

PulseChip™ LAN Transformer Overview

Surface Mount wire-wound Solutions



Features and Benefits:

- TCxG PulseChip™ series of wire-wound ferrite chip transformers and chokes exclusively 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 for PoE designs)

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
TC1G001P	1G, PoE-90W	Fig.B	Circuit A	120	-1.0	-1.0	-1.4	/	/	/	/	1000	1CT : 1CT	1500Vac
TC2G001P	2.5G, PoE-90W	Fig.B	Circuit A	120	-1.0	-1.0	-1.2	-1.4	/	/	/	1000	1CT : 1CT	1500Vac
TC5G001P	5G, PoE-90W	Fig.B	Circuit A	120	-1.0	-1.0	-1.2	-1.2	-2.0	/	/	1000	1CT : 1CT	1500Vac
TC10G001P	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

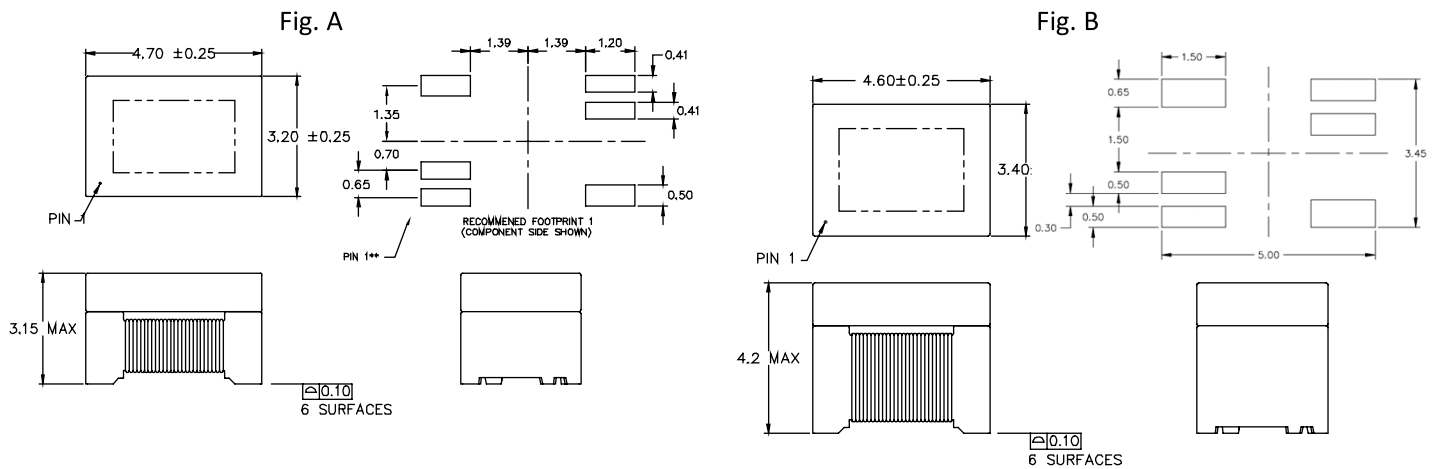
Description:

- Ferrite drum core construction
- Magnetically shielded
- Enameled copper wire: H class
- Product weight: 0.015g (ref.)
- Moisture sensitivity Level 1
- Products comply with RoHS² requirements

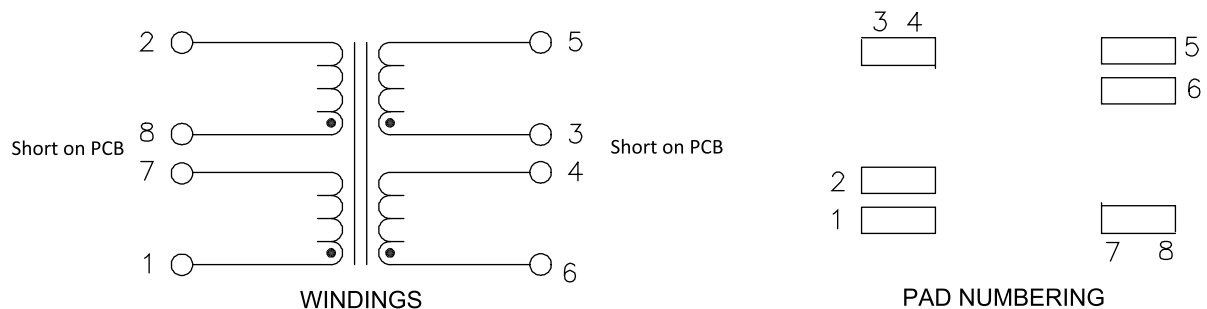
Temperature Performance parameters:

