

■ APPLICATION

Low profile, high current power supplies
Battery powered devices
DC/DC converters in distributed power systems
DC/DC converters for field programmable gate array

■ FEATURES

RoHS Compliant & Halogen Free
Super low resistance, ultra high current rating
High performance (I sat) realized by magnetic metal powder core

■ PRODUCT IDENTIFICATION

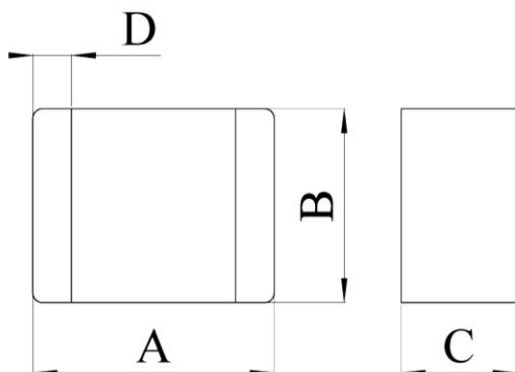
① ② ③ ④ ⑤

MLV - TP10N R47 N - P4

- ① Product Code
- ② Dimensions: 2.0 x 1.6 x 1.0 mm
- ③ Inductance: R47 = 0.47 μ H
- ④ Tolerance: N = \pm 30%
- ⑤ Series Type: P4 Type

NOTE: Please refer to the “Product Dimension” for detail dimensions.

■ PRODUCT DIMENSION



NOTE: Dimensions in mm

| PRODUCT NO. | A | B | C | D |
|--------------------|------------------|------------------|----------------|------------------|
| MLV-TP10NSERIES-P4 | 2.0 ± 0.2 | 1.6 ± 0.2 | 1.0 Max | 0.5 ± 0.3 |

ELECTRICAL REQUIREMENTS

| PART NUMBER | INDUCTANCE Lo(μH)±30% @0A | R _{dc} (mΩ) | | HEAT RATING CURRENT(I _{dc}) DC AMPS ¹ | | SATURATION CURRENT(I _{sat}) DC AMPS ² | |
|------------------|---------------------------------|-------------------------|------------|--|-------------|--|------------|
| | | Typ. | Max | Typ. | Max | Typ. | Max |
| MLV-TP10NR24N-P4 | 0.24 | 16 | 20 | 5.5 | 4.7 | 7.0 | 6.3 |
| MLV-TP10NR33N-P4 | 0.33 | 21 | 26 | 4.7 | 4.0 | 6.1 | 5.5 |
| MLV-TP10NR47N-P4 | 0.47 | 26 | 32 | 4.2 | 3.6 | 5.3 | 4.8 |
| MLV-TP10NR68N-P4 | 0.68 | 36 | 43 | 3.7 | 3.1 | 4.8 | 4.3 |
| MLV-TP10N1R0N-P4 | 1.0 | 48 | 56 | 3.1 | 2.7 | 3.9 | 3.6 |
| MLV-TP10N1R5N-P4 | 1.5 | 76 | 91 | 2.4 | 2.1 | 3.2 | 2.9 |
| MLV-TP10N2R2N-P4 | 2.2 | 117 | 140 | 1.9 | 1.7 | 2.6 | 2.4 |
| MLH-TP10N4R7N-P4 | 4.7 | 235 | 282 | 1.3 | 1.1 | 1.8 | 1.6 |
| MLH-TP10N100N-P4 | 10 | 650 | 780 | 0.75 | 0.65 | 1.2 | 1.0 |

Test frequency: 1MHz, 0.25V

Testing instrument L: Agilent4285A, CH3302/G LCR METER

CH1320, CH1320S BIAS CURRENT SOURCE

R_{dc}: CH11025, GOM802 MICRO OHMMETE

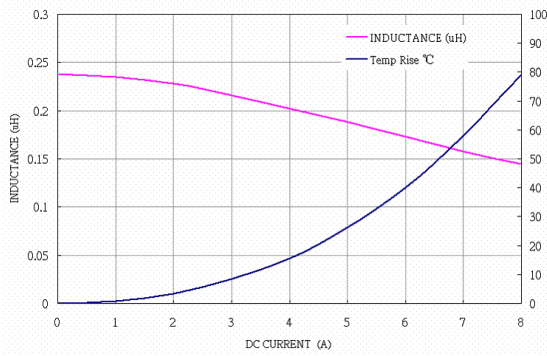
NOTES:

1. DC current (I_{dc}) that will cause an approximate Δ T of 40°C
2. DC current (I_{sat}) that will cause Lo to drop approximately 30%
3. All test data is referenced to 25°C ambient
4. Operating temperature range -40°C to +125°C
5. Withstand voltage: 25V DC

