



### 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 <sup>1</sup> | Description   | Mechanical | Schematic | Inductance<br>100kHz,0.1V<br>(uH, Min.) | Insertion Loss<br>(dB MAX) |            |            |            |            |            |            | Rated current<br>(uH, Min.) | Turns ratio | Input - Output<br>Isolation<br>(60s,1mA Max.) |
|--------------------------|---------------|------------|-----------|---|----------------------------|------------|------------|------------|------------|------------|------------|-----------------------------|-------------|---|
|                          |               |            |           |   | 1<br>MHz                   | 100<br>MHz | 125<br>MHz | 200<br>MHz | 250<br>MHz | 400<br>MHz | 500<br>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<sup>2</sup> 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

TCxG00, TCxG00P

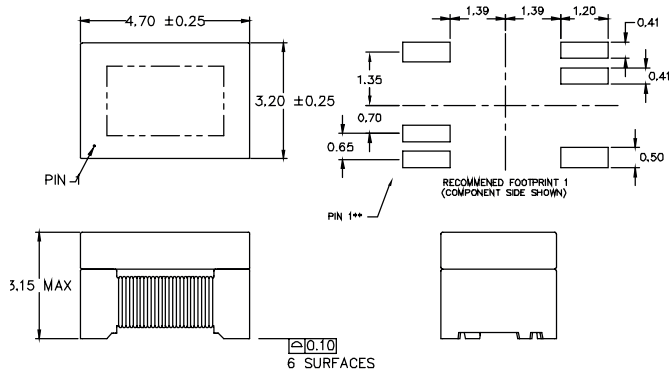


Fig. A

TCxG001P

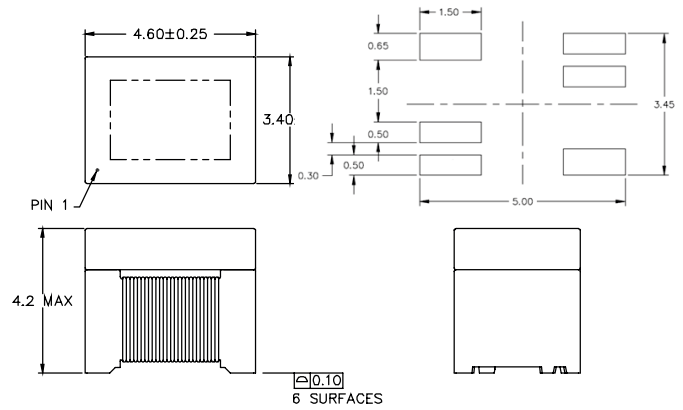
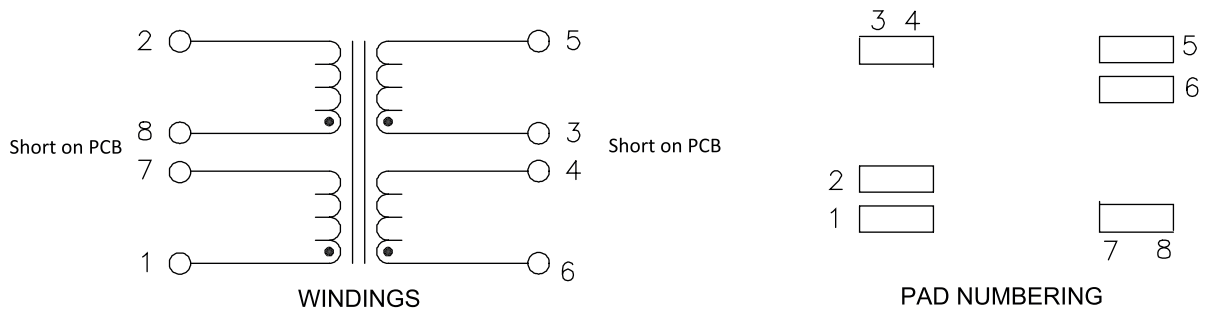
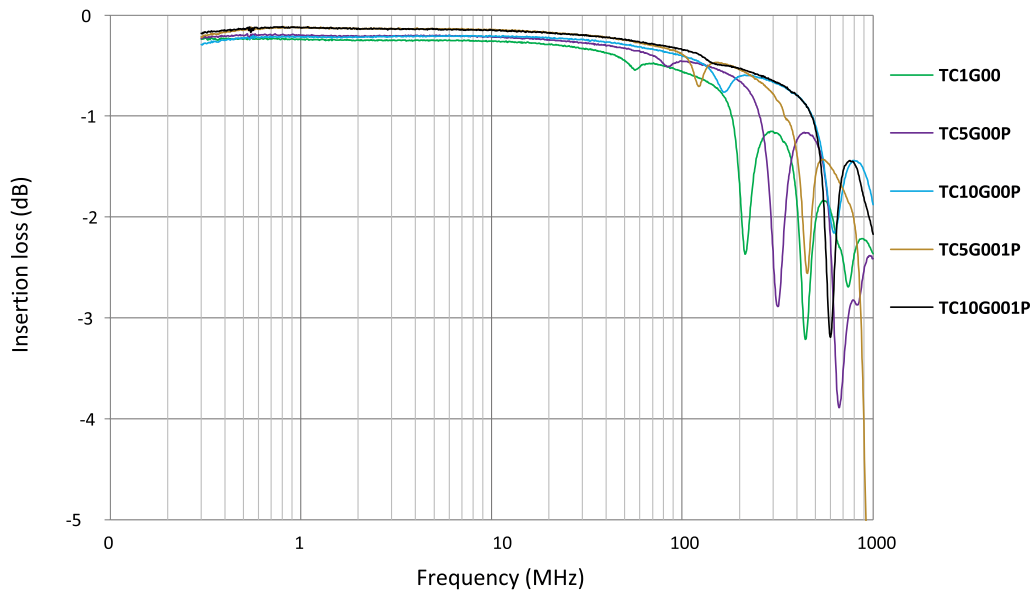


