

Chip LAN Transformer Overview

Surface Mount Solutions



Features and Benefits:

- Ⓢ The TCxG PulseChip™ series of wound chip transformers and chokes developed for LAN
- Ⓢ Compatible with 1G/2.5G/5G/10GBASE-T interfaces
- Ⓢ Option for Non-PoE, PoE-60W, and PoE-90W
- Ⓢ High-quality, fully automated winding and assembly
- Ⓢ Conforms to the RoHS directive
- Ⓢ Operating temperature range: -40 to +85°C (including self-temperature rise)

Application

Ethernet LAN interfaces on various devices
 Industrial network devices, Laptops and switches
 Critical communication equipment and
 Digital consumer electronics and appliances

Electrical Specification @ 25 °C, Operating Temperature: -40 °C ~ +85 °C

Part Number ¹	Description	Mechanical	Shecmatic	Inductance 100kHz,0.1V (uH, Min.)	Insertion Loss (dB MAX)							Rated current (uH, Min.)	Turns ratio	Input - Output Isolation (60s,1mA Max.)
					1 MHz	100 MHz	125 MHz	200 MHz	250 MHz	400 MHz	500 MHz			
TC1G00	1G, Non-PoE	Fig.A	Circuit A	240	-1.0	-1.5	/	/	/	/	/	N/A	1CT : 1CT	1500Vac
TC1G00P	1G, PoE-60W	Fig.A	Circuit A	180	-1.0	-1.0	-1.2	/	/	/	/	600	1CT : 1CT	1500Vac
TC2G00	2.5G, Non-PoE	Fig.A	Circuit A	180	-1.0	-1.0	-1.2	-1.4	/	/	/	N/A	1CT : 1CT	1500Vac
TC2G00P	2.5G, PoE-60W	Fig.A	Circuit A	180	-1.0	-1.0	-1.2	-1.4	/	/	/	600	1CT : 1CT	1500Vac
TC5G00	5G, Non-PoE	Fig.A	Circuit A	180	-1.0	-1.0	-1.2	-1.4	-2.0	/	/	N/A	1CT : 1CT	1500Vac
TC5G00P	5G, PoE-60W	Fig.A	Circuit A	180	-1.0	-1.0	-1.2	-1.4	-2.0	/	/	600	1CT : 1CT	1500Vac
TC10G00	10G, Non-PoE	Fig.A	Circuit A	120	-1.0	-1.0	-1.6	-1.6	-1.6	-2.0	-3.0	N/A	1CT : 1CT	1500Vac
TC10G00P	10G, PoE-60W	Fig.A	Circuit A	120	-1.0	-1.0	-1.6	-1.6	-1.6	-2.0	-3.0	600	1CT : 1CT	1500Vac
TC1G00IP	1G, PoE-90W	Fig.B	Circuit A	120	-1.0	-1.0	-1.4	/	/	/	/	1000	1CT : 1CT	1500Vac
TC2G00IP	2.5G, PoE-90W	Fig.B	Circuit A	120	-1.0	-1.0	-1.2	-1.4	/	/	/	1000	1CT : 1CT	1500Vac
TC5G00IP	5G, PoE-90W	Fig.B	Circuit A	120	-1.0	-1.0	-1.2	-1.2	-2.0	/	/	1000	1CT : 1CT	1500Vac
TC10G00IP	10G, PoE-90W	Fig.B	Circuit A	100	-1.0	-1.0	-1.6	-1.6	-1.6	-2.0	-3.0	1000	1CT : 1CT	1500Vac

