PulseChip™ Transformer Overview

Surface Mount wire-wound Solutions

Pulse
a YAGEO company



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-qualit, 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
Industiral 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:

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

Fig. A

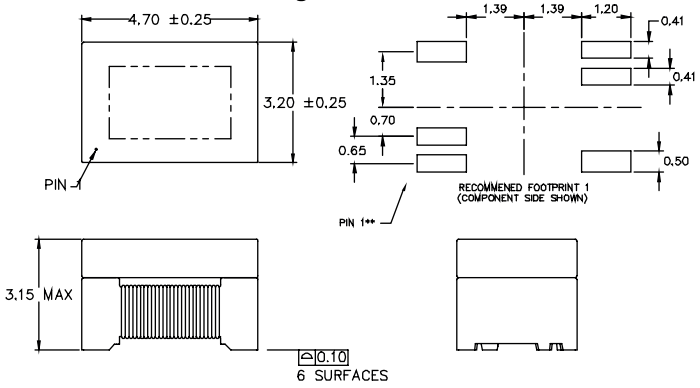
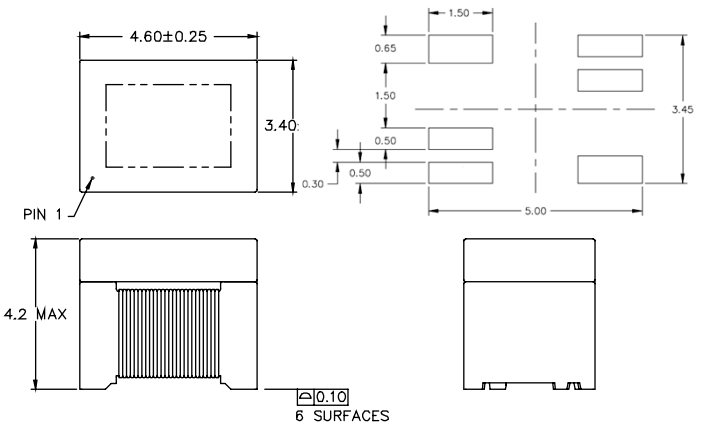
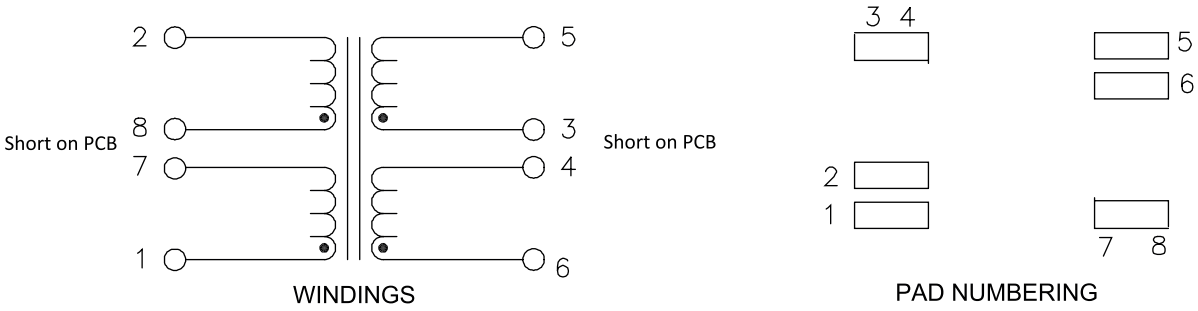