Fig. B

### Schematic



### S parameter



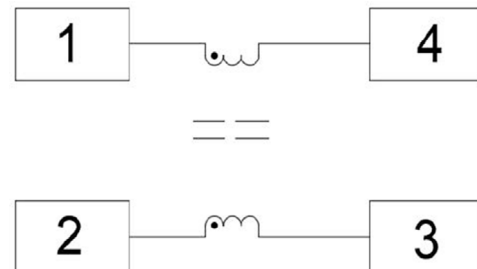
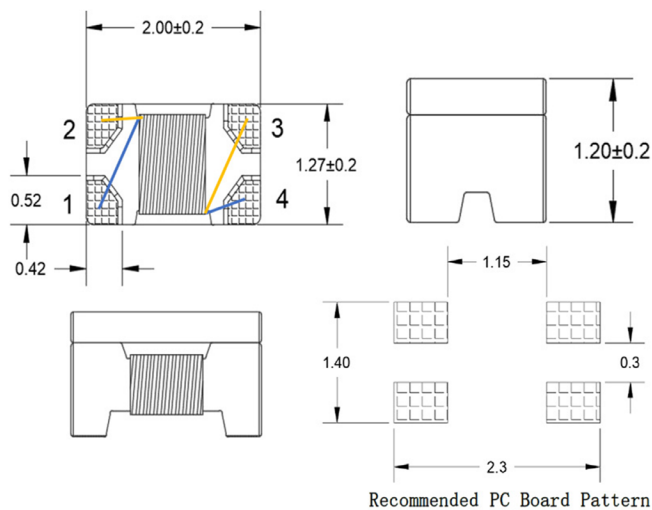
### Recommended Choke