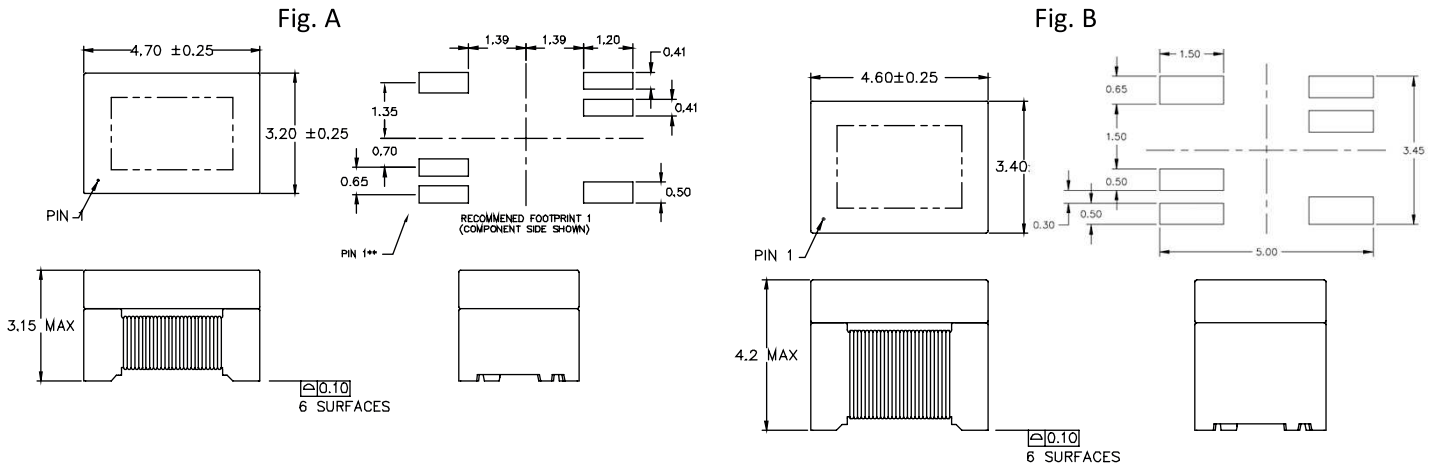
Description:

- a. Ferrite drum core construction
- b. Magnetically shielded
- c. Enameled copper wire: H class
- d. Product weight: 0.015g (ref.)
- e. Moisture sensitivity Level 1
- f. Products comply with RoHS' requirements

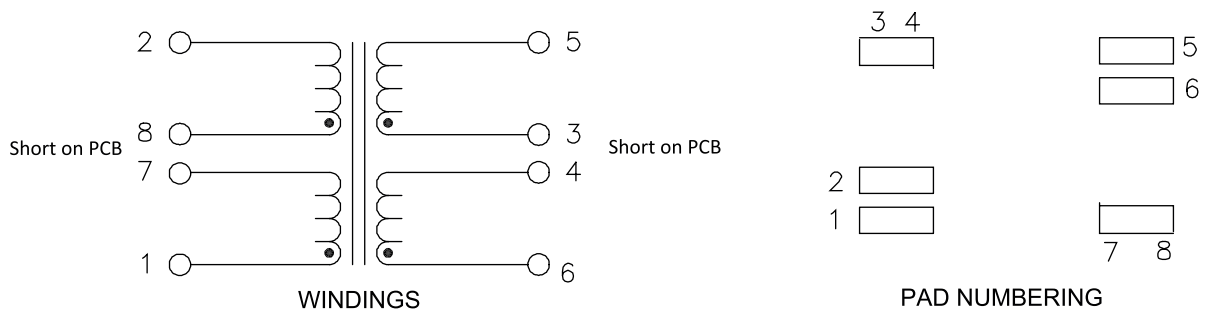
Temperature Performance parameters:

- a. Storage temp: -40°C to +125°C
- b. Operating temp: -40°C to +85°C (Temp. rise included)
- c. Resistance to solder heat: 260°C 10 secs.