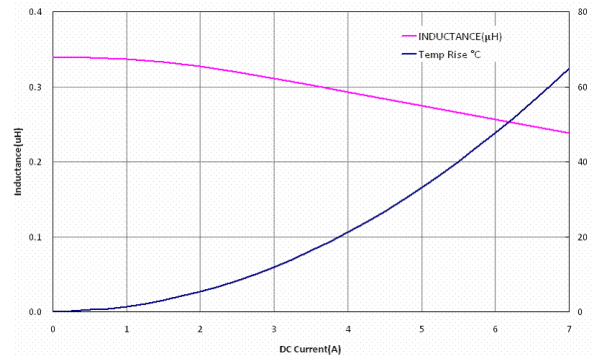
ELECTRICAL CHARACTERISTICS

Reference data

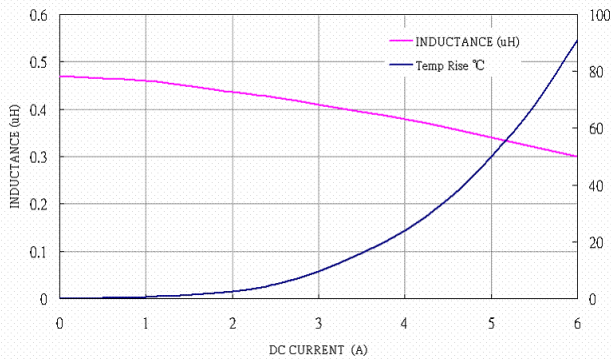
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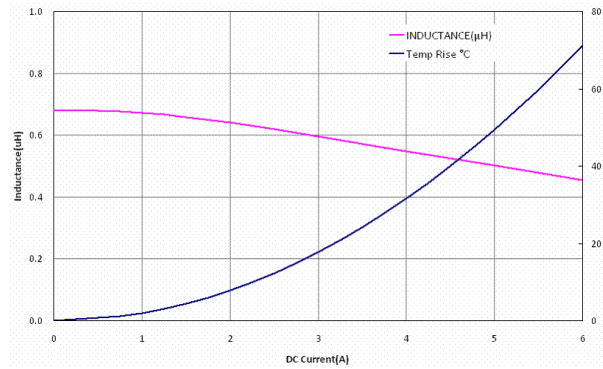
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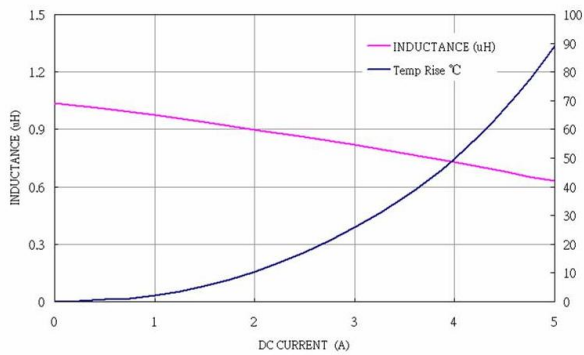
MLV-TP10NR47N-P4



