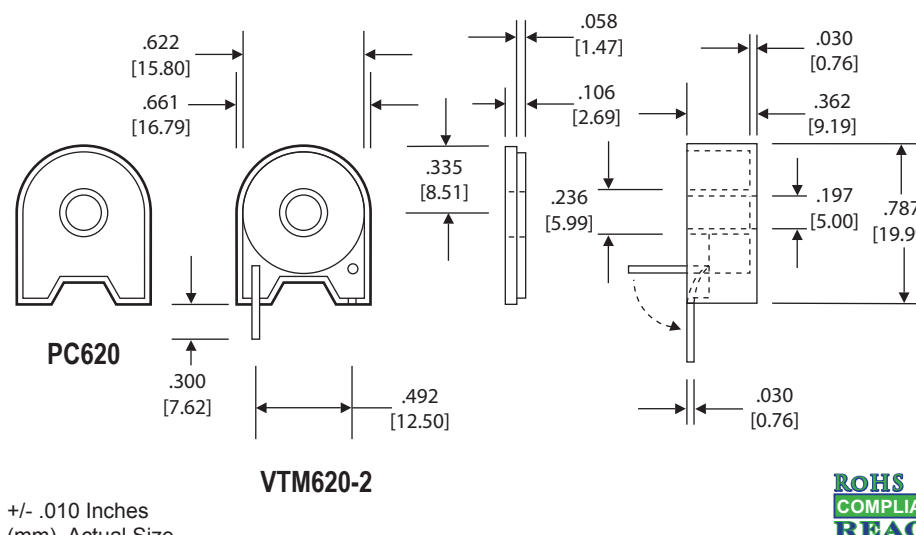
Made in our China Factory



+/- .010 Inches  
(mm) Actual Size

### VTM620-2

**Material:** PBT (Black)  
**UL Rating:** UL94-VO, Class F  
**2 Terminals:** CP Wire  
 100% Tin Plate  
**Solderability:** Per MIL-STD-202  
 Method 208  
**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays,  
 on page 57.  
**Application:** For vertical mounted inductors  
 or current sensors. Terminals are shipped in  
 the horizontal position to facilitate toroid lead  
 connection. Terminals are then moved to the  
 vertical position for circuit board insertion. Op-  
 tional snap-on cover PC620 is available .



+/- .010 Inches  
(mm) Actual Size

Ceramic Headers

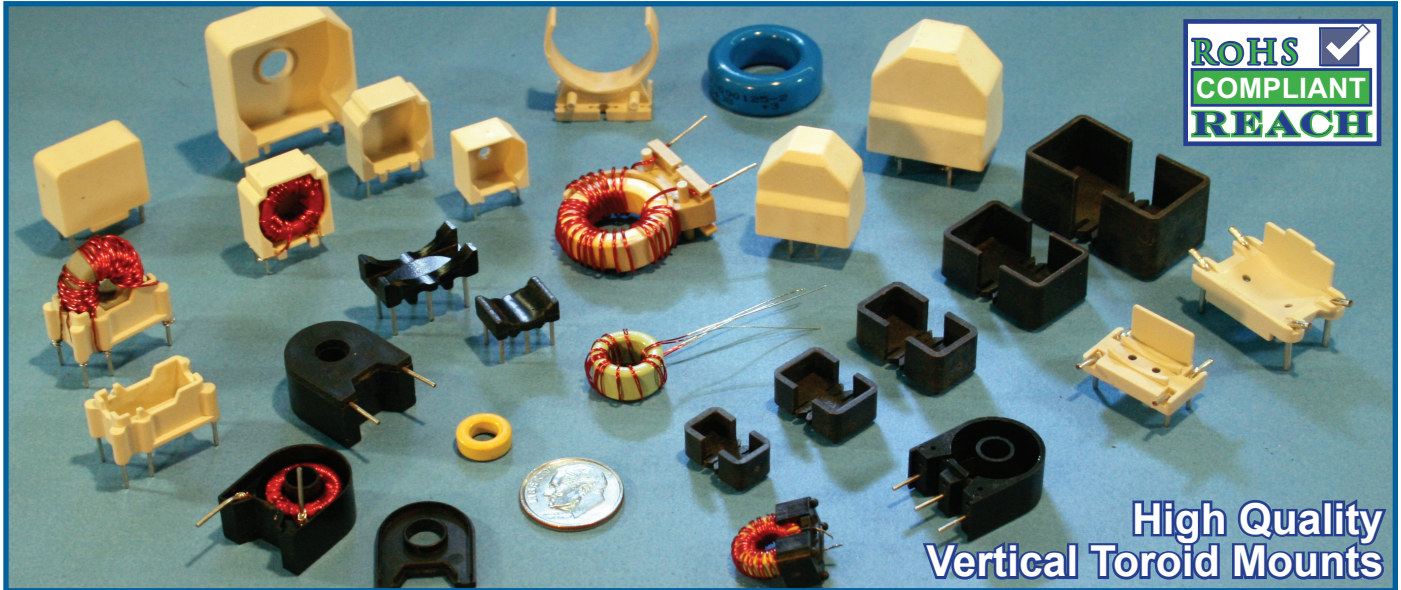
DR Series

Surface Mount

Horizontal

Vertical

Trays



High Quality Vertical Toroid Mounts

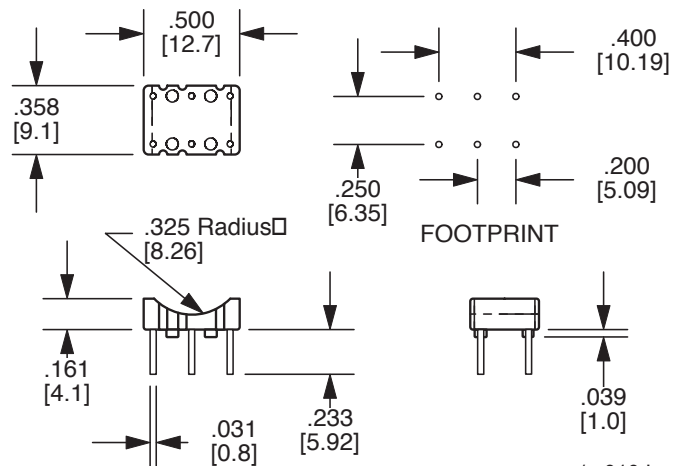
## VTM650-6

**Material:** PH3(Black)  
**UL Rating:** UL94-VO, Class F  
**6 Terminals:** CP Wire  
 100% Tin Plate  
**Solderability:** Per MIL-STD-202  
 Method 208

**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging tray options on page 57.

**Application:** For vertical mounting of inductor, transformer and current sensor applications using a wound toroid up to .650 inches in diameter.

Made in our China Factory



+/- .010 Inches (mm) Actual Size

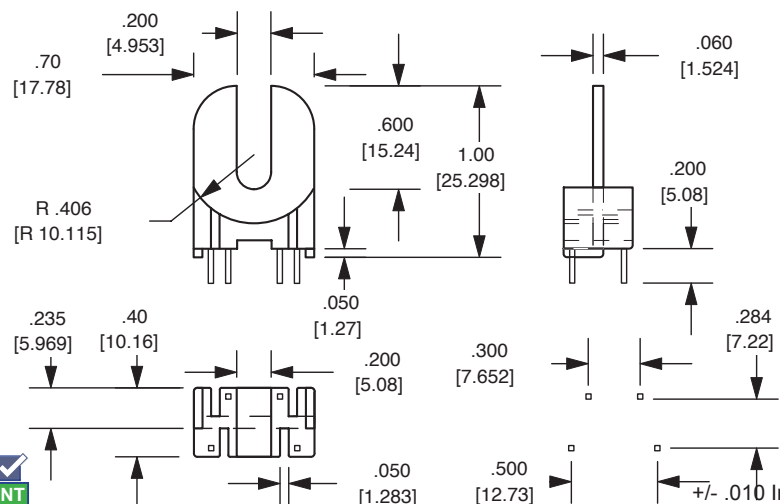
## VTM681-4

**Material:** PET (Natural)  
**UL Rating:** UL94-VO, Class N  
**4 Terminals:** Brass  
 .026 (.66mm) x .026 (.66mm). 100% Tin Plate.  
**Solderability:** Per MIL-STD-202  
 Method 208

**Package Tray (HPS):** TY85x116-B (50/Tray)  
 See RoHS compliant PVC packaging trays options on page 57.

**Application:** Designed for vertical mounting of up to two .800 inch wound toroids. Also suitable for current sensing applications.

Made in our China Factory

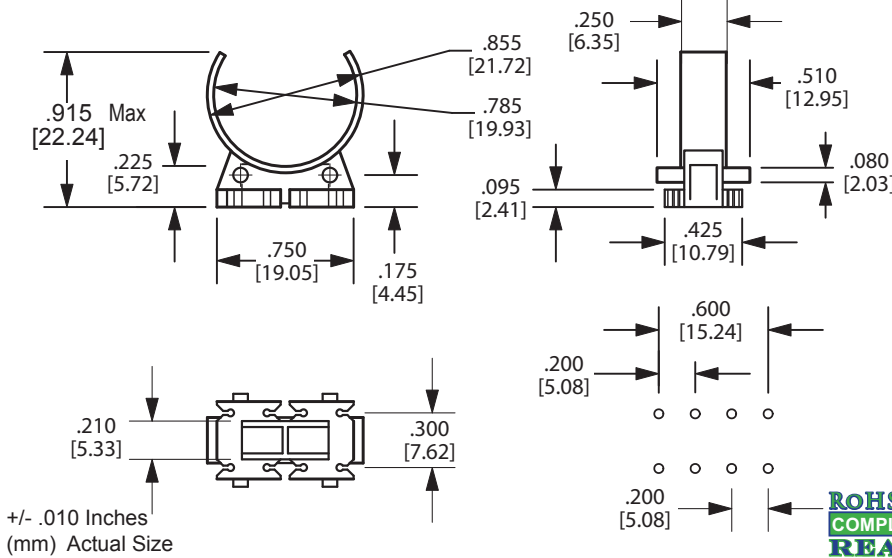


+/- .010 Inches (mm) Actual Size



### VTM800-08

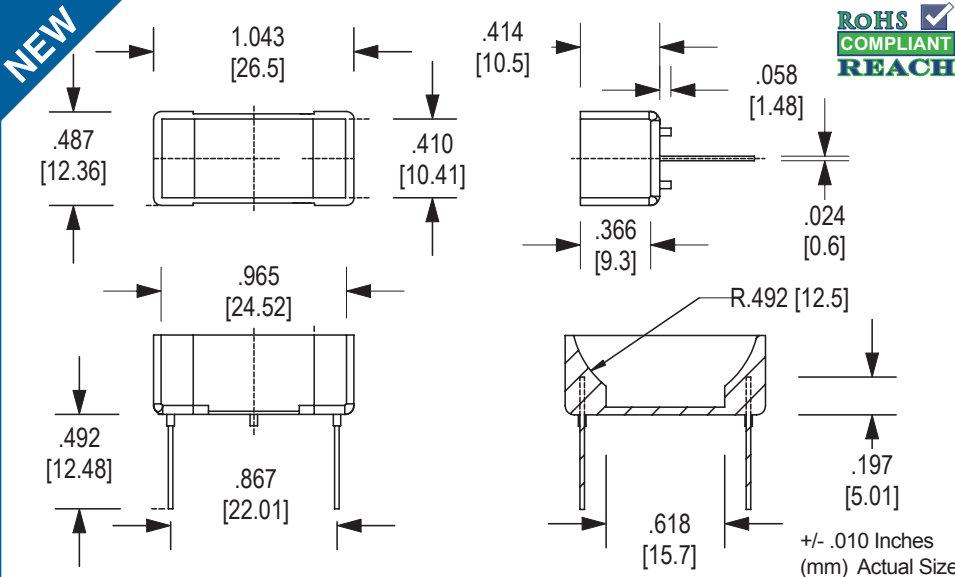
**Material:** GFN (Natural)  
**UL Rating:** UL94-VO, Class F  
**8 Terminals:** Self Terminating  
**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging tray options on page 57.  
**Application:** Designed for vertical mounting of .800 inch unwound toroids. The mount is designed to have the unwound core placed in the yoke, then to have the wire winding surround the core and yoke, holding the two in a single unit. Up to 8 winding leads are then snapped into the mount base. Best suited for #20 (.034) AWG. Made in our China Factory.