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

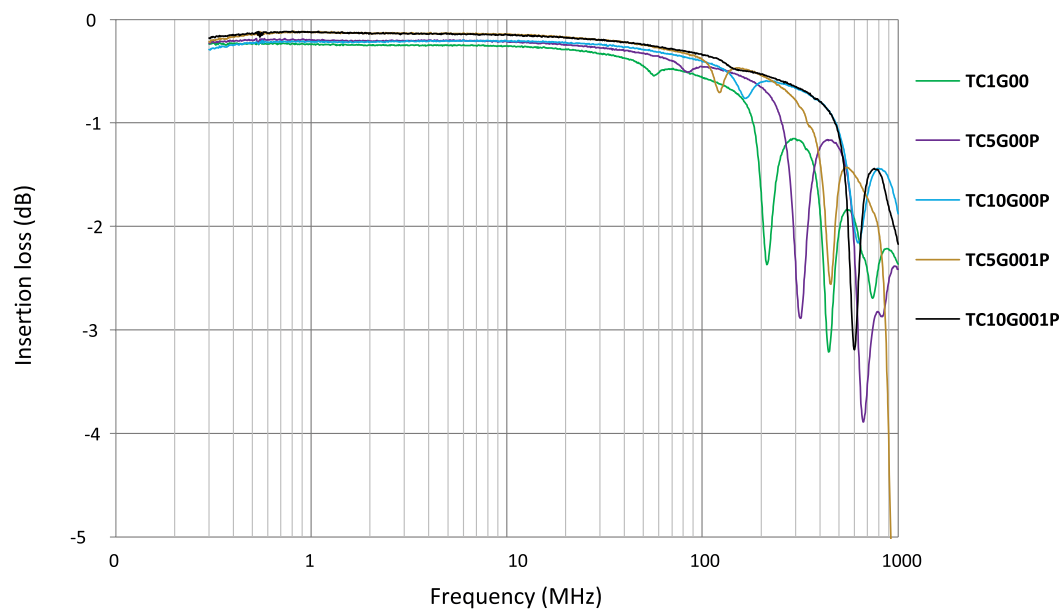
Mechanical



Schematic



S parameter



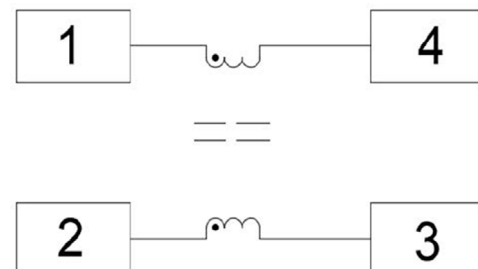
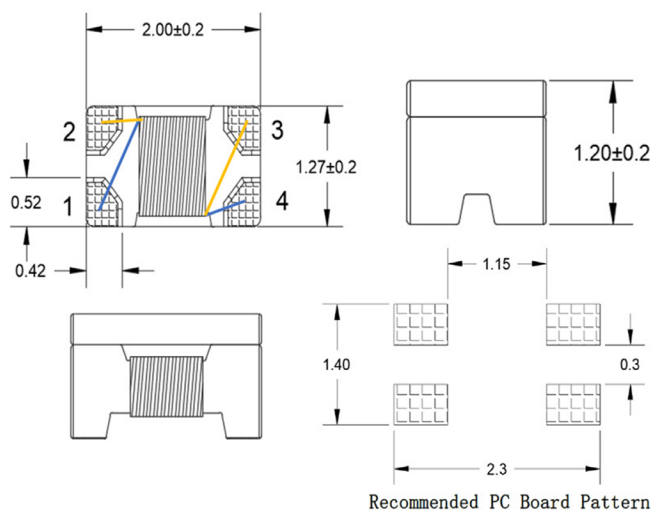
Recommended Choke

