

LAN Components

Pulse Transformers SMD

TLA Series TLA-6T401

SMD type 40-pin package with 1.27mm pitch terminals. This product integrates into a single package the transformers needed by four 10/100BASE-TX compliant ports. Since common-mode choke coils are built into these pulse transformers, common-mode noise suppression is excellent, and signal transmission insertion loss characteristics are outstanding.



FEATURES

- This pulse transformer is used for high frequencies, making possible low loss signal transmission.
- Excellent common-mode noise suppression.
- Conforms to ANSI standards(350μH minimum inductance[DC bias I=8mA]).
- Wire breakage problems, due to stresses resulting from automatic mounting or soldering heat, are eliminated due to separation of wire terminals and soldering terminals.
- Tape feed is possible. Compatible with reflow soldering.

APPLICATIONS

10/100BASE-TX LAN products(mainly hubs)

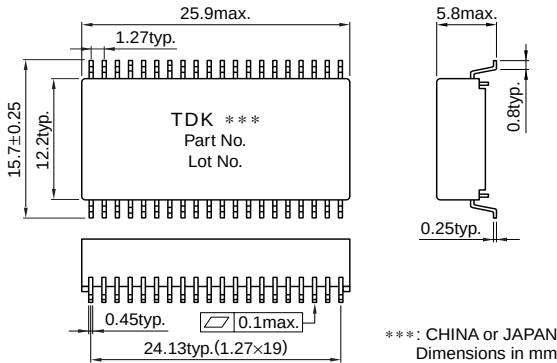
TEMPERATURE AND HUMIDITY RANGES

Operating temperature	0 to +70°C
Storage temperature	−40 to +85°C
Operating humidity	90(%)RH max. [Maximum wet-bulb temperature: 38°C, without dewing]
Storage humidity	90(%)RH max. [Maximum wet-bulb temperature: 38°C, without dewing]

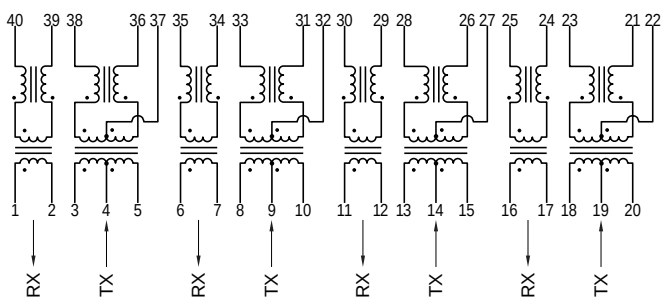
ELECTRICAL CHARACTERISTICS

Inductance	350μH min.[f=100kHz, at DC bias 8mA]
Insertion loss	1dB max.[f=0.1 to 100MHz]
Inter-winding stray capacitance	25pF max.[f=100kHz]
Withstand voltage Erms	AC.1500V[50Hz, 1min.]
Turns ratio	TX-SIDE 1CT: 1CT, RX-SIDE 1: 1

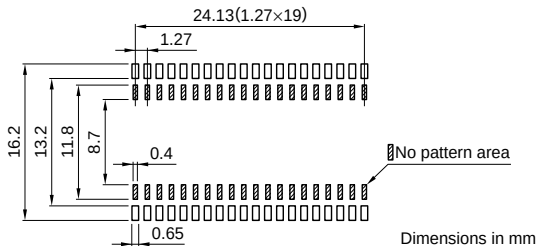
SHAPES AND DIMENSIONS



CIRCUIT DIAGRAM



RECOMMENDED PC BOARD PATTERN



• Mounting density, mounting characteristics, dimensional tolerances, etc. should be considered during circuit design.

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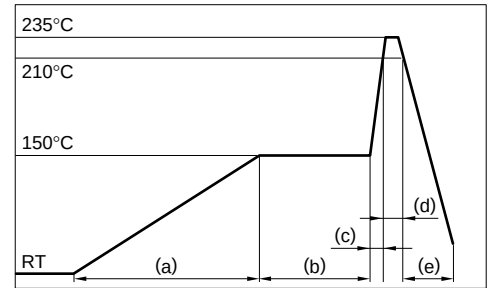
COMPONENT PARTS

Part name	Type	Remarks
Core	Ferrite core	
Wire	Polyurethane-insulated copper	
Case	Plastic	Terminals: solder coating upon copper-plated phosphor bronze
Case molding resin	Epoxy resin	

- Component part types are subject to change due to product improvements, etc.
- Product characteristics, dimensions, and appearance will not be affected by such component part changes.

RECOMMENDED SOLDERING CONDITIONS

REFLOW SOLDERING



- (a) Heat-up rate: 1°C/s
 - (b) Preheat: 90s max. at 150±10°C
 - (c) Heat-up rate: 4°C/s 1°C/s
 - (d) Peak heating 15s max. at 210°C (235°C max.)
 - (e) Natural cooling
- Temperatures are measured by thermocouple at the upper surface of the package body.
 - This recommended temperature profile is provided for reference purposes only.
 - When establishing an actual temperature profile, be sure to first confirm that there are no mounting problems upon the substrate.

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ELECTRICAL CHARACTERISTICS

Ta=25±5°C

Item	Standard	Measuring condition Terminal No.	
Turns ratio	1:1±3%	1, 2: 40, 39	
	1CT: 1CT±3%	3, 4, 5: 38, 37, 36	
	1:1±3%	6, 7: 35, 34	
	1CT: 1CT±3%	8, 9, 10: 33, 32, 31	
	1:1±3%	11, 12: 30, 29	
	1CT: 1CT±3%	13, 14, 15: 28, 27, 26	
	1:1±3%	16, 17: 25, 24	
	1CT: 1CT±3%	18, 19, 20: 23, 22, 21	
Inductance (μH)	350min.	40-39	DC bias I=8mA f=100kHz V=0.1V
	350min.	38-36	
	350min.	35-34	
	350min.	33-31	
	350min.	30-29	
	350min.	28-26	
	350min.	25-24	
	350min.	23-21	
Insertion loss (dB)	1max.	40, 39-1, 2	f=0.1 to 100MHz
	1max.	3, 5-38, 36	
	1max.	35, 34-6, 7	
	1max.	8, 10-33, 31	
	1max.	30, 29-11, 12	
	1max.	13, 15-28, 26	
	1max.	25, 24-16, 17	
	1max.	18, 20-23, 21	
Inter-winding stray capacitance (pF)	25max.	1-40	f=100kHz V=0.1V
	25max.	3-38	
	25max.	6-35	
	25max.	8-33	
	25max.	11-30	
	25max.	13-28	
	25max.	16-25	
	25max.	18-23	
Withstand voltage Erms(V)	AC.1500	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	f=50Hz, sine wave 1min
		11, 12, 13, 14, 15, 16, 17, 18, 19, 20-40	
		39, 38, 37, 36, 35, 34, 33, 32, 31, 30	
		29, 28, 27, 26, 25, 24, 23, 22, 21	

• Insertion loss values are listed as absolute values.

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