+/- .010 Inches (mm) Actual Size

### VTM945-2

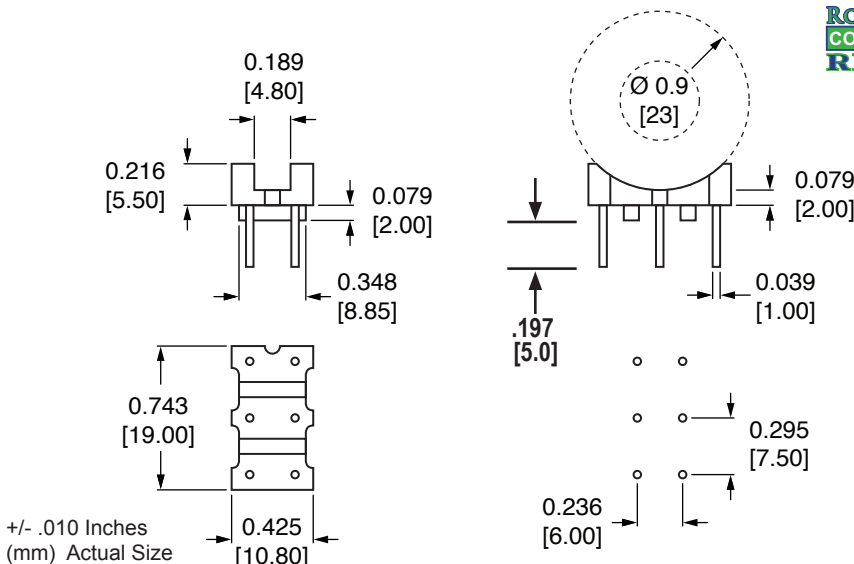
**Material:** FR530 (Black)  
**UL Rating:** UL94-VO, Class F  
**2 Terminals:** CP Wire  
 100% Tin Plated  
**Solderability:** Per MIL-STD-202 Method 208  
**Packaging Tray:** Bulk in Polybags.  
**Application:** For vertical mounting of wound toroids up to .950 inches in diameter.  
 Made in our China Factory



+/- .010 Inches (mm) Actual Size

### VTM950-6

**Material:** PH3 (Black)  
**UL Rating:** UL94-VO, Class F  
**Terminals:** Copper Plated Steel  
 100% Tin Plate  
**Solderability:** Per MIL-STD-202 Method 208  
**Packaging:** Bulk in Polybags  
**Application:** For vertical mounting of wound toroids up to .90 inches in diameter.  
 Made in our China Factory



+/- .010 Inches (mm) Actual Size

Ceramic Headers

DR Series

Surface Mount

Horizontal

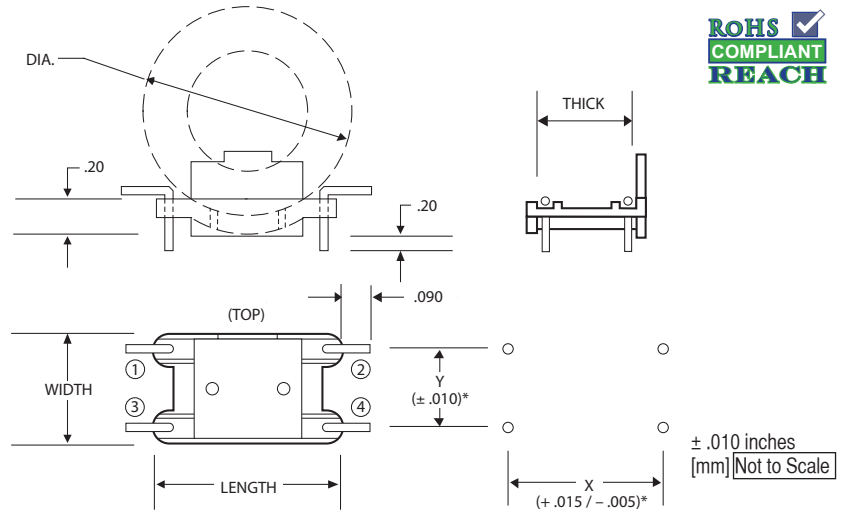
Vertical

Trays

## VTM SERIES

**Material:** GFN/GFN4 (Natural)  
**UL Rating:** UL 94-VO, Class F  
**4 Terminals:** Copper Wire  
 100% Tin Plated  
**Solderability:** Per MIL-STD-202  
 Method 208  
**Packaging:** Bulk in Polybags

**Application:** For vertical mounting of wound toroids from 1.00 to 2.8 inches in diameter. The VTM series is available with the four terminals shown or without terminals (.048 through hole).

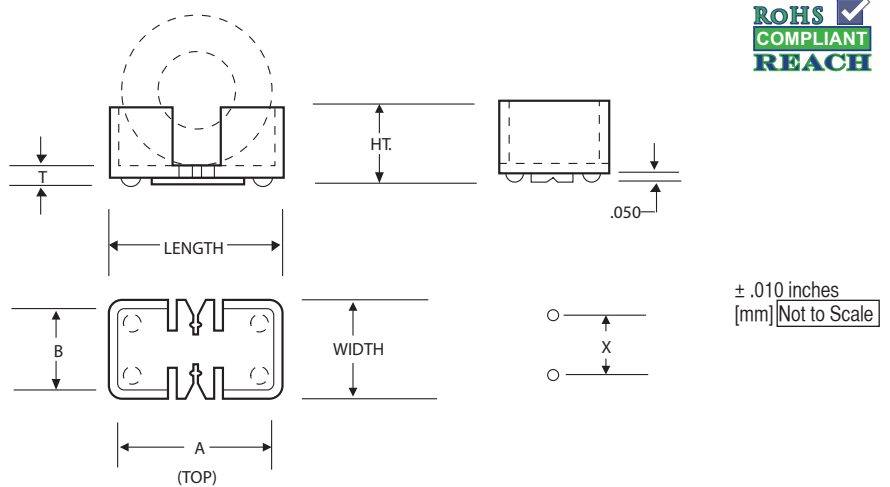


PART NO.	LENGTH	WIDTH	THICK.	DIA.	X	Y	TERMINALS
VTM120-0	1.00	.60	.51	1.20	.80	.40	None (.048 Holes)
VTM120-4	[25.4]	[15.24]	[12.95]	[30.48]	[20.32]	[10.16]	4=#16 AWG (.050)
VTM160-0	1.10	.80	.71	1.60	.90	.60	None (.048 Holes)
VTM160-4	[27.94]	[20.32]	[18.03]	[40.64]	[22.86]	[15.24]	4=#16 AWG (.050)
VTM254-0	1.40	.90	.81	2.54	1.20	.70	None (.048 Holes)
VTM254-4	[35.56]	[22.86]	[20.57]	[64.51]	[30.48]	[17.78]	4=#16 AWG (.050)
VTM280-0	1.70	1.10	1.01	2.80	1.50	.90	None (.048 Holes)
VTM280-4	[43.18]	[27.94]	[25.65]	[71.12]	[38.1]	[22.86]	4=#16 AWG (.050)

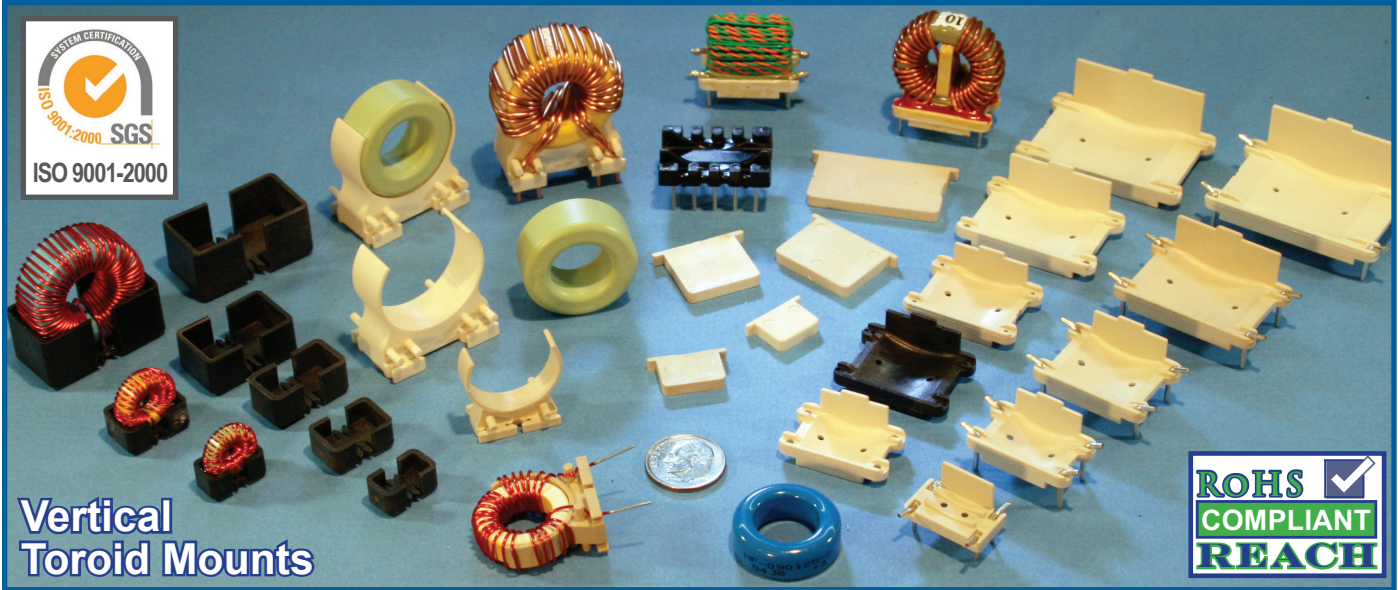
## KM SERIES

**Material:** Vydyn 909 (Black)  
**UL Rating:** UL 94-VO, Class F  
**2 Terminals:** Self Terminating  
**Solderability:** Per MIL-STD-202  
 Method 208  
**Packaging:** Bulk in Polybags

**Application:** "Klip" mounts are designed as a "self-leaded" inductor mount for wound toroids from .030 to 1.10 inches in diameter. The molded "Klip" holds the toroid leads for circuit board termination.



PART NO.	LENGTH	WIDTH	A	B	HT.	T	X	KLIP WIRE SIZE	TOROID DIA.	PACKING TRAY
KM44-01	.580	.340	.480	.240	.280	.110	.220	24-23 AWG	.450	TY74x77-A
KM44-02	[14.73]	[8.63]	[12.19]	[6.09]	[7.11]	[2.79]	[5.58]	22-21 AWG		
KM50-01	.650	.450	.550	.350	.300	.110	.300	24-21 AWG	.550	TY74x77-A
KM50-02	[16.51]	[11.43]	[13.97]	[8.89]	[7.62]	[2.79]	[7.62]	20-18 AWG		
KM68-01	.830	.450	.730	.350	.370	.110	.300	24-21 AWG	.725	TY65x100-A
KM68-02	[21.08]	[11.43]	[18.54]	[8.89]	[9.39]	[2.79]	[7.62]	20-18 AWG		
KM80-01	.950	.600	.850	.500	.420	.110	.450	22-19 AWG	.850	TY122x140-A
KM80-02	[24.13]	[15.24]	[21.59]	[12.7]	[10.66]	[2.79]	[11.43]	18-17 AWG		
KM106-01	1.250	.700	1.150	.600	.580	.130	.500	22-19 AWG	1.150	TY122x140-A
KM106-02	[31.75]	[17.78]	[29.21]	[15.24]	[14.73]	[3.30]	[12.7]	18-17 AWG		



## Vertical Toroid Mounts



Ceramic Headers

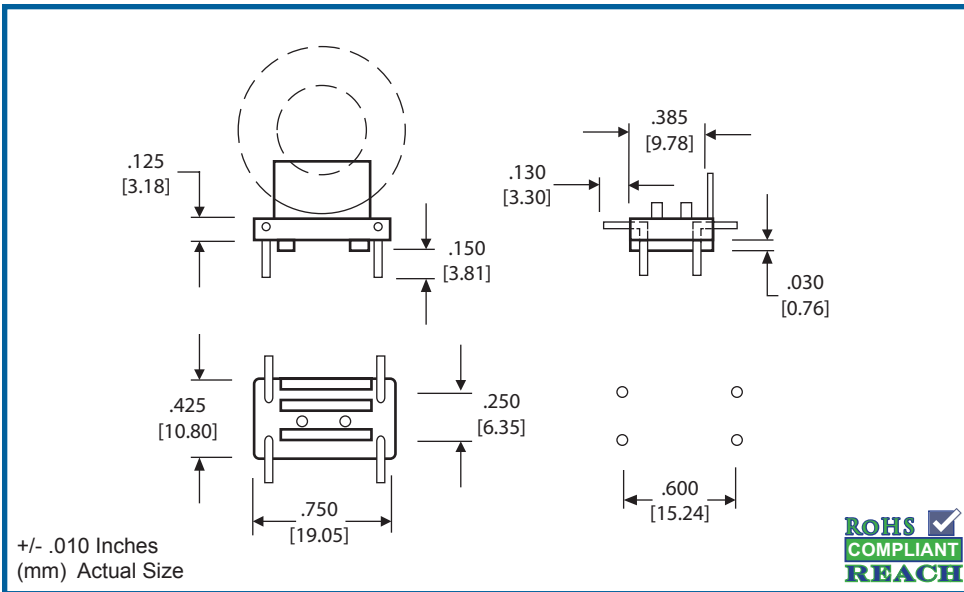
DR Series

Surface Mount

Horizontal

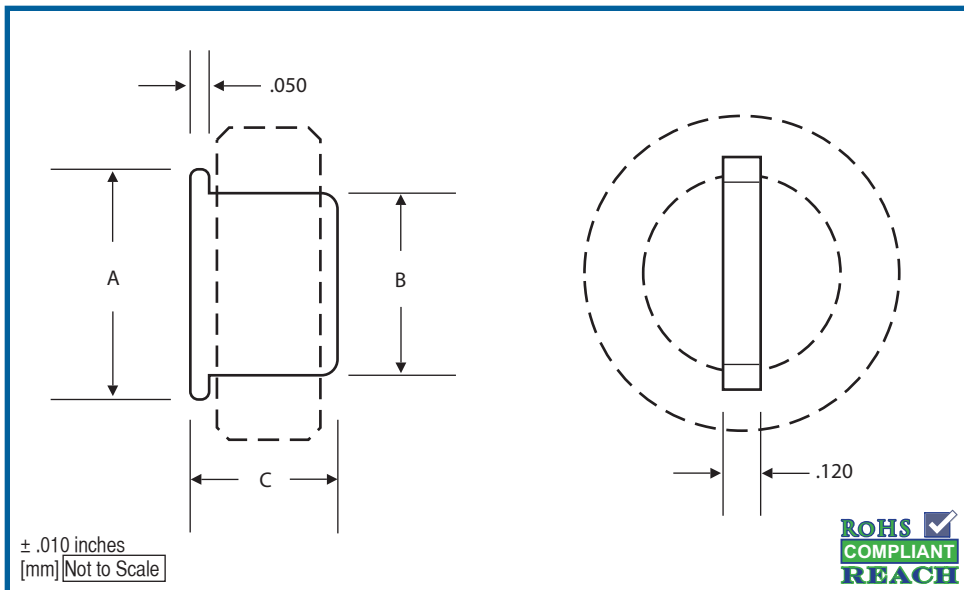
Vertical

Trays



### VTM100-4

- Material:** GFN (Natural)
- UL Rating:** UL94-VO, Class F
- 4 Terminals:** Copper Wire  
.040 Dia. (#18AWG)  
100% Tin Plated
- Solderability:** Per MIL-STD-202 Method 208
- Packaging:** Bulk in Polybags
- Application:** An industry standard for vertical mounting of wound toroids up to 1.15 inches in diameter. VTM 100-0 is available with .037 through holes and no terminals.