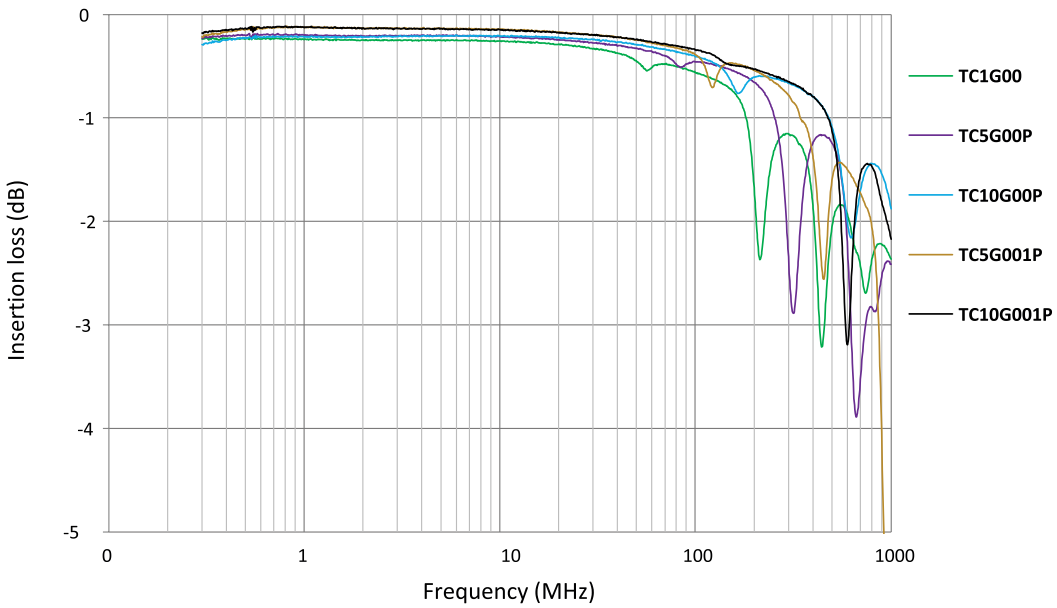
Fig. B



Schematic



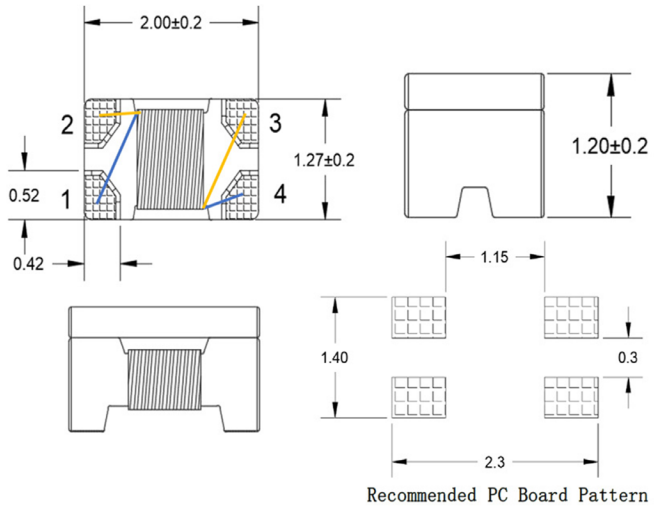
S parameter



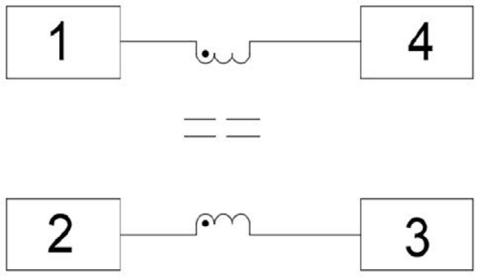
Recommended Choke

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

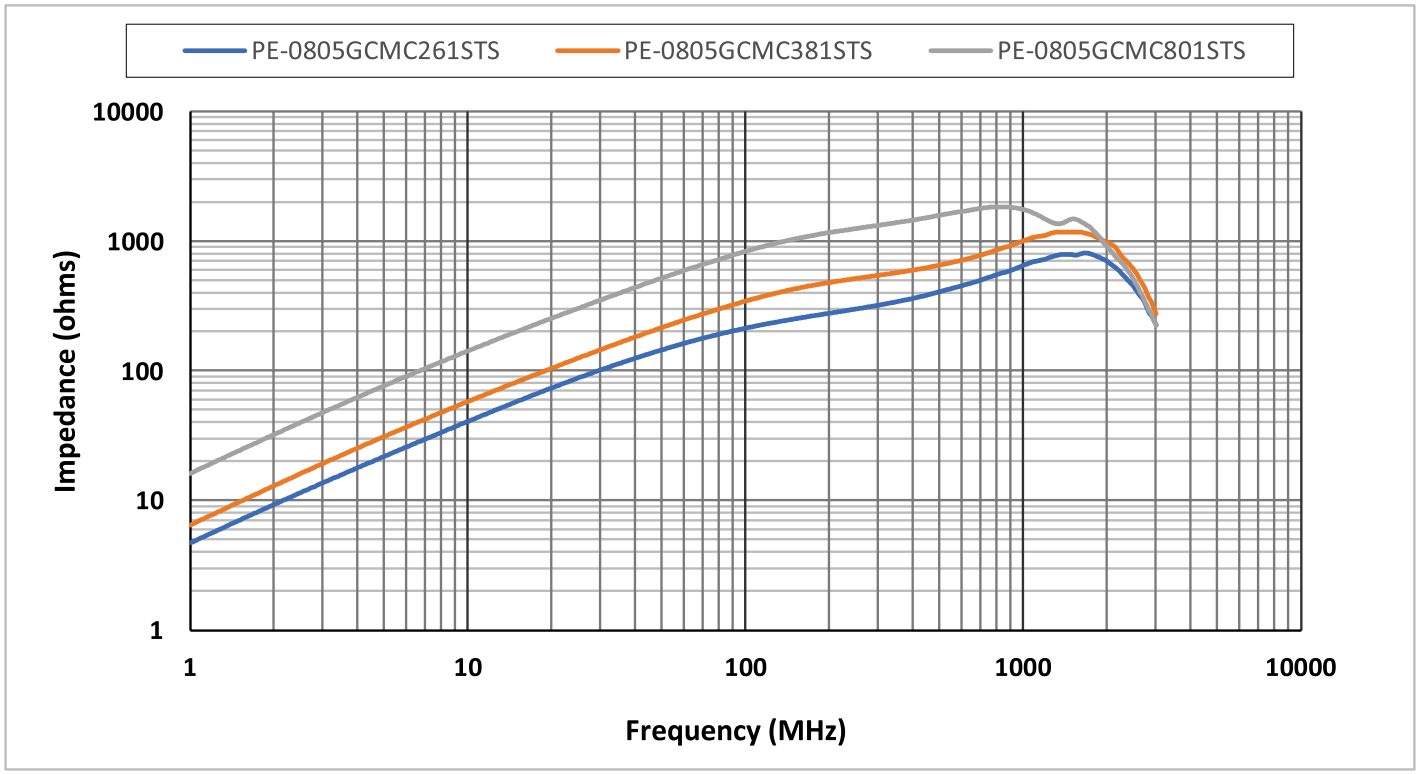


Schematic



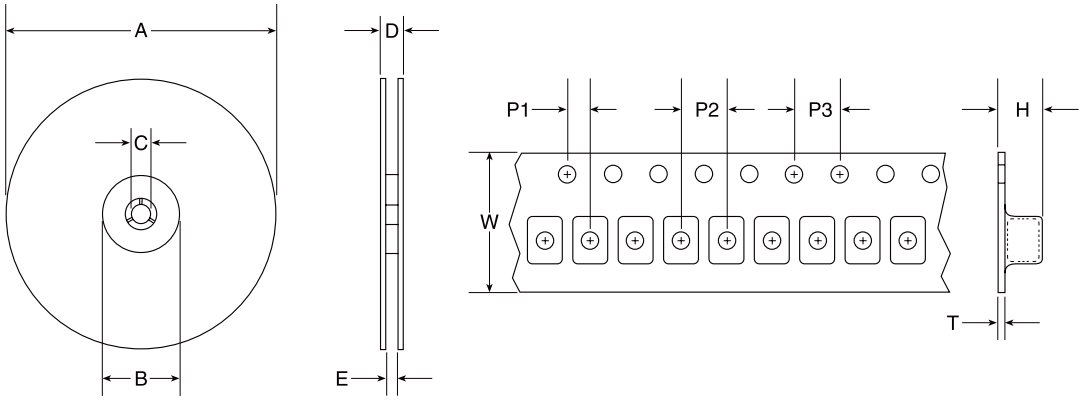
Recommended Choke

Typical Impedance vs Frequency performance



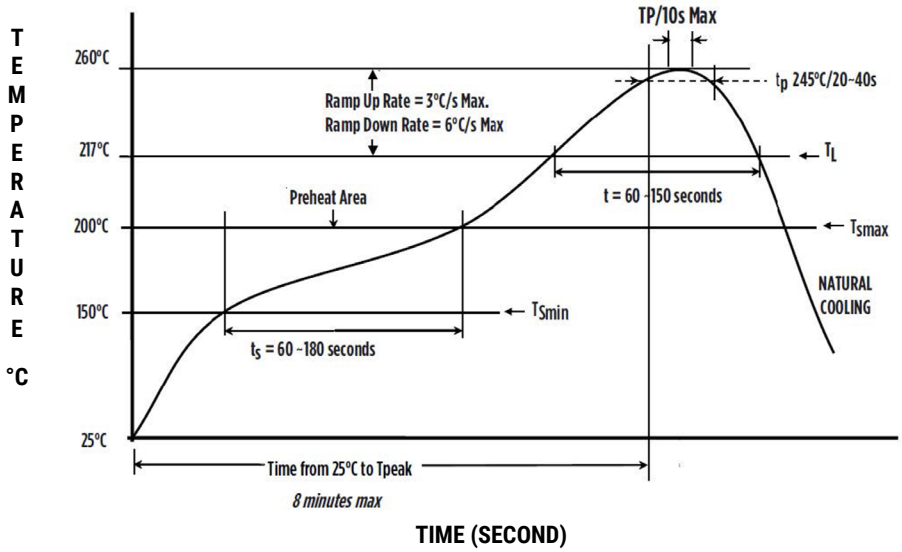
Tape and Reel Specifications

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:

Americas - prodinfonetworkamericas@yageo.com | **Europe -** prodinfonetworkemea@yageo.com | **Asia -** prodinfonetworkapac@yageo.com

Performance warranty of products offered on this data sheet is limited to the parameters specified. Data is subject to change without notice. Other brand and product names mentioned herein may be trademarks or registered trademarks of their respective owners. © Copyright, 2022. Pulse Electronics, Inc. All rights reserved.