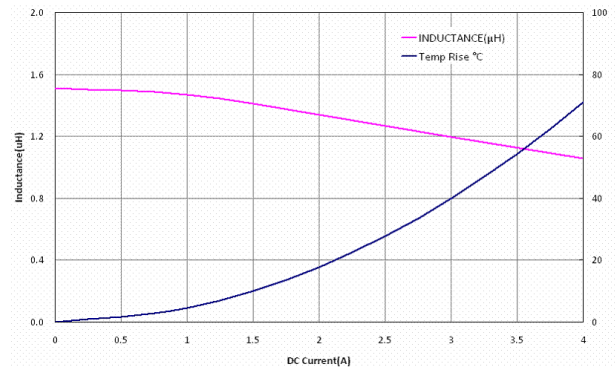
MLV-TP10NR68N-P4



MLV-TP10N1R0N-P4

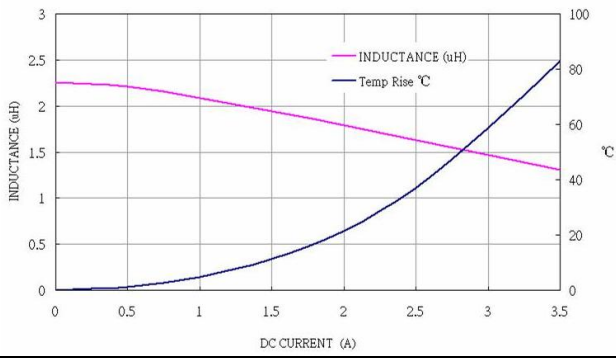


MLV-TP10N1R5N-P4

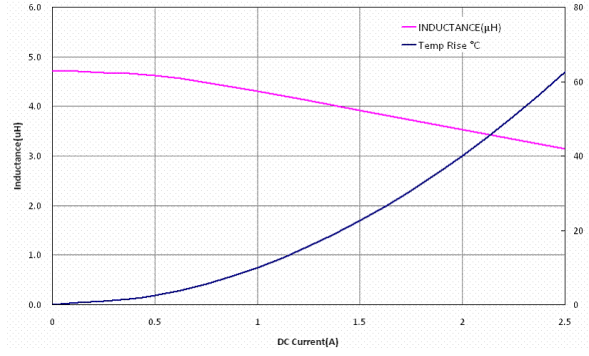


MAG.LAYERS

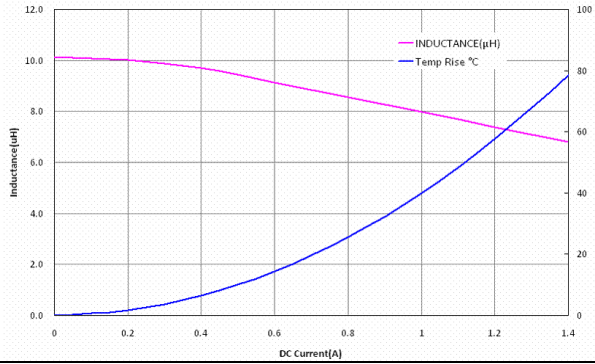
MLV-TP10N2R2N-P4



MLH-TP10N4R7N-P4

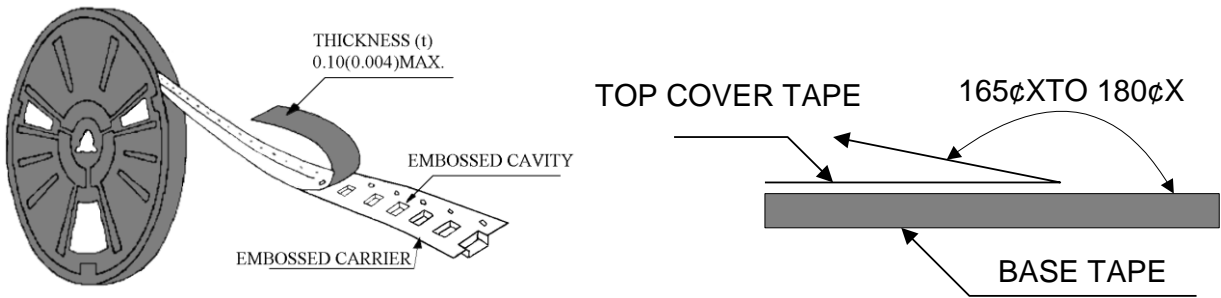


MLH-TP10N100N-P4



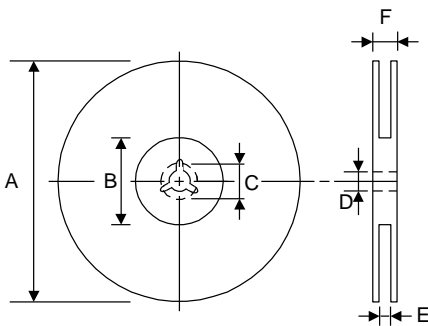
PACKAGING

● Peel-off Force

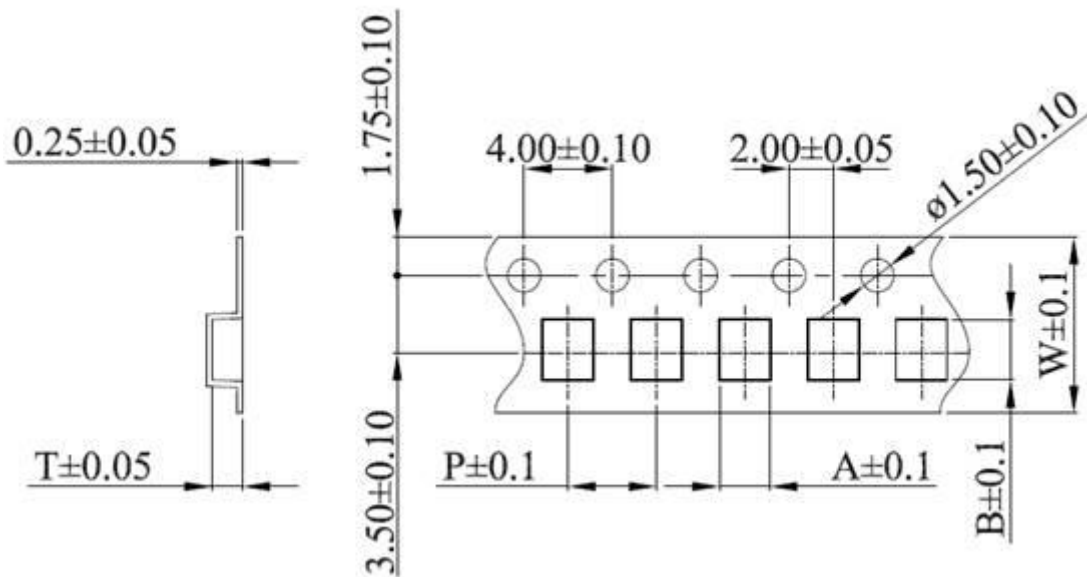


The force for peeling off cover tape is 10 grams in the arrow direction.