### TS SERIES

- Material:** GFN (Natural)
- UL Rating:** UL94-VO, Class F
- Packaging:** Bulk in Polybags
- Application:** Spacers are for common mode chokes requiring voltage isolation.

Part No.	A	B	C
TS33-13	.460 [11.7]	.315 [8.0]	.285 [7.2]
TS48-12	.660 [16.7]	.465 [11.8]	.365 [9.3]
TS52-03	.660 [16.7]	.480 [12.2]	.412 [10.5]
TS52-05	.660 [16.7]	.510 [12.9]	.600 [15.2]
TS59-06	.730 [18.5]	.560 [14.2]	.412 [10.5]
TS73-01	.930 [23.6]	.720 [18.2]	.700 [17.8]
TS73-11	.930 [23.6]	.722 [18.3]	.430 [10.9]
TS89-07	1.025 [26.0]	.875 [22.2]	.690 [17.5]
TS94-14	1.030 [26.1]	.930 [23.6]	.670 [17.0]
TS130-10	1.460 [37.1]	1.290 [32.8]	.740 [18.8]
TS140-08	1.372 [34.8]	1.212 [30.8]	.875 [22.2]



Ceramic Headers

DR Series

Surface Mount

Horizontal

Vertical

Trays



**High Quality Vertical Toroid Cups and Mounts**

**VTC Series**

**Material:** GFN (Natural)

**UL Rating:** UL94-VO, Class F

**Terminals:** CP Wire  
.026 (.66mm) x .026 (.66mm), 100% Tin Plate.

**Solderability:** MIL-STD-202 Method 208

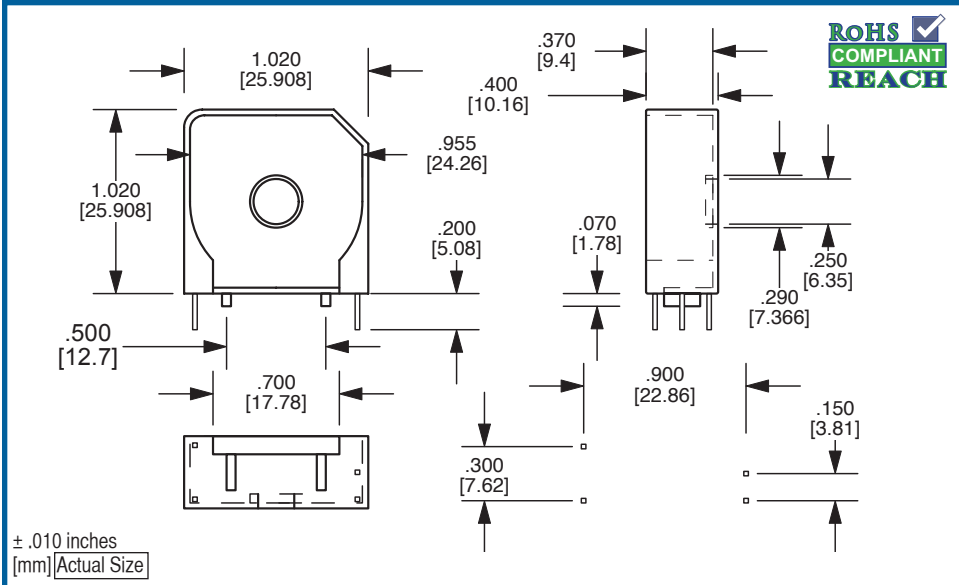
**Package Method:** Bulk in Poly Bags

**Application:** A European standard for enclosed vertical mounting of wound toroids from .500 to 1.46 inches in diameter. Four terminals in positions 2,3,6,7 is standard. Any terminal pattern can be provided. Example; VTC774-5/12356 is the part number for five terminals in positions 1,2,3,5,6. Bottom plates are available to allow self-leading of heavy gauge wire. (Sold separately)

Made in our China Factory

**ROHS COMPLIANT REACH**

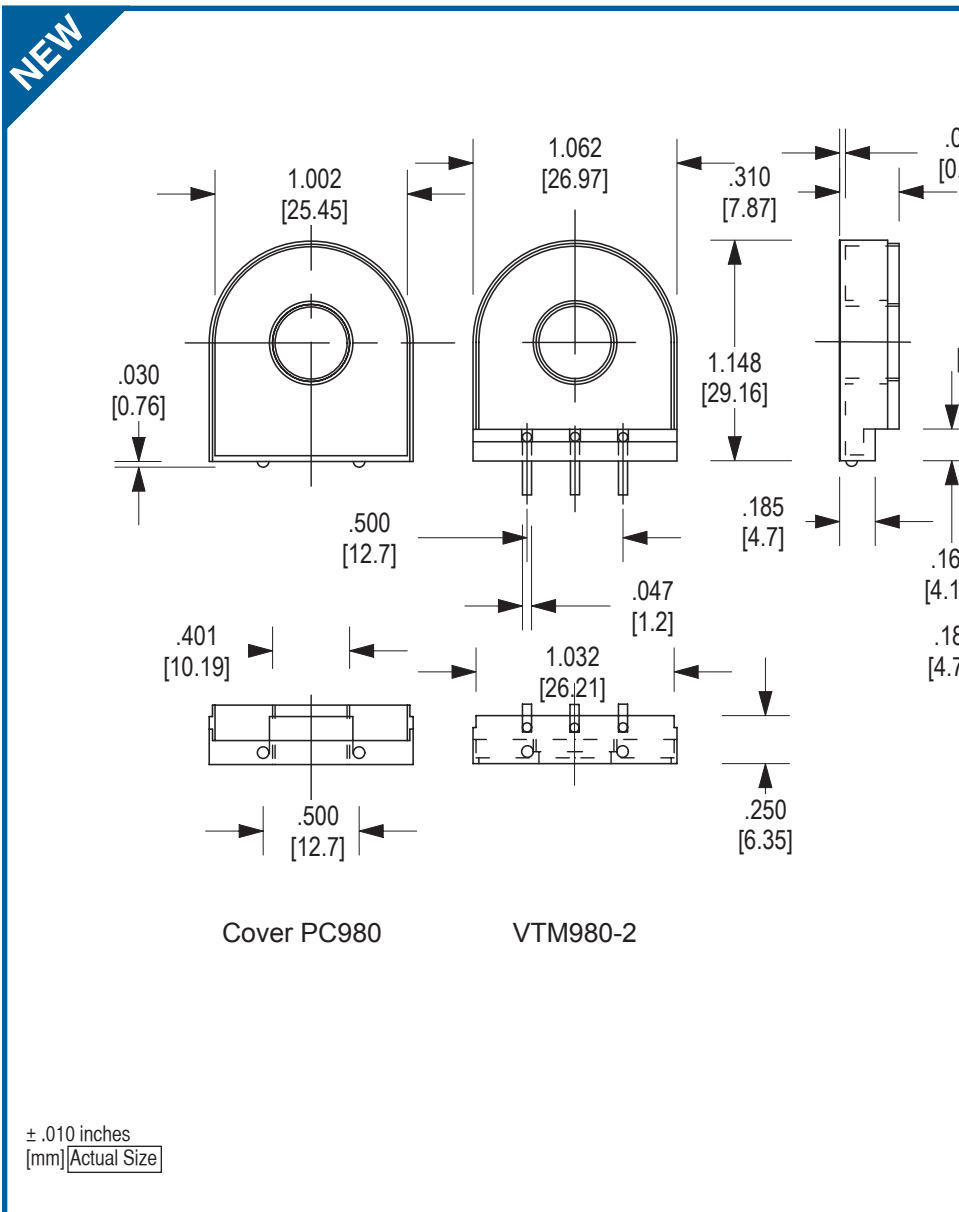
PART NO.	LENGTH	WIDTH	A	B	HT.	DEPTH	S	X	Y	Z	TRAY
VTC 512-4	.750 [19.0]	.350 [9.0]	.520 [13.2]	.270 [6.85]	.630 [16.0]	.527 [13.4]	.063 [1.6]	.590 [15.0]	.197 [5.0]	—	TY74x77-A
VTC 613-4	.710 [18.0]	.510 [13.0]	.630 [16.0]	.315 [8.0]	.787 [20.0]	.685 [17.5]	.063 [1.6]	.197 [5.0]	.394 [10.0]	.197 [5.0]	TY85x116-A
VTC 774-4	.905 [23.0]	.610 [15.5]	.790 [20.0]	.394 [10.0]	.984 [25.0]	.889 [22.6]	.055 [1.4]	.394 [10.0]	.492 [12.5]	.197 [5.0]	TY85x116-A
VTC 935-4	1.060 [27.0]	.710 [18.0]	.950 [24.10]	.512 [13.0]	1.180 [30.0]	1.060 [27.0]	.060 [1.50]	.492 [12.5]	.590 [15.0]	.197 [5.0]	TY122x140-A
VTC 1156-4	1.260 [32.00]	.710 [18.0]	1.180 [30.0]	.512 [13.0]	1.378 [35.0]	1.240 [31.5]	.080 [2.0]	.492 [12.5]	.590 [15.0]	.295 [7.5]	None
VTC 1227-4	1.378 [35.0]	.905 [23.0]	1.30 [33.0]	.669 [17.0]	1.457 [37.0]	1.300 [33.0]	.080 [2.0]	.590 [15.0]	.787 [20.0]	.295 [7.5]	None
VTC 1468-4	1.653 [42.0]	1.100 [28.0]	1.555 [39.50]	.846 [21.5]	1.770 [45.0]	1.660 [42.2]	.080 [2.0]	.984 [25.0]	.984 [25.0]	.295 [7.5]	None



**VTM955-4**

**Material:** GFN (Natural)  
**UL Rating:** UL94-VO, Class F  
**4 Terminals:** CP Wire  
 .026 (.66mm) x .26 (.66mm) 100% Tin Plate.  
**Solderability:** Per MIL-STD-202 Method 208  
**Package Method:** Bulk in Poly Bags  
 See RoHS compliant PVC packaging trays on page 57.  
**Application:** For vertical mounting of wound toroids up to .955 inches in diameter.  
 Made in our China Factory

± .010 inches  
 [mm] Actual Size



**VTM980-3**

**Material:** FR530 (Black)  
**UL Rating:** UL94-VO, Class F  
**3 Terminals:** CP Wire  
 .030 (.8mm) diameter. 100% Tin Plate.  
**Solderability:** Per MIL-STD-202 Method 208  
**Packaging Tray:** Bulk in Polybags.  
 Will fit tray TY122X140, see page 65.  
**Application:** For vertical mounting of wound toroids up to .98 inches in diameter for current sensing applications.  
 Includes cover PC980  
 Made in our China Factory

