

LOW PROFILE POWER INDUCTOR TPC SERIES

INTRODUCTION

The TPC series are characterized by low profile, and high current inductor used in portable telephone, PC, hard disk drive, and other electronic equipment. Several dimensions are available.

FEATURES

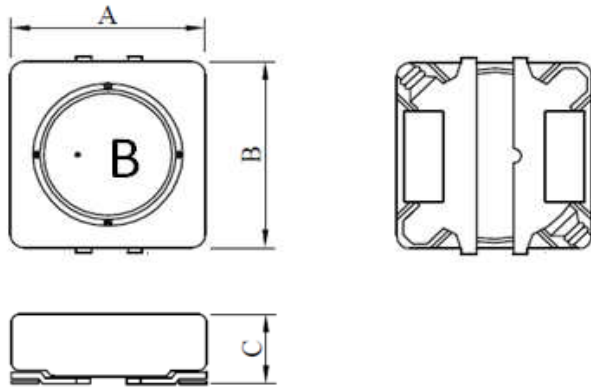
- * High magnetic shield construction should actualize high resolution.
- * High current performance.
- * The products do not contain lead and laser welding.
- * Available for automatic mounting in tape and reel package.

PART NUMBER

TPC 2D11 F T 1R2 N -□□
 1 2 3 4 5 6 Internal Code

1 Product Type

2 Shape and Dimension



| Size | A (mm) | B (mm) | C (max. mm) |
|---------|-----------|-----------|-------------|
| TPC2D11 | 3.2 ± 0.1 | 3.2 ± 0.1 | 1.2 |
| TPC2D14 | 3.2 ± 0.1 | 3.2 ± 0.1 | 1.5 |
| TPC2D18 | 3.2 ± 0.1 | 3.2 ± 0.1 | 2.0 |
| TPC3D11 | 4.2 ± 0.1 | 4.2 ± 0.1 | 1.2 |
| TPC3D16 | 4.2 ± 0.1 | 4.2 ± 0.1 | 1.8 |

3 Shielding Type

4 Taping

5 Inductance

1R0 = 1.0uH 100 = 10uH

6 Tolerance

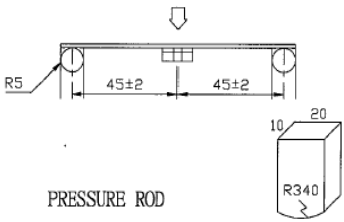
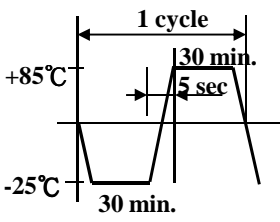
M = ± 20% N = ± 30%

TPC 2D14 SERIES

| Part No. | Inductance (uH) | Test Freq. | Tolerance | DCResistance (mΩ) | | Rated DC current (A) | | Marking |
|----------------------|--------------------|---------------|-----------|----------------------|------|-------------------------|------|---------|
| | | | | Max. | Typ. | Idc1 | Idc2 | |
| TPC 2D14 FT 1R0 □-□□ | 1.0 | 100 KHz, 1V | N | 70 | - | 1.90 | 1.90 | ·A |
| TPC 2D14 FT 1R5 □-□□ | 1.5 | 100 KHz, 1V | N | 88 | 70 | 1.50 | 1.60 | ·C |
| TPC 2D14 FT 1R8 □-□□ | 1.8 | 100 KHz, 1V | N | 97 | 77 | 1.30 | 1.50 | ·D |
| TPC 2D14 FT 2R2 □-□□ | 2.2 | 100 KHz, 1V | N | 111 | 89 | 1.20 | 1.30 | ·E |
| TPC 2D14 FT 2R7 □-□□ | 2.7 | 100 KHz, 1V | N | 123 | 98 | 1.20 | 1.26 | ·F |
| TPC 2D14 FT 3R3 □-□□ | 3.3 | 100 KHz, 1V | N | 138 | 110 | 1.20 | 1.12 | ·G |
| TPC 2D14 FT 3R9 □-□□ | 3.9 | 100 KHz, 1V | N | 145 | 116 | 1.00 | 1.09 | ·H |
| TPC 2D14 FT 4R7 □-□□ | 4.7 | 100 KHz, 1V | N | 199 | 159 | 0.95 | 0.95 | ·I |
| TPC 2D14 FT 5R6 □-□□ | 5.6 | 100 KHz, 1V | N | 217 | 174 | 0.85 | 0.91 | ·J |
| TPC 2D14 FT 6R8 □-□□ | 6.8 | 100 KHz, 1V | N | 284 | 227 | 0.75 | 0.79 | ·K |
| TPC 2D14 FT 8R2 □-□□ | 8.2 | 100 KHz, 1V | N | 304 | 243 | 0.75 | 0.74 | ·L |
| TPC 2D14 FT 100 □-□□ | 10 | 100 KHz, 1V | M | 391 | 313 | 0.60 | 0.65 | ·M |
| TPC 2D14 FT 120 □-□□ | 12 | 100 KHz, 1V | M | 448 | 359 | 0.55 | 0.55 | ·N |
| TPC 2D14 FT 220 □-□□ | 22 | 100 KHz, 1V | M | 773 | 619 | 0.45 | 0.48 | ·Q |
| TPC 2D14 FT 330 □-□□ | 33 | 100 KHz, 1V | M | 1283 | 1027 | 0.35 | 0.29 | ·S |