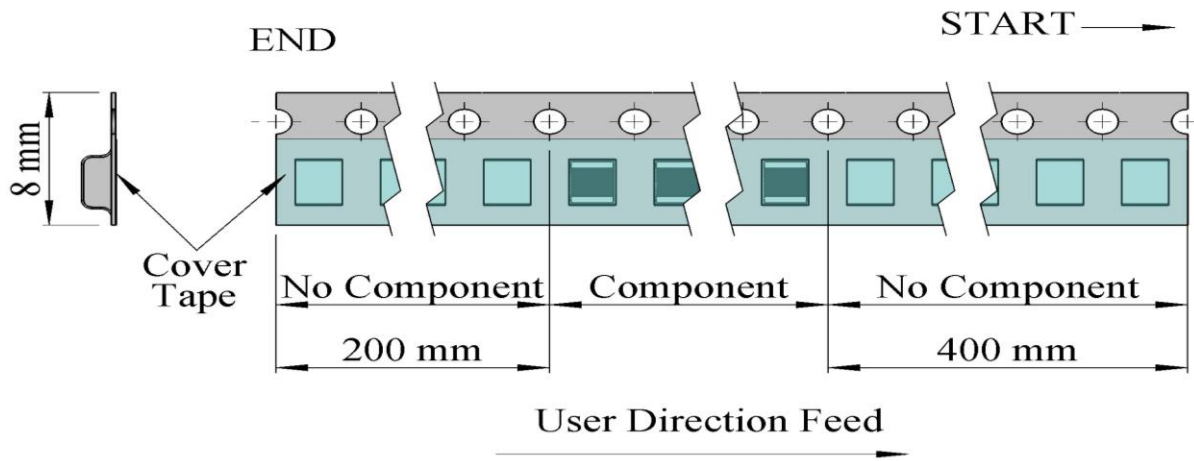
● Dimension (Unit: mm)



| TYPE | A | B | C | D | E | F |
|------|-------|---------------|-----------|---------|--------|---------|
| 8 mm | 178±1 | 60 +0.5 -0 | 19.3 ±0.1 | 13 ±0.2 | 9 ±0.5 | 12 ±0.5 |



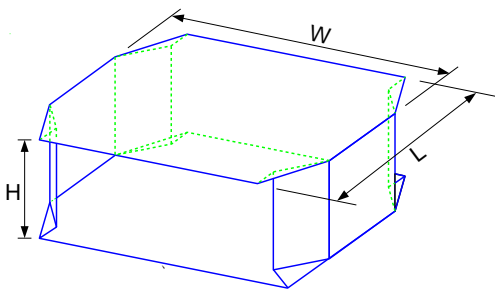
| TYPE | SIZE | A | B | W | P | T |
|------|------|-----|-----|---|---|-----|
| MLV | TP10 | 1.9 | 2.3 | 8 | 4 | 1.2 |



● Taping Quantity

| | |
|----------|------|
| SERIES | TP10 |
| PCS/Reel | 3000 |

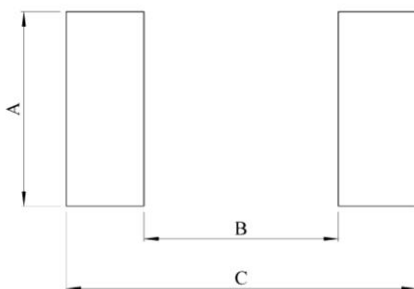
● Tape Packing Case



| No. of Reels | W | L | H |
|--------------|--------|--------|---------|
| 2 | 18±0.5 | 18±0.5 | 2.4±0.2 |
| 3 | 18±0.5 | 18±0.5 | 3.6±0.2 |
| 4 | 18±0.5 | 18±0.5 | 4.8±0.2 |
| 5 | 18±0.5 | 18±0.5 | 6.0±0.2 |

Unit: cm

■ **RECOMMENDED PCB LAYOUT**



| Type | TP10 |
|------|------|
| A | 1.6 |
| B | 0.9 |
| C | 2.3 |