± .010 inches  
 [mm] Actual Size

Ceramic Headers

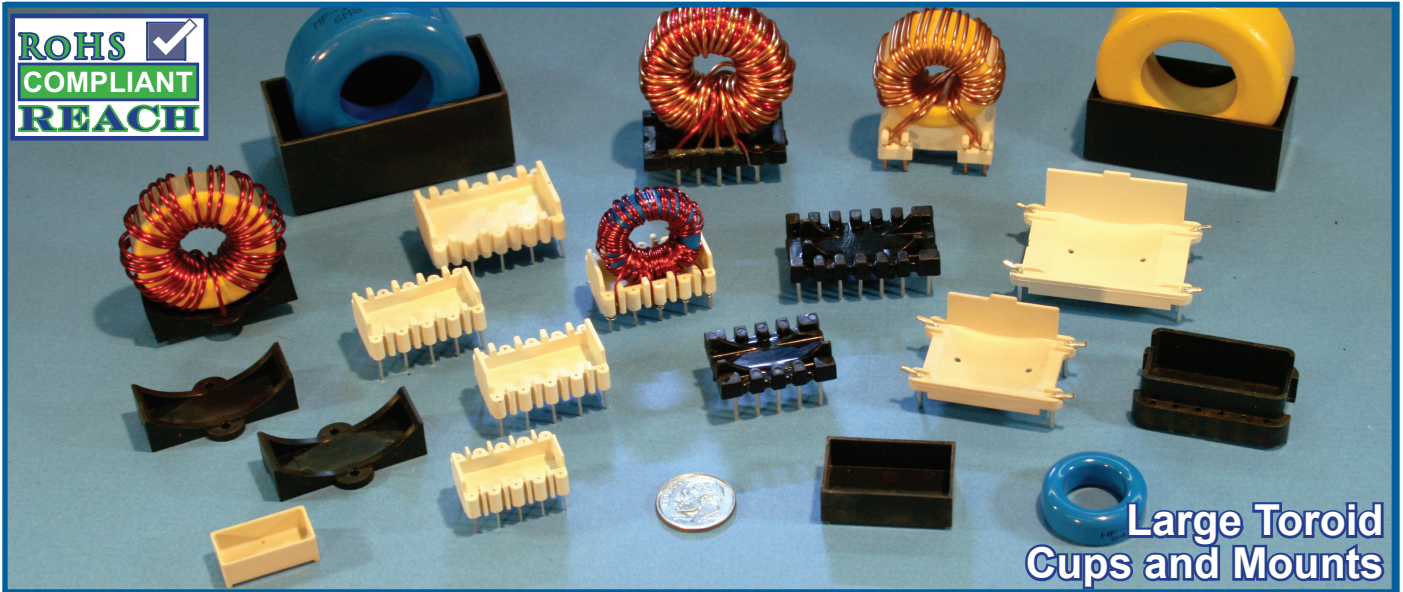
DR Series

Surface Mount

Horizontal

Vertical

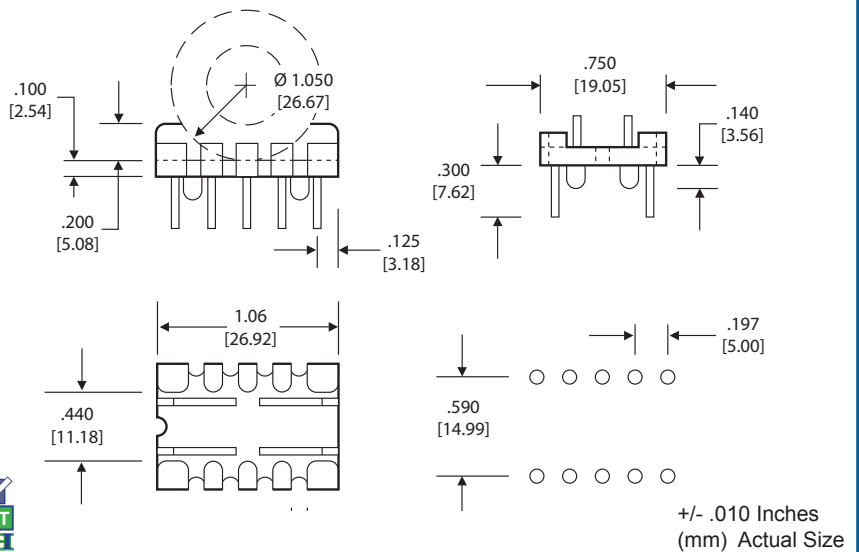
Trays



## VTM1050-10

**Material:** PH3 (Black)  
**UL Rating:** UL94-VO, Class F  
**10 Terminals:** CP Wire  
 .040 (1mm) diameter. 100% Tin Plate.  
**Solderability:** Per MIL-STD-202 Method 208  
**Packaging Tray:** Bulk in Polybags  
**Application:** For vertical mounting of wound toroids up to 1.1 inches in diameter requiring up to 10 terminations.

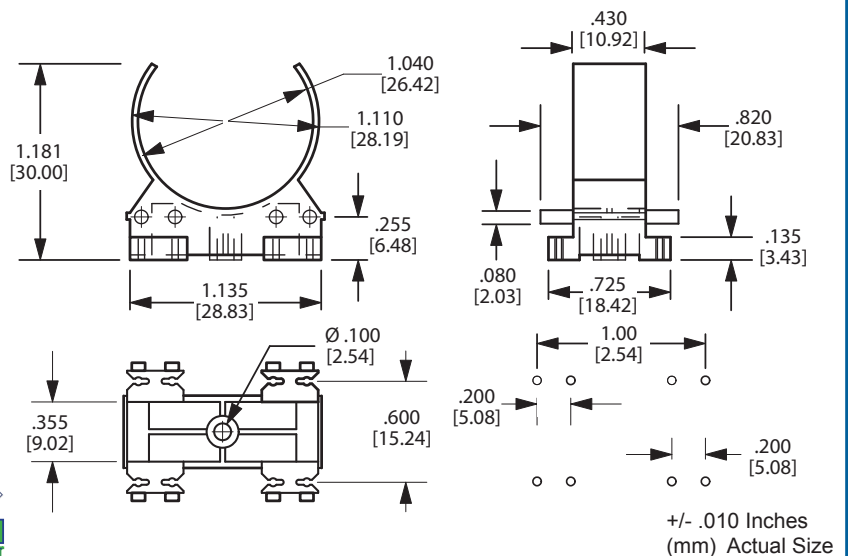
Made in our China Factory

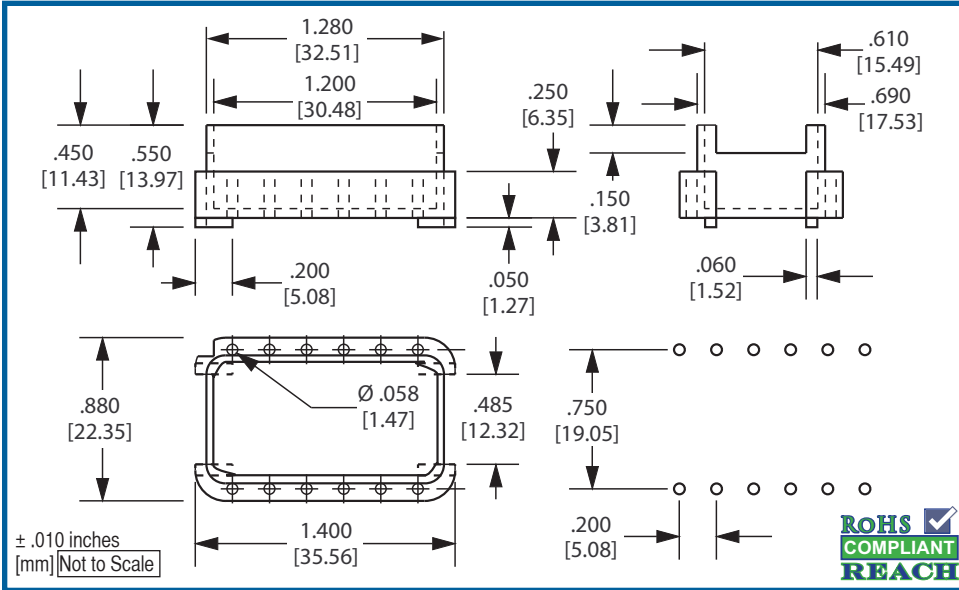


## VTM1060-08

**Material:** GFN (Natural)  
**UL Rating:** UL94-VO, Class F  
**8 Terminals:** Self leading  
**Packaging:** Bulk in Polybags  
**Application:** Designed for vertical mounting of 1.06 inch unwound toroids. The mount is designed to have the unwound core placed in the yoke, then to have the wire winding cover the core and yoke, holding the two in a single unit. Up to 8 winding leads are then snapped into the mount base. Best suited for #16 (.048) through #18 (.040) AWG.

Made in our China Factory

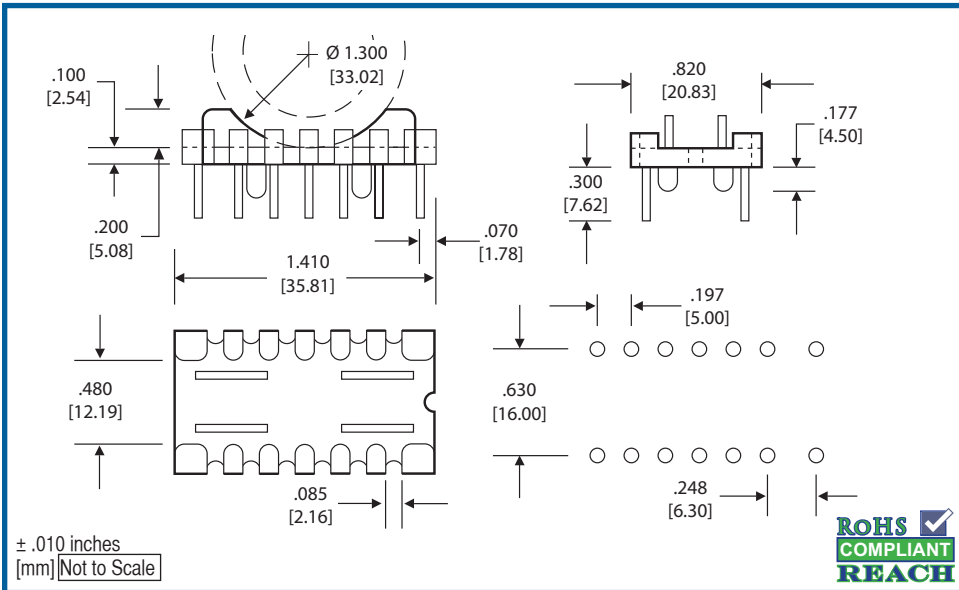




### VTB1200-012

**Material:** Rynite (Black)  
**UL Rating:** UL94-VO, Class N  
**12 Terminals:** Self Terminating to 054 Dia. (#16AWG)  
**Packaging:** Bulk in Polybags  
**Application:** For vertical mounting of wound toroids up to 1.40 inches in diameter. The 12 through holes allow self leading of up to 12 component leads. The rectangular cup shape facilitates potting the toroid firmly in place.

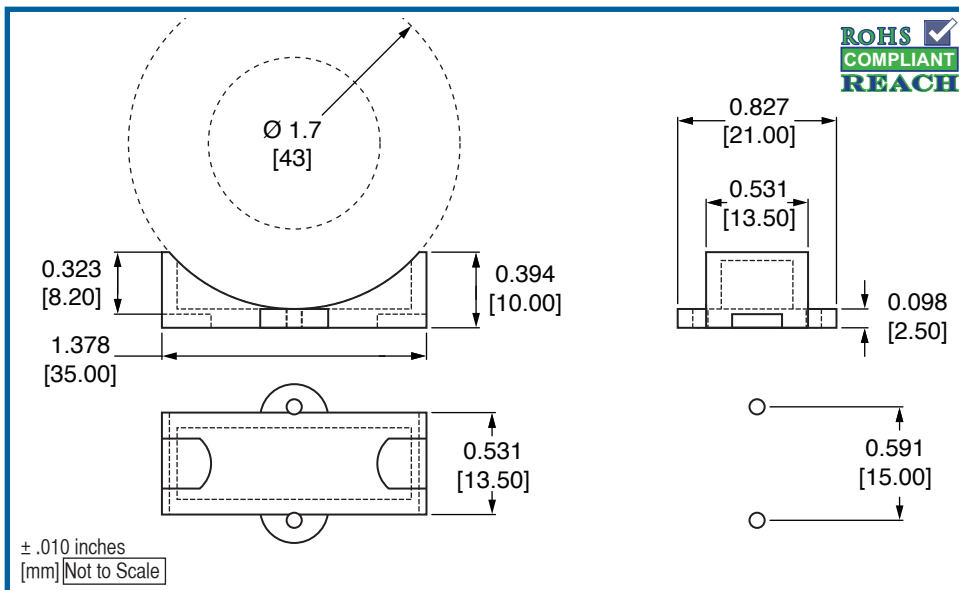
Made in our China Factory



### VTM1300-14

**Material:** PH3 (Black)  
**UL Rating:** UL94-VO, Class F  
**14 Terminals:** CP Wire .040 (1mm) Diameter. 100% Tin Plate.  
**Solderability:** Per MIL-STD-202 Method 208  
**Packaging:** Bulk in Polybags  
**Application:** For vertical mounting of wound toroids up to 1.3 inches in diameter requiring up to 14 terminations.

Made in our China Factory



### VTM1600-02

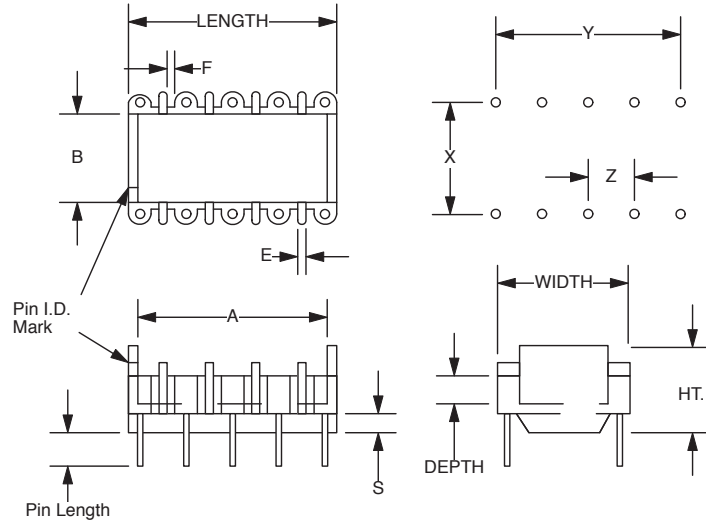
**Material:** PBT (Black)  
**UL Rating:** UL94-VO, Class B  
**2 Terminals:** Self Terminating  
**Packaging:** Bulk in Polybags  
**Application:** For vertical mounting of wound toroids up to 1.7 inches in diameter. The 2 through holes allow self leading of 2 component leads.