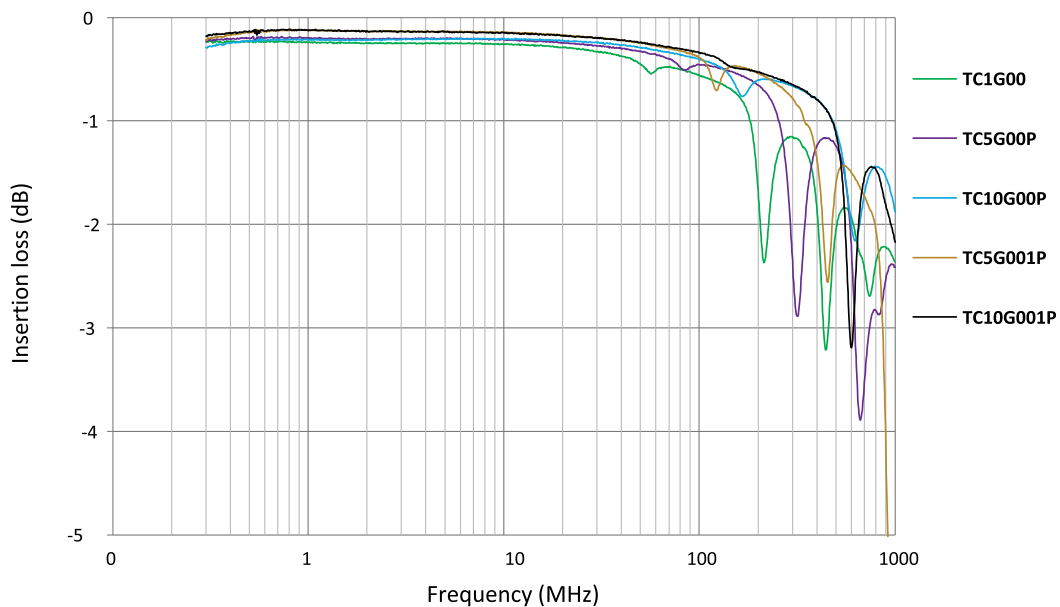
Mechanical



Schematic



S parameter



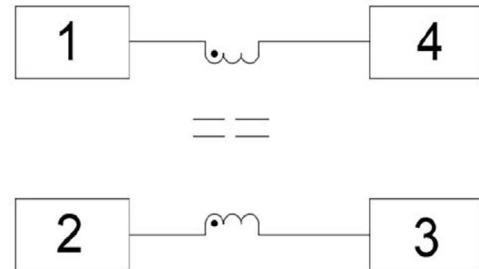
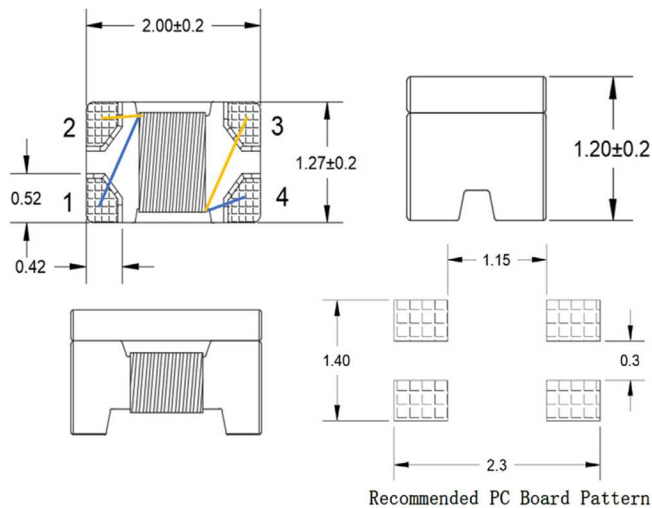
Recommended Choke

Electrical Specification @ 25 °C, Operating Temperature: -40 °C ~ +85 °C

ChipTransformer Part Number	Description	CMC Chip Recommend					
		Part Number	Turns Ratio ±3%	Common Mode Impedance (Ω) Typ. at 100MHz	DC Resistance (Ω) Max.	Rated Voltage (Vdc) Max.	IR (Ω) Min.
TC1G00	1G, Non-PoE	PE-0805GCMC801STS	1:1	800	0.9	50	10M
TC1G00P	1G, PoE-60W	PE-0805GCMC381STS	1:1	380	0.6	50	10M
TC2G00	2.5G, Non-PoE						
TC2G00P	2.5G, PoE-60W						
TC5G00	5G, Non-PoE						
TC5G00P	5G, PoE-60W						
TC10G00	10G, Non-PoE	PE-0805GCMC261STS	1:1	260	0.6	50	10M
TC10G00P	10G, PoE-60W						
TC1G001P	1G, PoE-90W	PE-0805GCMC381STS	1:1	380	0.6	50	10M
TC2G001P	2.5G, PoE-90W						
TC5G001P	5G, PoE-90W						
TC10G001P	10G, PoE-90W	PE-0805GCMC261STS	-1.0	260	0.6	50	10M