1. Inductance is measured in HP-4285A Precision LCR Meter.
2. RDC is measured in HP 4338B mill ohm meter.(or equivalent).
3. Tolerance : M =20% , N=30%
4. Idc1 : Based on inductance change ($\Delta L/L_0 : \leq -35\%$)
5. Idc2 : Based on temperature rise ($\Delta T : 40^\circ\text{C TYP.}$)

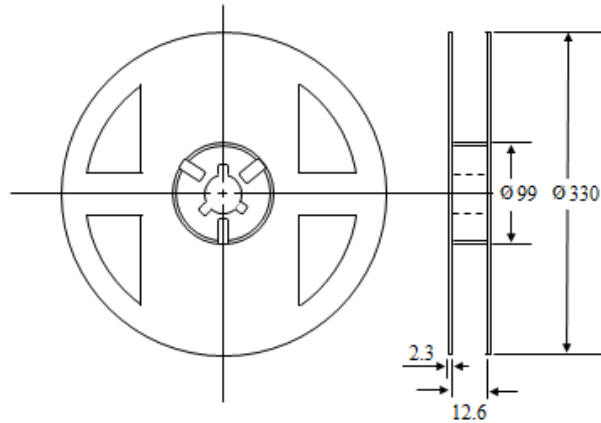
MAGNETIC SHIELD POWER INDUCTOR

| ITEM | SPECIFICATION | TEST CONDITION |
|--------------------------------|---|--|
| Solderability | The metalized area must have 90% minimum solder coverage. | Dip pads in flux and dip in solder pot(NP303) at 240°C ±5°C. |
| Substrate Bending | $\Delta L/L_0 : \leq \pm 10\%$ There shall be no mechanical damage or electrical damage. | The sample shall be soldered onto the printed circuit board and a load applied until the figure in the arrow direction is made approximately 3mm(keep time 30 seconds) F(Pressurization)  |
| Vibration | $\Delta L/L_0 : \leq \pm 10\%$ There shall be no mechanical damage | Solder specimen inductor on the test printed circuit board. Apply vibrations in each of the x,y and z directions for 2 house for a total of 6 hours. Frequency : 10~50 Hz Amplitude : 1.5mm |
| High temperature resistance | $\Delta L/L_0 : \leq \pm 10\%$ There shall be no mechanical damage or electrical damage. | The sample shall be left for 96 hours in an atmosphere with a temperature of 105±2°C and a normal humidity. Upon completion of the measurement shall be made after the sample has been left in a normal temperature and normal humidity for 1 hour. |
| Low temperature | $\Delta L/L_0 : \leq \pm 10\%$ There shall be no mechanical damage or electrical damage. | The sample shall be left for 96 hours in an atmosphere with a temperature of -40±2°C. Upon completion of the test, the measurement shall be made after the sample has been left in a normal temperature and normal humidity for 1 hour. |
| Thermal shock | $\Delta L/L_0 : \leq \pm 10\%$ There shall be no damage of problems | The sample shall be subject to 10 continuous cycles, such as shown in the following temperature cycle:  Measure the test items after leaving the inductors at room temperature and humidity for 1 hours. |
| Moisture storage | $\Delta L/L_0 : \leq \pm 10\%$ There shall be no mechanical damage. | The sample shall be left for 96 hours in a temperature of 40±2°C and a humidity(RH) of 90~95%. Upon completion of the test, the measurement shall be made after the sample has been left in a normal temperature and normal humidity more than 1 hour. |
| Component Adhesion (Push Test) | 1.5Kg Min | The device should be reflow soldered (245±5°C for 10 seconds)to a copper substrate a dynamometer force gauge should be applied to the side of the component the device must with-stand a minimum force of 1.5kg without failure of the termination attached to component. |

PACKAGING INFORMATION

Packing Quantity

| Type | Pcs / Reel | Reel / Box |
|------------|------------|------------|
| All Series | 3,000 | 5 |



Dimensions (unit: m/m)

| Type | Chip Cavity | | Insert Pitch P | Tape Thickness | | Tape Width W |
|---------|-------------|-----|----------------|----------------|-----|--------------|
| | Ao | Bo | | Ko | T | |
| TPC2D11 | 4.6 | 4.3 | 8 | 1.35 | 0.3 | 12 |
| TPC2D14 | 4.6 | 4.3 | 8 | 1.65 | 0.3 | 12 |
| TPC2D18 | 4.6 | 4.3 | 8 | 2.15 | 0.3 | 12 |
| TPC3D11 | 4.6 | 4.3 | 8 | 1.35 | 0.3 | 12 |
| TPC3D16 | 4.6 | 4.3 | 8 | 1.95 | 0.3 | 12 |