Made in our China Factory

## 10 Terminal VTM Series

**Material:** GFN (Natural)  
**UL Rating:** UL94-VO, Class F  
**Terminals:** CP Wire  
 100% Tin Plate  
**Solderability:** MIL-STD-202  
 Method 208  
**Packaging:** Bulk in Polybags  
**Application:** For vertical mounting of wound toroids from .600 to 1.200 inches in diameter.

Made in our China Factory



± .010 inches  
 [mm] Not to Scale

Part No.	Term. Size	Pin Length
VTM880-10	.020x.020 [.50x.50]	.157 [4.0]
VTM1020-10	.027x.027 [.70x.70]	.177 [4.5]
VTM1220-10	.027x.027 [.70x.70]	.177 [4.5]

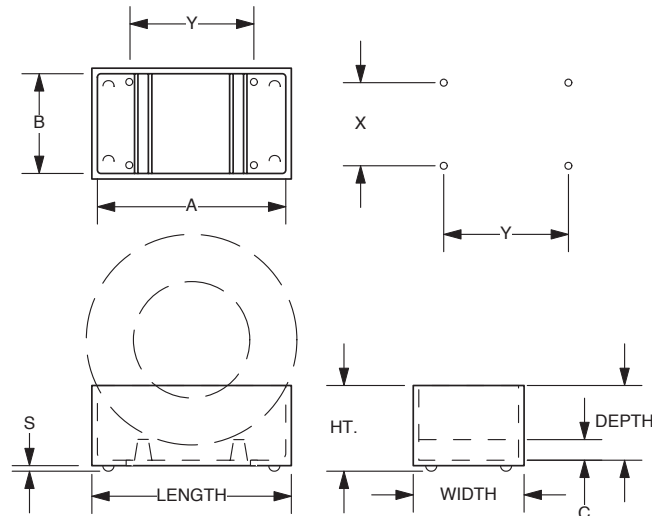
  

Part No.	Length	Width	A	B	Ht.	Depth	E	F	X	Y	Z
VTM880-10	.917 [23.3]	.618 [15.7]	.850 [21.6]	.380 [9.65]	.433 [11.0]	.155 [3.9]	.031 [.79]	.031 [.79]	.500 [20.3]	.800 [20.3]	.200 [5.08]
VTM1020-10	1.10 [28.0]	.701 [18.0]	1.00 [25.4]	.467 [11.9]	.472 [12.0]	.148 [3.8]	.055 [1.4]	.040 [1.0]	.591 [15.0]	.984 [25.0]	.246 [6.30]
VTM1220-10	1.30 [33.0]	.906 [23.0]	1.17 [29.7]	.670 [26.4]	.512 [13.0]	.120 [3.1]	.086 [2.2]	.050 [1.3]	.787 [20.0]	1.18 [30.0]	.295 [7.50]

## VTB SERIES

**Material:** DAP ( Black)  
 Rynite (Black)  
 GFN (Natural)  
**UL Rating:** UL94-VO, Class F  
**Packaging:** Bulk in Polybags  
**Application:** For vertical mounting of wound toroids. The toroid leads go through the cup holes for PCB soldering. Potting material or epoxy can be used to hold the toroids in the cups.

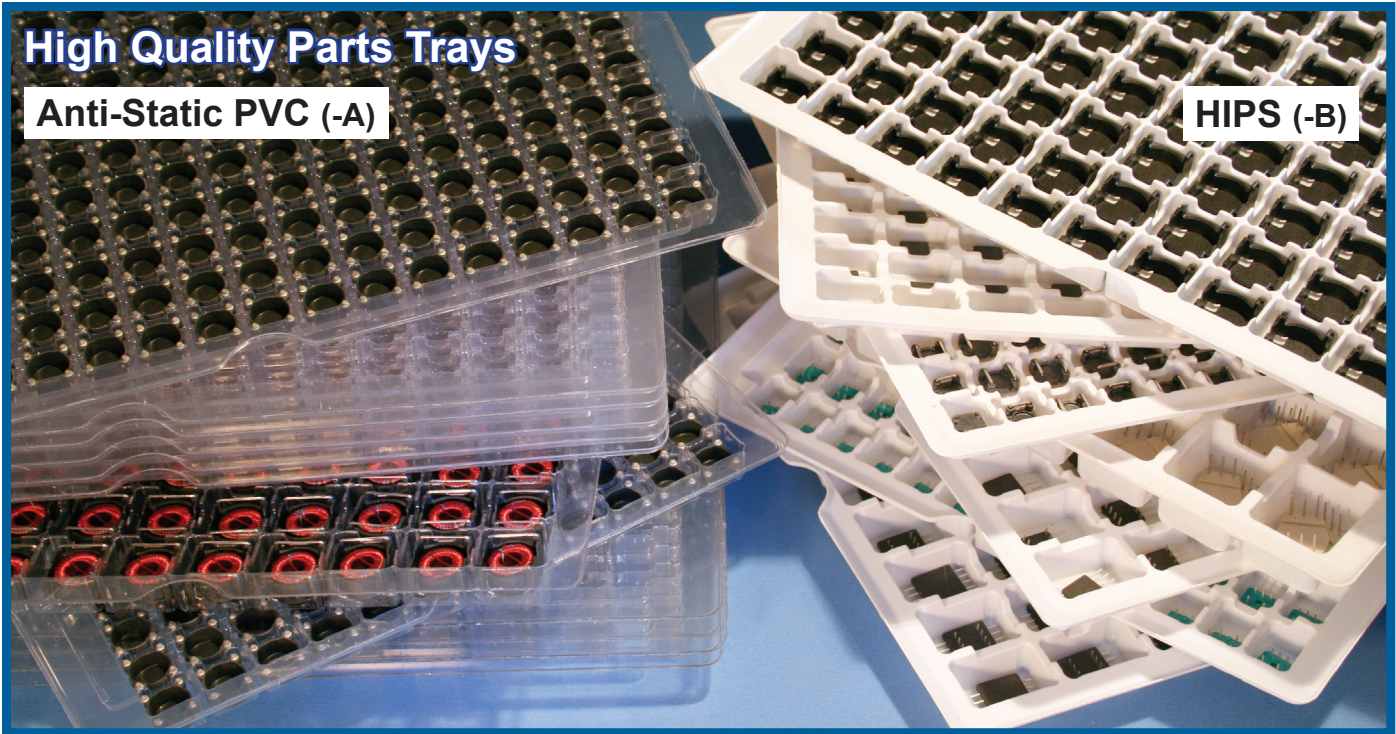
VTB800-02 and VTM900-02 have only two terminal holes along the center line.



± .010 inches  
 [mm] Not to Scale

PART NO.	LENGTH	WIDTH	A	B	C	HT.	DEPTH	S	Y	X	Mat'l
VTB700-04	.795 [20.1]	.480 [12.1]	.755 [19.1]	.440 [11.1]	—	.340 [8.6]	.275 [6.9]	.045 [1.1]	.625 [15.8]	.375 [9.5]	Rynite
VTB800-02	.825 [20.9]	.430 [10.9]	.780 [19.8]	.385 [9.8]	—	.295 [7.5]	.230 [5.8]	.035 [.8]	.300 [7.6]	----	Zytel
VTB1090-04	1.13 [28.7]	.545 [13.8]	1.08 [27.4]	.490 [12.4]	—	.450 [11.4]	.405 [10.2]	.015 [.4]	.800 [20.3]	.400 [10.1]	Rynite
VTB1350-04	1.435 [36.4]	.795 [20.1]	1.355 [34.4]	.715 [18.1]	.150 [3.8]	.575 [14.6]	.500 [12.7]	.040 [1.0]	.900 [22.8]	.600 [15.2]	Rynite
VTB1850-04	1.940 [49.2]	.900 [22.8]	1.865 [47.3]	.825 [20.9]	.190 [4.8]	.780 [19.8]	.700 [17.7]	.040 [1.0]	1.200 [30.4]	.700 [17.7]	DAP
VTB2200-04	2.290 [58.1]	1.105 [28.0]	2.210 [56.1]	1.025 [26.0]	.150 [3.8]	.920 [23.3]	.840 [21.3]	.040 [1.0]	1.500 [38.1]	.900 [22.8]	DAP





## Packaging Trays

- Facilitate Automatic Pick and Place
- Protects parts from handling damage
- Can affix bar code labels and QC approvals
- Accurate quantities without counting scales
- Convenient part number and quantity marking
- Easily move product through production process
- Can be re-used to package finished components
- Anti-Static PVC to EIA-541 and RoHS Compliant

It is important to protect the terminals of wound components, and trays are ideal for protecting components during transport, handling components during winding, or for delivering the finished component to PCB insertion. Our trays nest for ease of transport and storage, or when turned 180°, stack to protect the components in each cavity. There is an optional cover, TY1000-A, that is common to all trays and is priced separately. The cover can be used with each tray, or as the top of a stack of trays. Packaging components in trays and tubes reduces overall component cost by reducing counting errors, eliminating transit damage, and is a cost effective packaging method. Many of the trays and tubes can be re-used when the component is complete.

**High Impact Styrene (HIPS):** White packaging trays are cost effective and the included packaging method for many items in this catalog.

**Anti-Static, RoHS Compliant PVC:** These clear trays are available in all standard tray sizes and are sold separately. These anti-static trays meet EIA-541 and are generally available in stock.

We can create trays with custom cavity sizes within our standard 8.75 by 11.75 inches tray, or entirely to your specifications. The title block in each tray can be customized with a customer's name and/or part number. Please contact Lodestone Pacific for a quote of your custom requirements.

Tray No.	Cavity Width	Cavity Length	Cavity Depth	Tray Material	Cavities	Page
TY28X65-	.28	.65	.33	-A (PVC) or -B (HIPS)	280	58
TY37X47-	.37	.47	.33	-A (PVC) or -B (HIPS)	260	59
TY50x50-	.50	.50	.32	-A (PVC) or -B (HIPS)	200	60
TY45X70-	.45	.70	.35	-A (PVC) or -B (HIPS)	150	61
TY74X77-	.74	.77	.40	-A (PVC) or -B (HIPS)	100	62
TY65X100	.65	1.0	.45	-A (PVC) or -B (HIPS)	75	63
TY85X116-	.85	1.16	.69	-A (PVC) or -B (HIPS)	50	64
TY122X140-	1.22	1.4	.65	-A (PVC) or -B (HIPS)	35	65

Ceramic Headers

DR Series

Surface Mount

Horizontal

Vertical

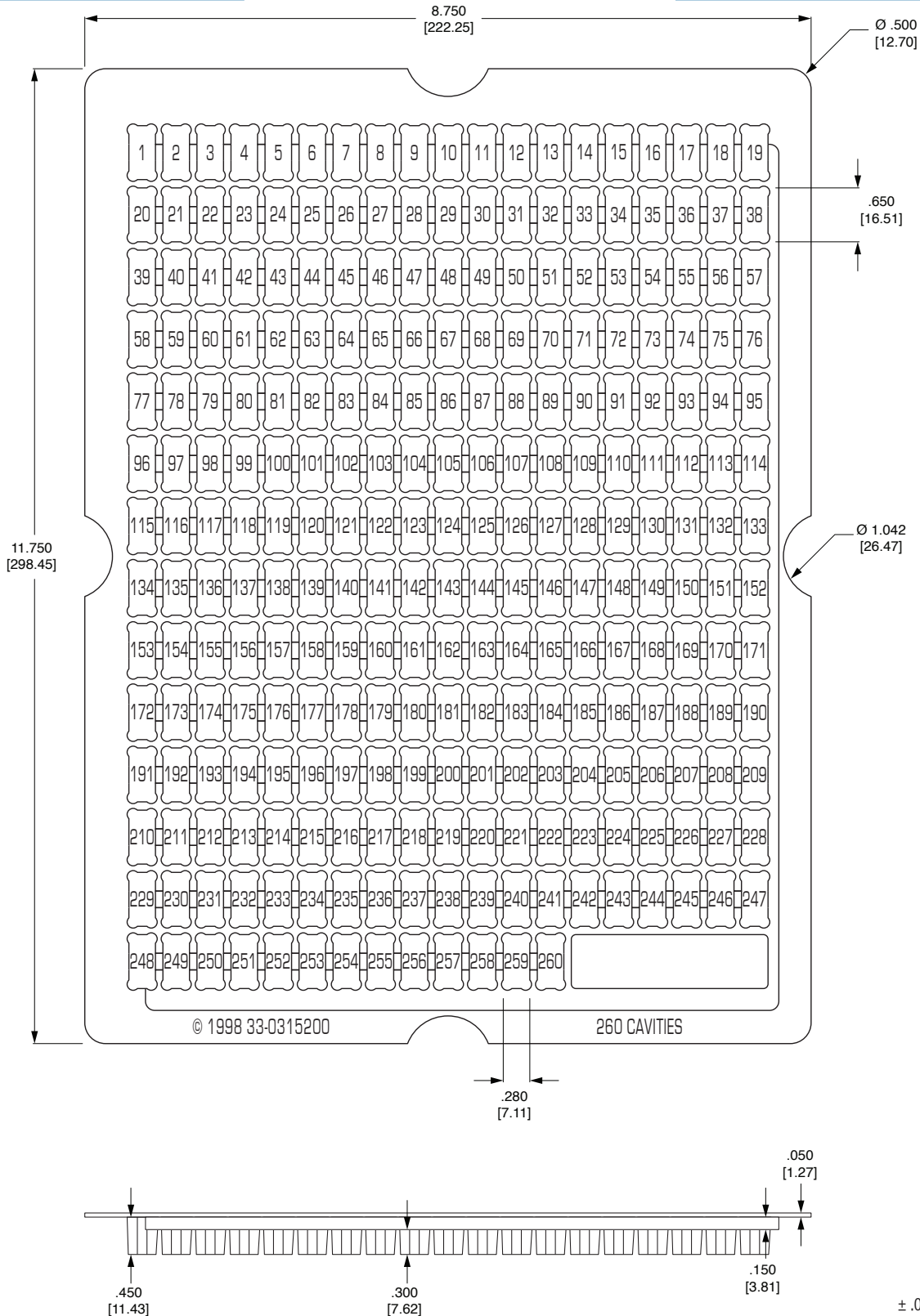
Trays

## TY28X65-B

Material: High Impact Styrene  
White (.017 Thick)  
Standard Packaging

## TY28X65-A

Material: PVC (.020 Thick)  
Rating: Clear, Anti-static to EIA-541  
Sold Separately