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

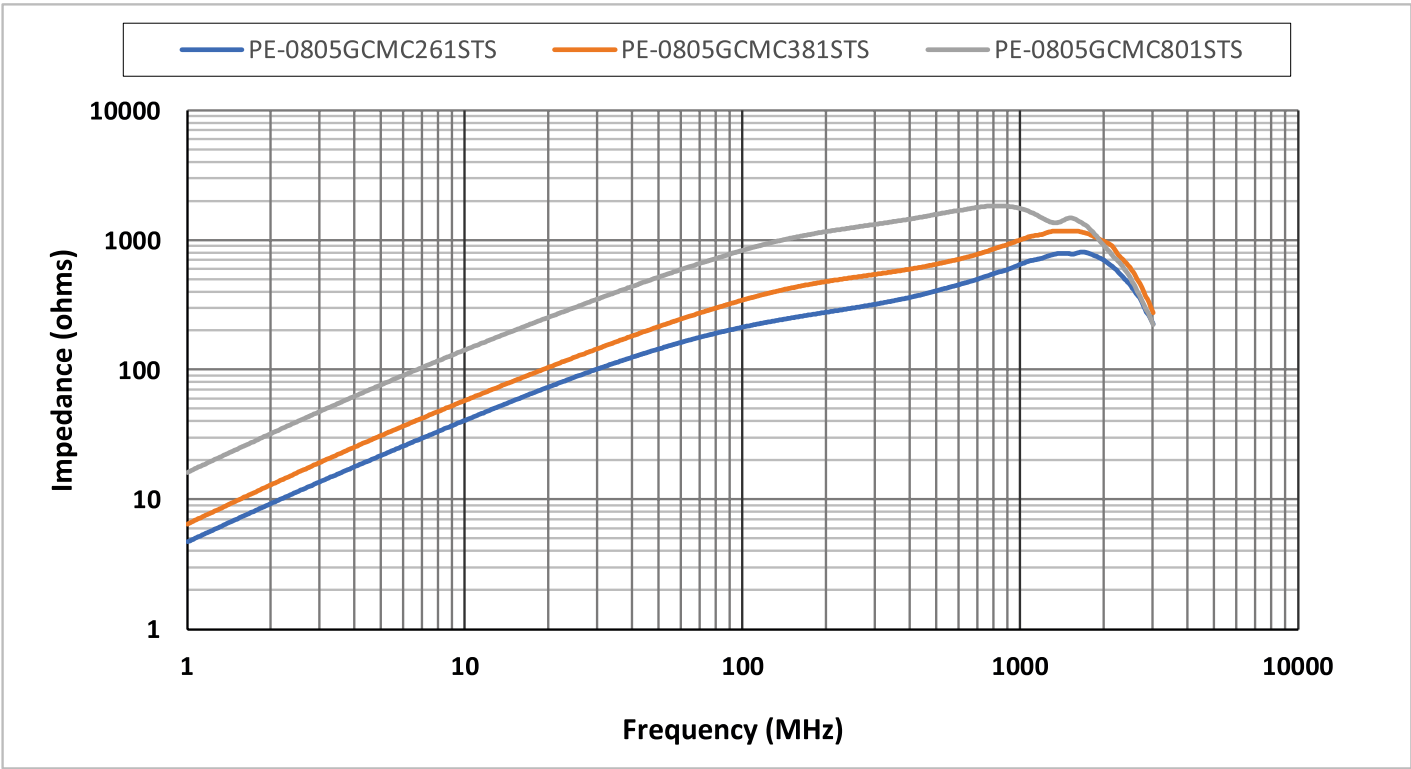
Mechanical

Schematic



Recommended Choke

Typical Impedance vs Frequency performance

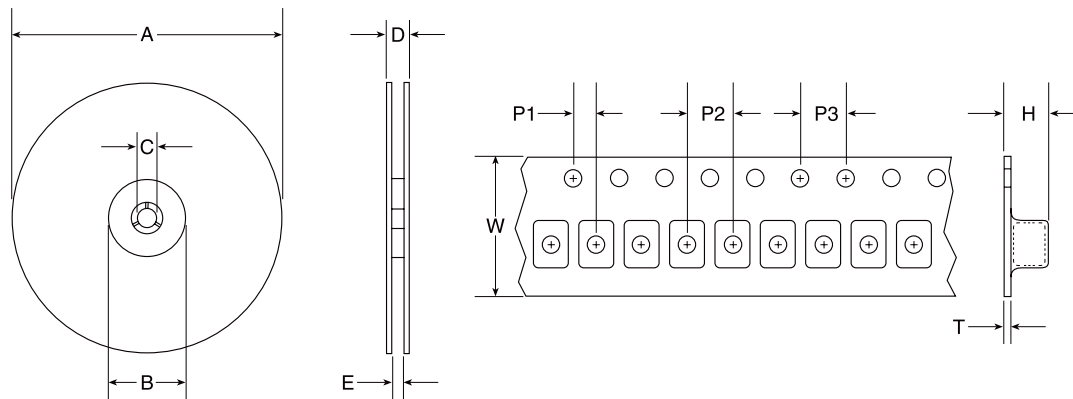


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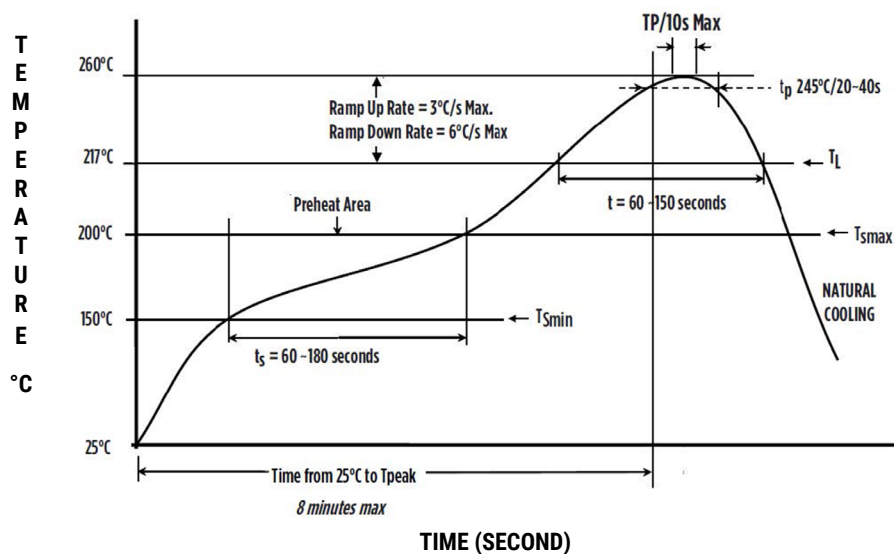
Tape and Reel Specifications

CARRIER TAPE - SEE TABLES BELOW



Reel Dimensions (mm)							Tape Dimensions (mm)					
Series	Parts per Reel	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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