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

| ChipTransformer Part Number | Description   | Data Rate CMC Chip Recommendation |                 |  |                        |                          |             |
|-----------------------------|---------------|-----------------------------------|-----------------|--|------------------------|--------------------------|-------------|
|                             |               | 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                    | 70                       | 10M         |
| TC1G00P                     | 1G, PoE-60W   | PE-0805GCMC381STS                 | 1:1             | 380                                      | 0.6                    | 70                       | 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                    | 70                       | 10M         |
| TC10G00P                    | 10G, PoE-60W  |                                   |                 |  |                        |                          |             |
| TC1G001P                    | 1G, PoE-90W   | PE-0805GCMC381STS                 | 1:1             | 380                                      | 0.6                    | 70                       | 10M         |
| TC2G001P                    | 2.5G, PoE-90W |                                   |                 |  |                        |                          |             |
| TC5G001P                    | 5G, PoE-90W   |                                   |                 |  |                        |                          |             |
| TC10G001P                   | 10G, PoE-90W  | PE-0805GCMC261STS                 | 1:1             | 260                                      | 0.6                    | 70                       | 10M         |

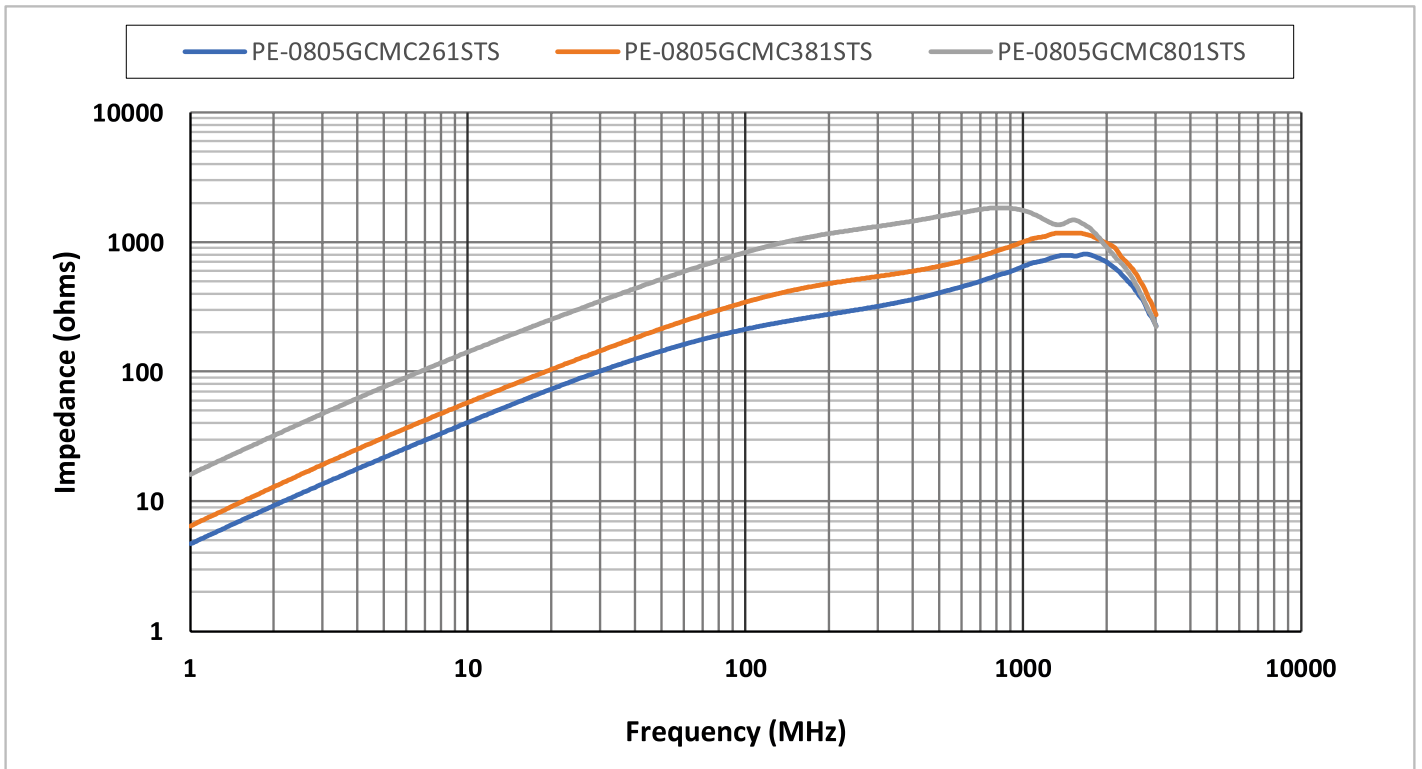
### Mechanical

### Schematic



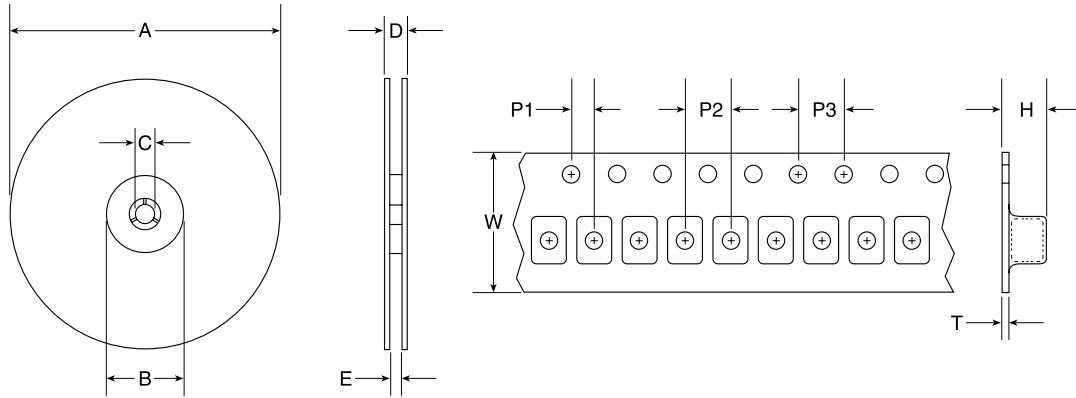
### Recommended Choke

### Typical Impedance vs Frequency performance



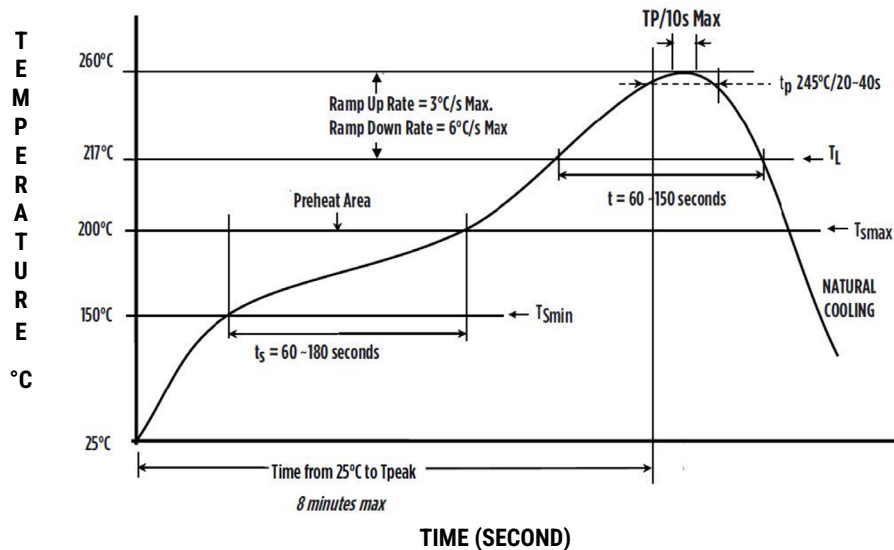
## Tape and Reel Specifications

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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