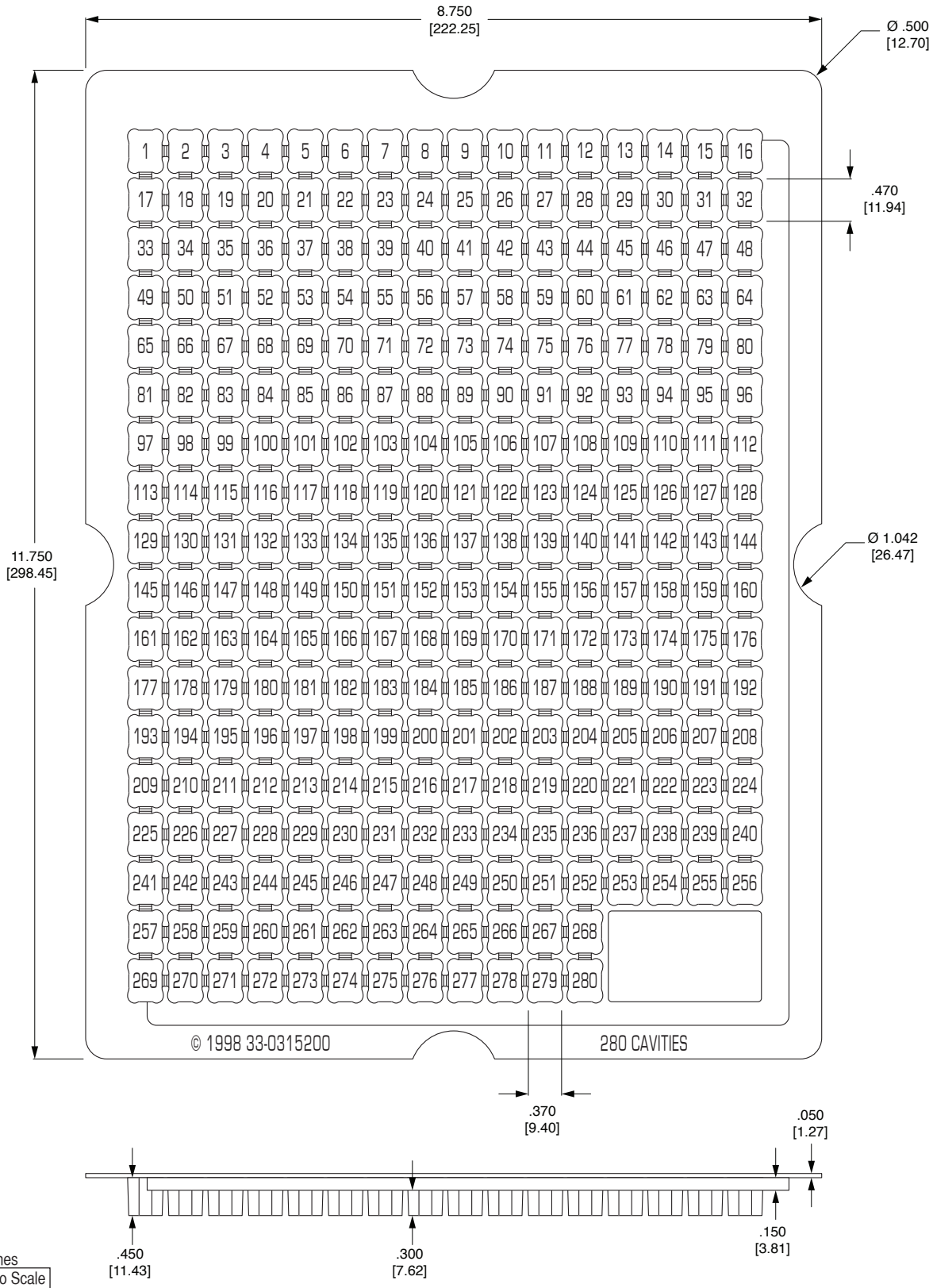
± .010 inches  
[mm] Not to Scale

### TY37X47-B

Material: High Impact Styrene  
White (.017 Thick)  
Standard Packaging

### TY37X47-A

Material: PVC (.020 Thick)  
Rating: Clear, Anti-static to EIA-541  
Sold Separately



Ceramic Headers

DR Series

Surface Mount

Horizontal

Vertical

Trays

Ceramic Headers

DR Series

Surface Mount

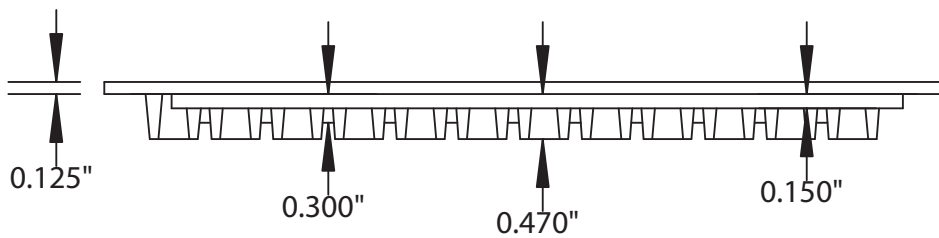
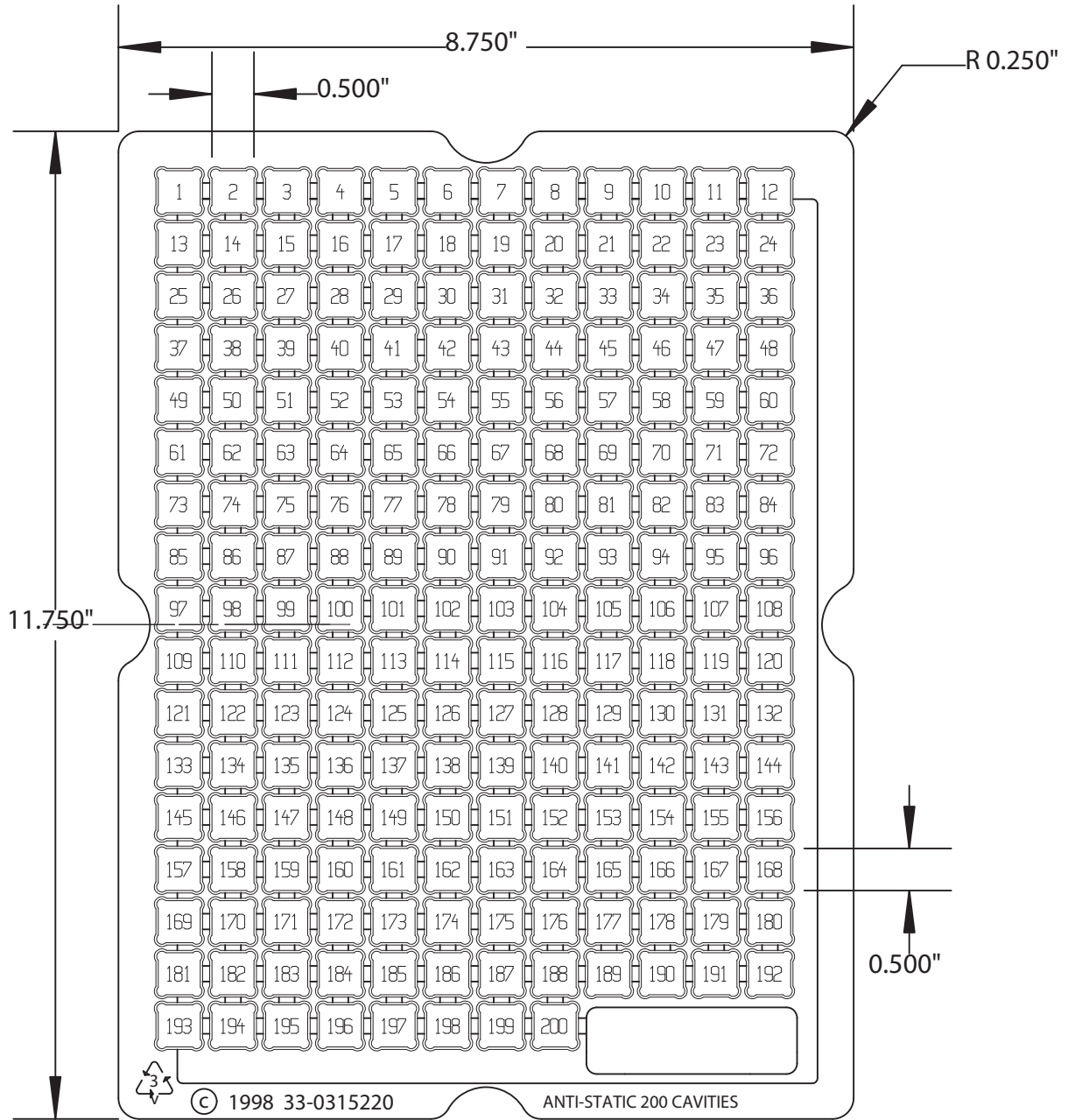
Horizontal

Vertical

Trays

**TY50X50-B**  
 Material: High Impact Styrene  
 White (.017 Thick)  
 Standard Packaging

**TY50X50-A**  
 Material: PVC (.020 Thick)  
 Rating: Clear, Anti-static to EIA-541  
 Sold Separately



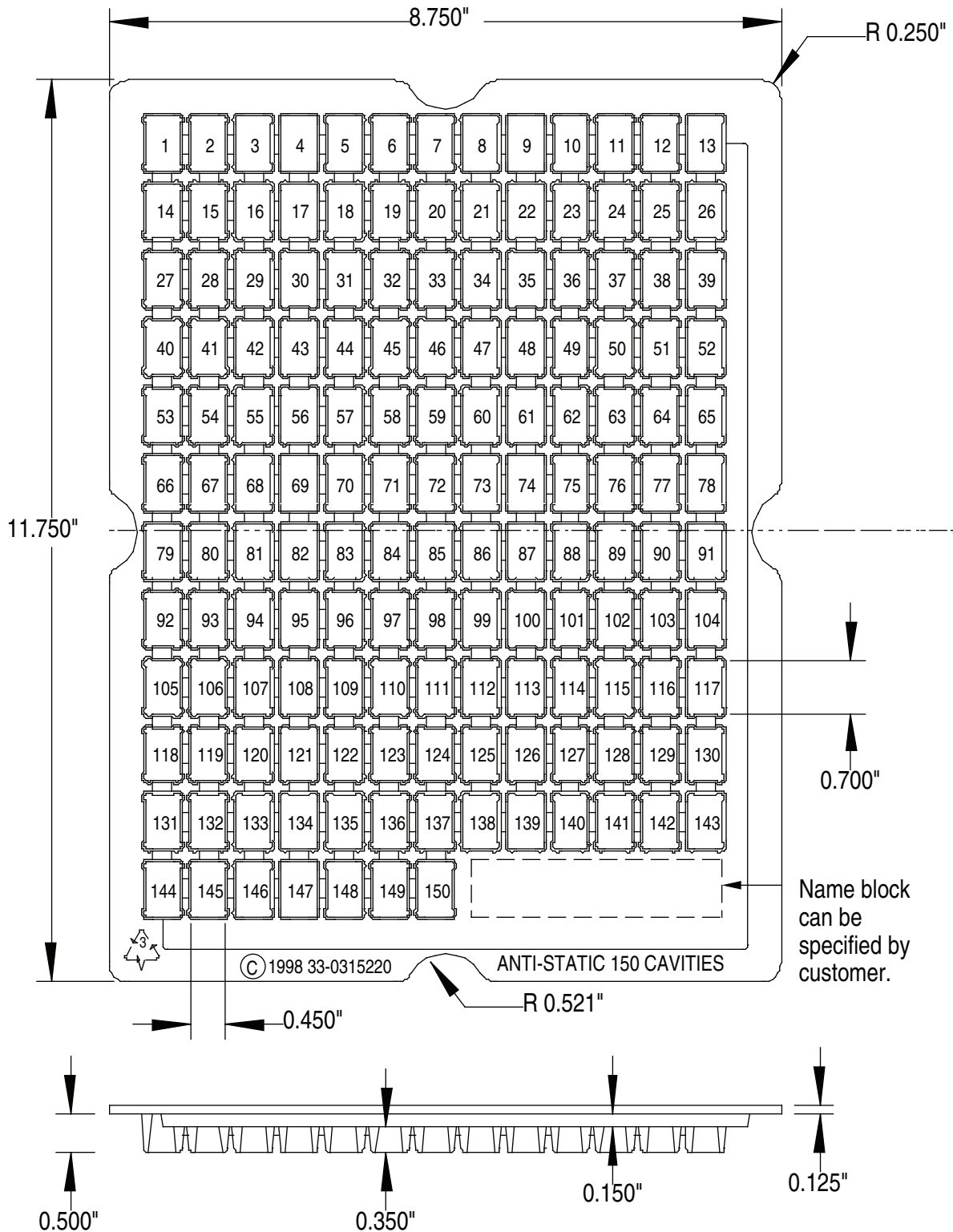
± .010 inches  
 [mm] [Not to Scale]