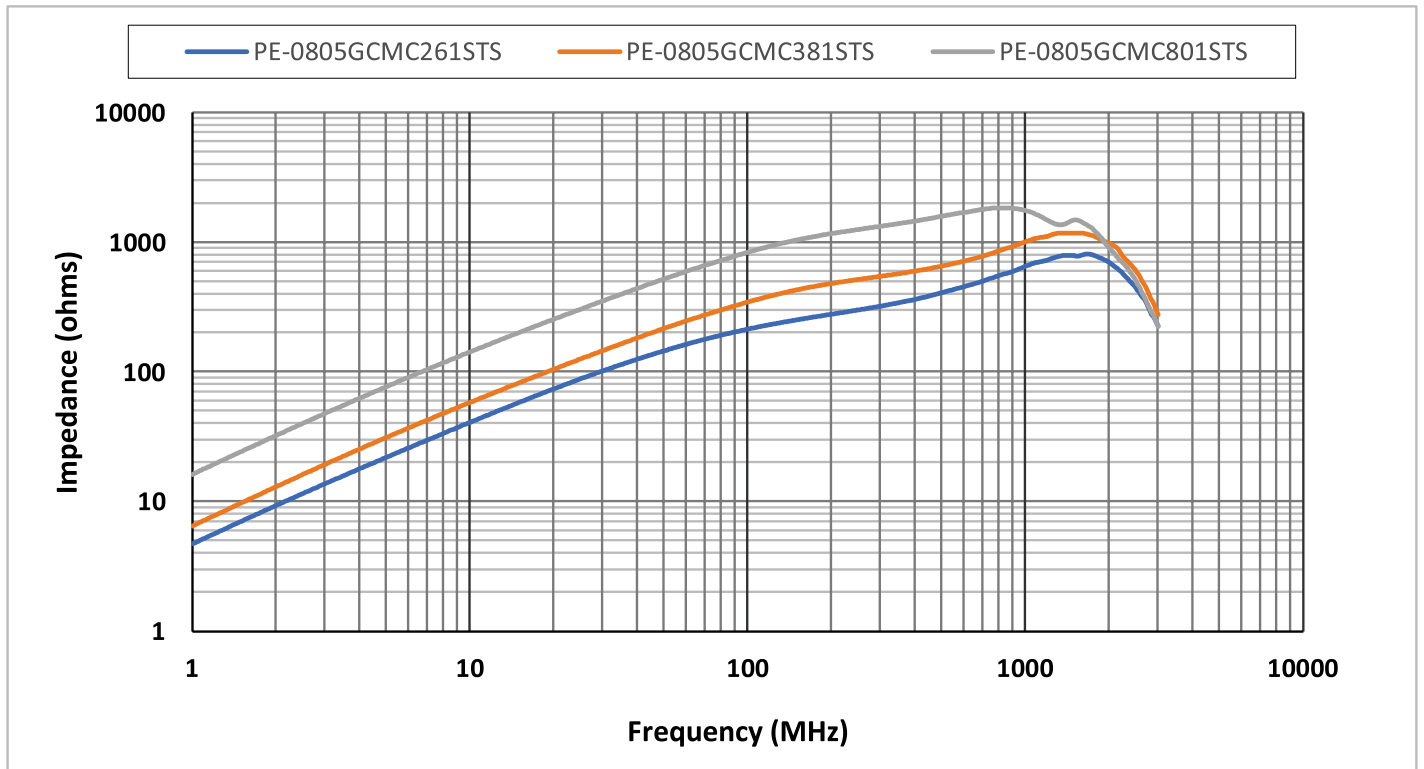
Mechanical

Schematic



Recommended Choke

Typical Impedance vs Frequency performance

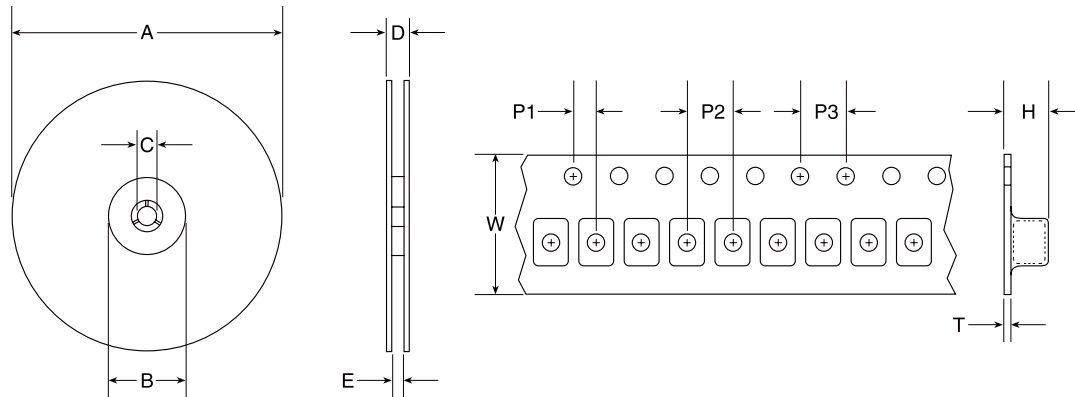


Common Mode Chokes For LAN Overview

Surface Mount Solutions

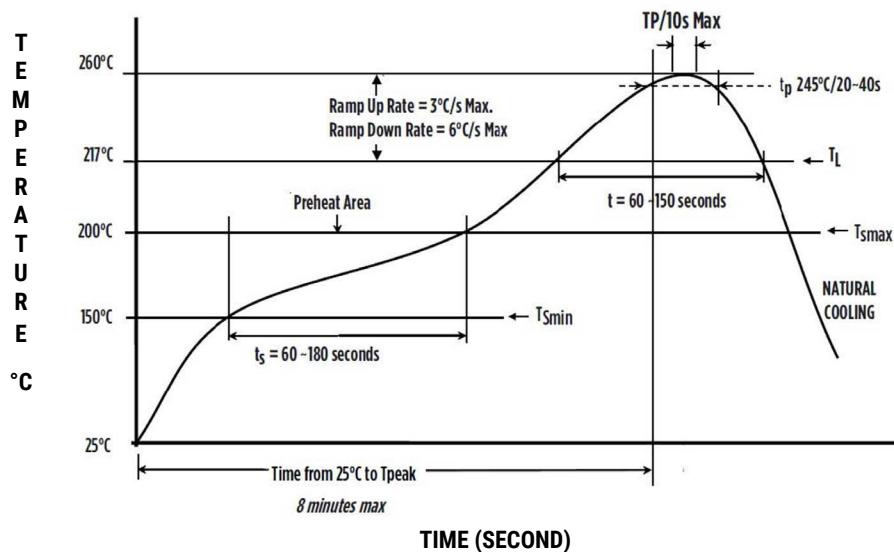
Tape and Reel Specifications

CARRIER TAPE - SEE TABLES BELOW



Series	Parts per Reel	Reel Dimensions (mm)					Tape Dimensions (mm)					
		A	B	C	D	E	W	P1	P2	P3	H	T
PE-0805GCMC	2000	178	60	13.5	11.5	9.0	8.0	2.0	4.0	4.0	1.5	0.25
TCxGxx/P	2000	330	103	13.5	16.5	12.5	12.0	2.0	8.0	4.0	3.6	0.3

Reflow Soldering Profile



For More Information:

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