### TY45X70-B

Material: High Impact Styrene  
White (.017 Thick)  
Standard Packaging

### TY45X70-A

Material: PVC (.020 Thick)  
Rating: Clear, Anti-static to EIA-541  
Sold Separately



± .010 inches  
[mm] Not to Scale

Ceramic Headers

DR Series

Surface Mount

Horizontal

Vertical

Trays

Ceramic Headers

DR Series

Surface Mount

Horizontal

Vertical

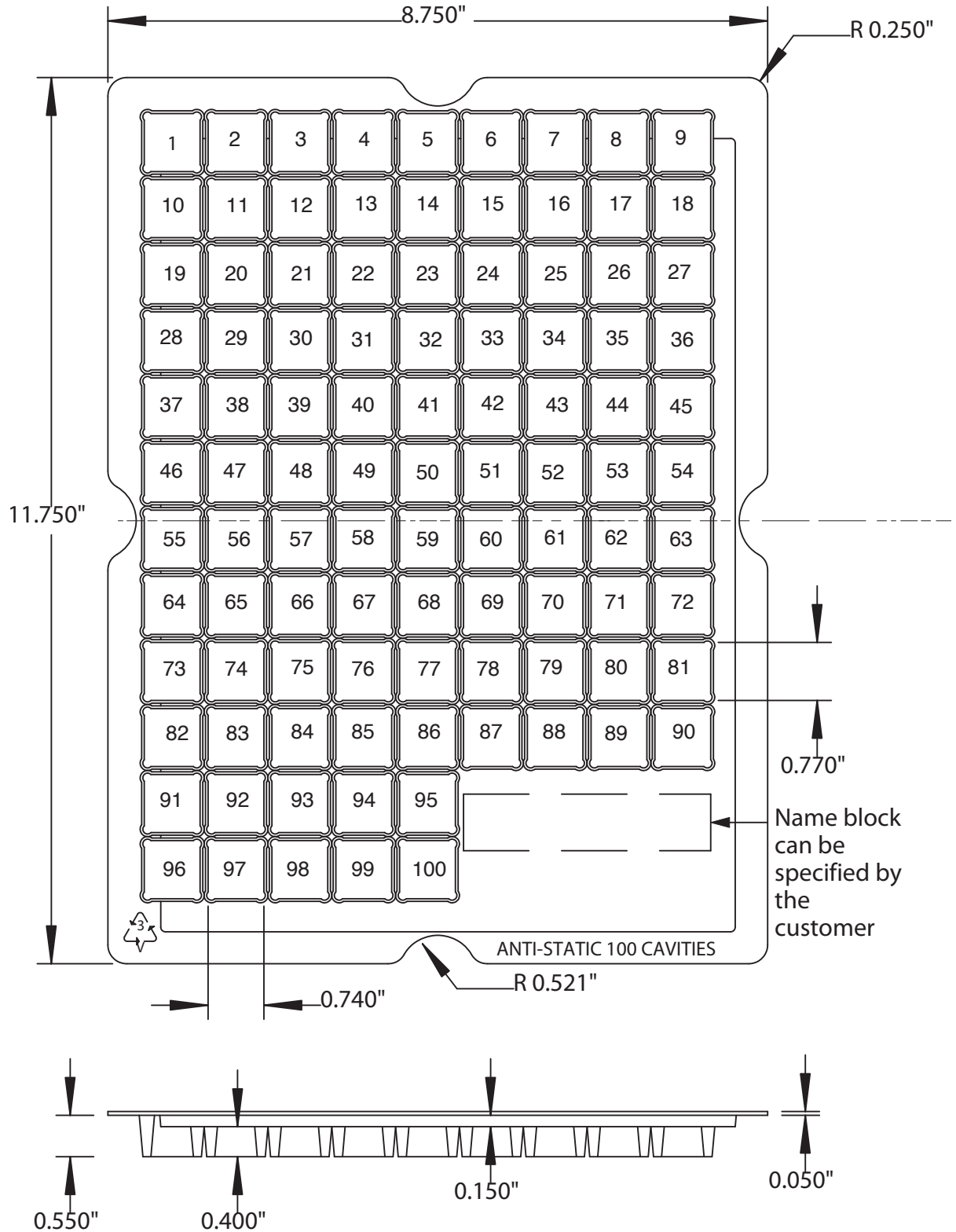
Trays

## TY74X77-B

Material: High Impact Styrene  
White (.017 Thick)  
Standard Packaging

## TY74X77-A

Material: PVC (.020 Thick)  
Rating: Clear, Anti-static to EIA-541  
Sold Separately



ANTI-STATIC 100 CAVITIES

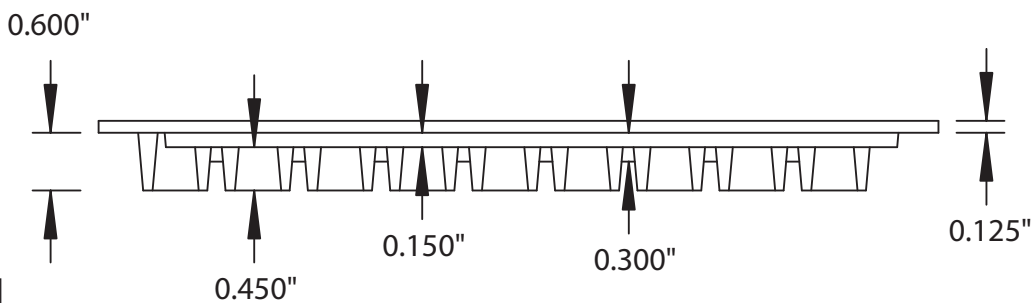
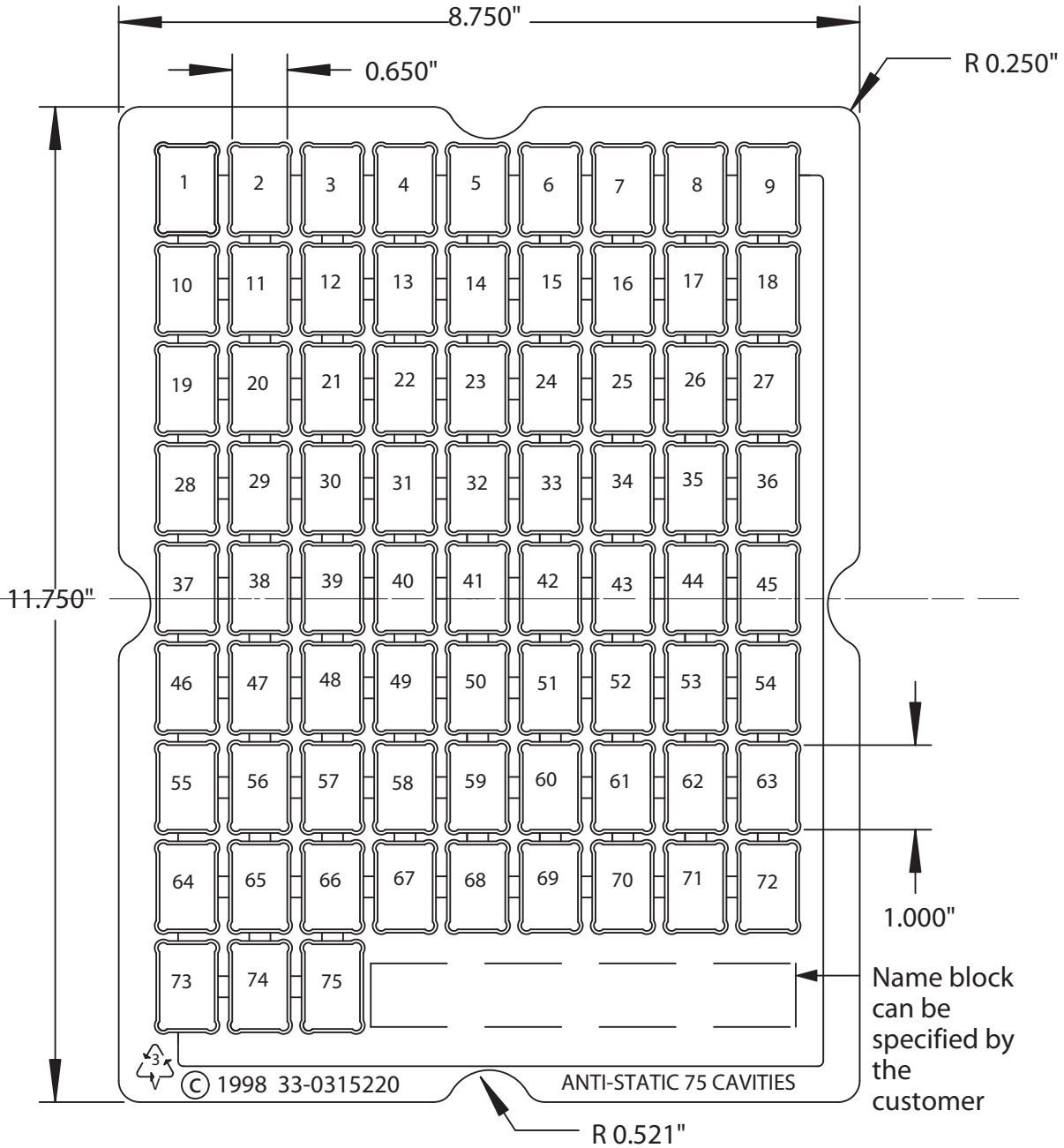
± .010 inches  
[mm] Not to Scale

### TY65X100-B

Material: High Impact Styrene  
White (.017 Thick)  
Standard Packaging

### TY65X100-A

Material: PVC (.020 Thick)  
Rating: Clear, Anti-static to EIA-541  
Sold Separately



± .010 inches  
[mm] Not to Scale

Ceramic Headers

DR Series

Surface Mount

Horizontal

Vertical

Trays

Ceramic Headers

DR Series

Surface Mount

Horizontal

Vertical

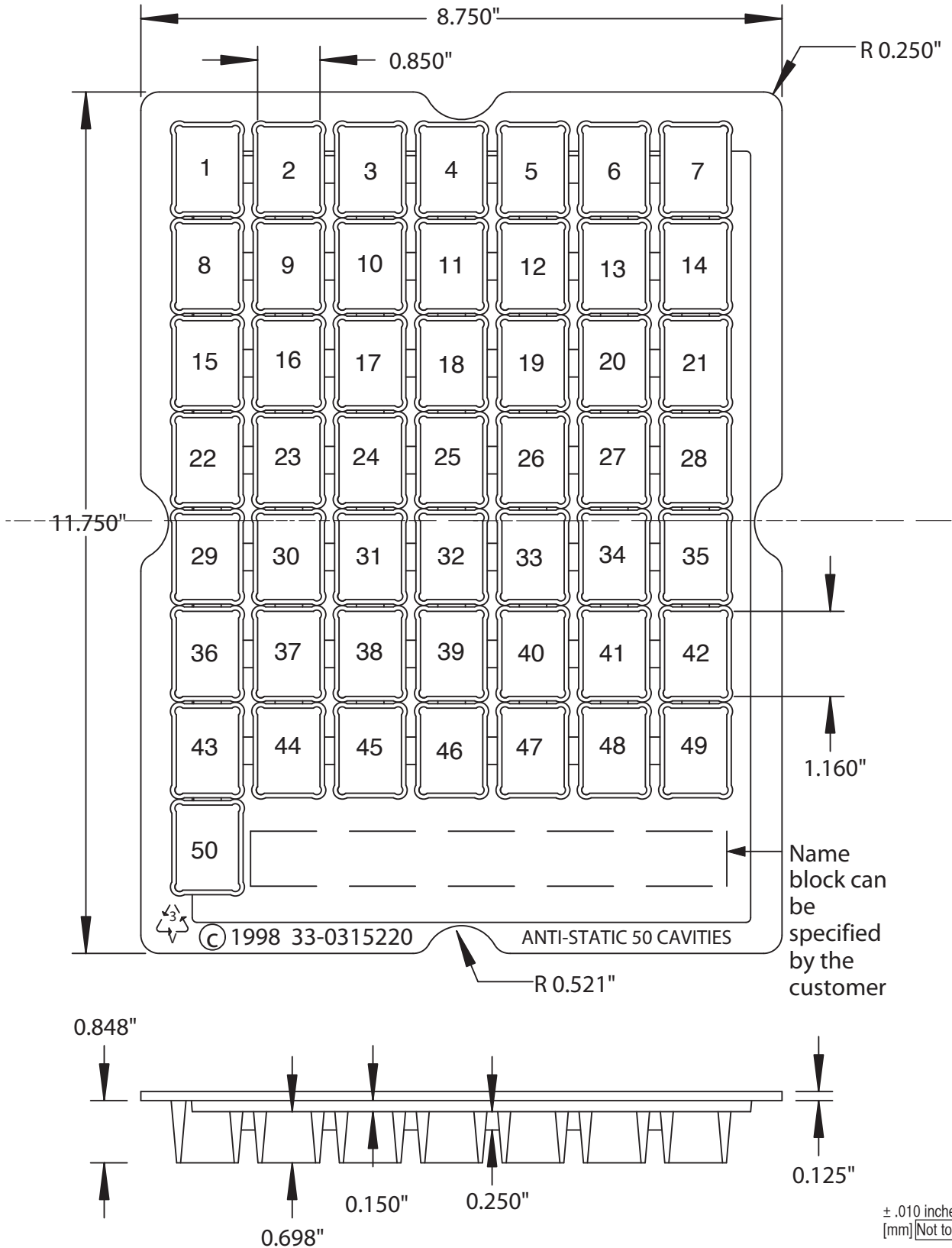
Trays

## TY85X116-B

Material: High Impact Styrene  
White (.017 Thick)  
Standard Packaging

## TY85X116-A

Material: PVC (.020 Thick)  
Rating: Clear, Anti-static to EIA-541  
Sold Separately



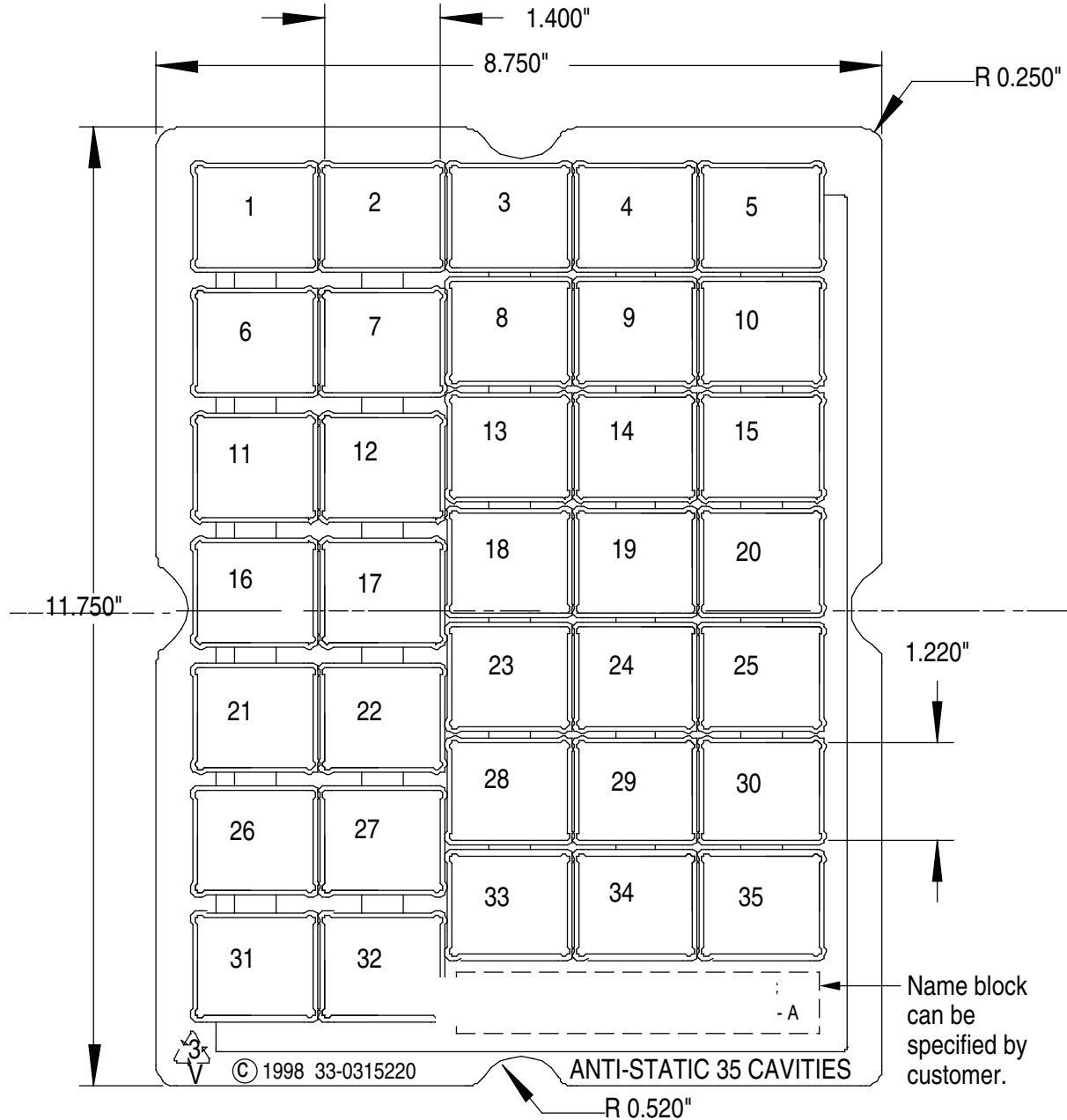


### TY122X140-B

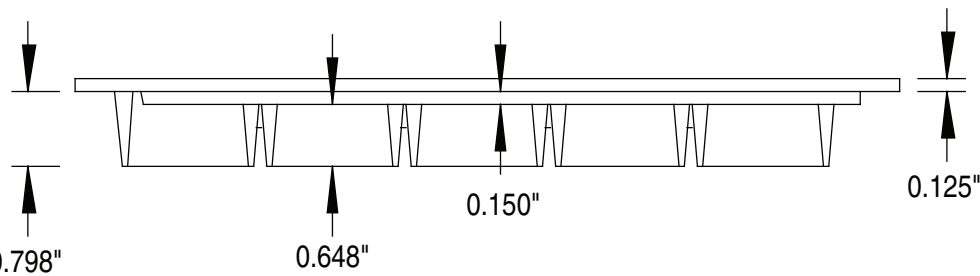
Material: High Impact Styrene  
White (.017 Thick)  
Standard Packaging

### TY122X140-A

Material: PVC (.020 Thick)  
Rating: Clear, Anti-static to EIA-541  
Sold Separately



Name block can be specified by customer.



± .010 inches  
[mm] Not to Scale

Ceramic Headers

DR Series

Surface Mount

Horizontal

Vertical

Trays

Ceramic Headers

DR Series

Surface Mount

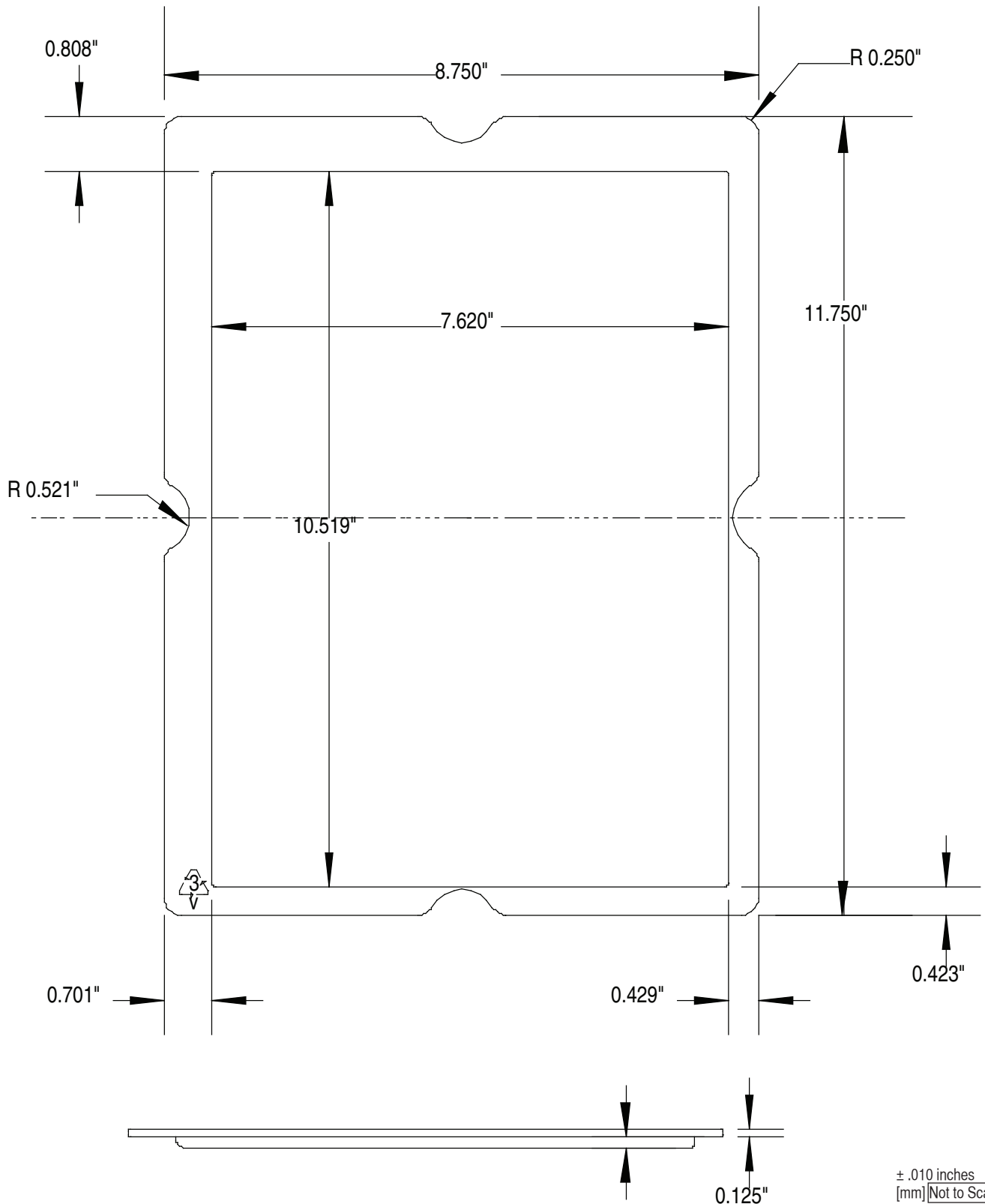
Horizontal

Vertical

Trays

**TY1000-A**  
 Material: PVC (.020 thick)  
 Rating: Clear, Anti-static to EIA-541  
 Cover for all Trays in Series

**TY1000-B**  
 Material: High Impact Styrene  
 White (.017 Thick)  
 Cover for all Trays in Series





**Custom Mold Tooling  
Terminals and Lead Frames**

# LODESTONE PACIFIC

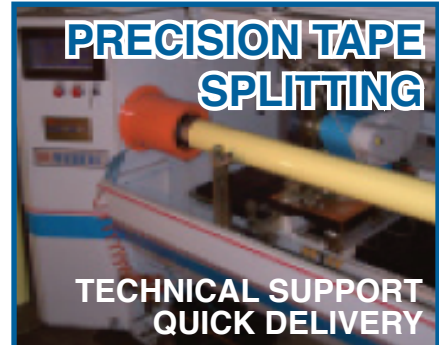
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### Bobbin Experts

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Custom Design & Tooling  
Large Inventory / Low Price  
Asian and Domestic Sources  
Through Hole & Surface Mount

### Tape Experts

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Application Engineering  
High Quality Tape Slitting  
Quick Delivery at a Low Price

## BOBBINS & HARDWARE

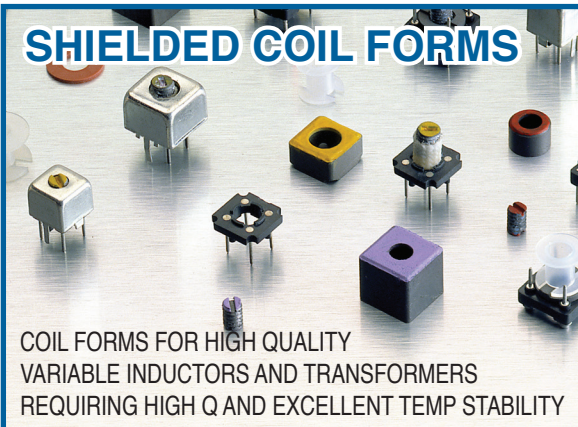


THROUGH HOLE & SURFACE MOUNT



UL No. E126174

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REQUIRING HIGH Q AND EXCELLENT TEMP STABILITY

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