

PRODUCT SPECIFICATION

新弘智

SPEC. NO: T-0602-141E

DATE: Mar.14,2019

CUSTOMER'S PRODUCT NAME:

EMTEK PRODUCT NAME:

CMF4532F-SERIES-Tms

THIS SPECIFICATION IS:

- FULLY ACCEPTED
 DENIED
 ACCEPTED UNDER THE FOLLOWING CONDITIONS



SIGNATURE: _____ DATE: _____

NAME(PRINT): _____

TITLE: _____

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1. Scope

This specification applies ferrite Chip common mode filters CMF4532F-Series-Tms to be delivered to user.

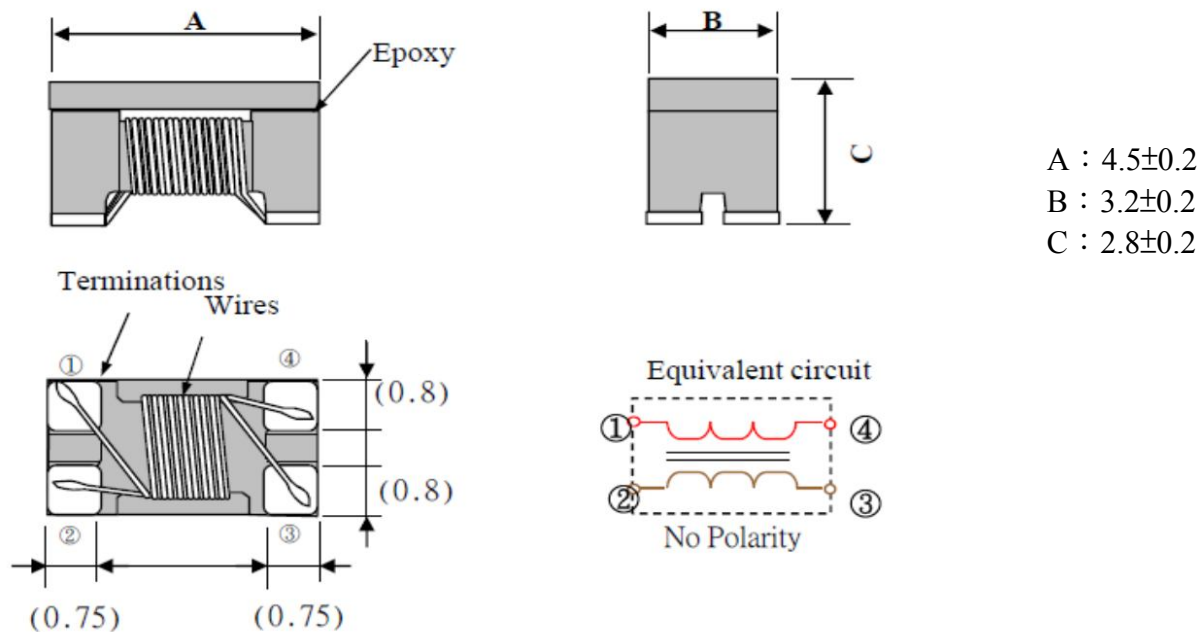
2. Product Identification

CMF 4532 F - 600 - 2P - Tms

(1) (2) (3) (4) (5) (6)

- (1) Product name
- (2) Shapes and dimensions
- (3) Shielding Type
- (4) Impedance 【 at 100MHz 】
600:60Ω
- (5) Number of Line
2P:2-Line
- (6) For Customer Design

3. Shapes and Dimensions [Dimensions in mm]



| Drawn by | Checked by | Approved by |
|-----------------------|-----------------------|-------------------|
| Cindy Dec. 1. 2016 | Zheng Dec. 1. 2016 | Su Dec 1. 2016 |

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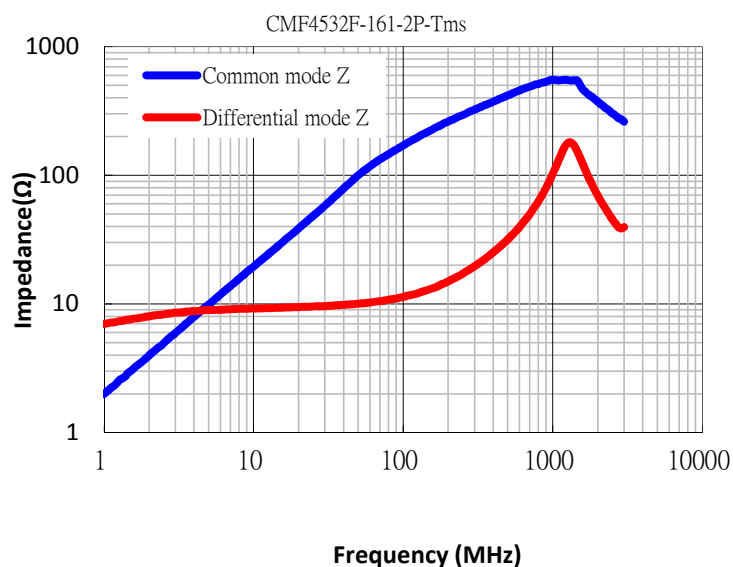
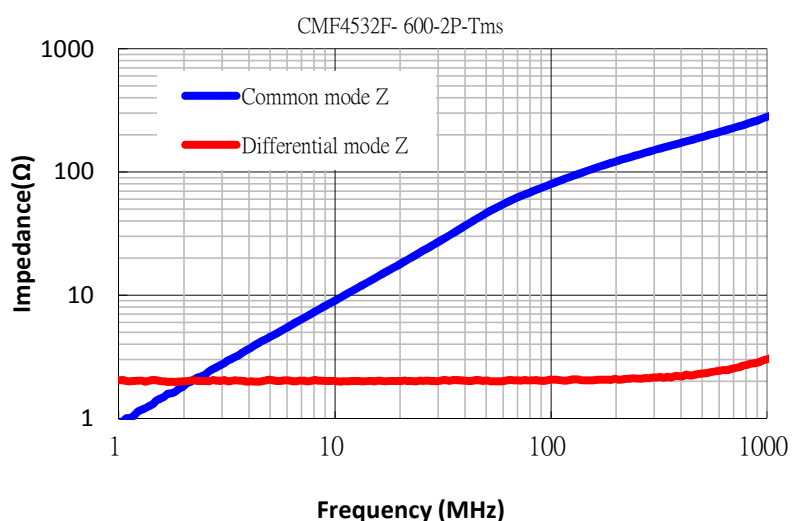
4. Electrical Characteristics

4-1 Electrical Spec.

| Our Product Part Number | Common-Mode Impedance $Z(\Omega)$ at 100MHz | Common-Mode Inductance uH at 100KHz | DC Resistance $R_{dc}(\Omega)$ Max. | Rated Current $I_{dc}(A)$ Max. | Rated Voltage $V_{dc}(V)$ | Withstanding Voltage $V_{dc}(V)$ | Insulation Resistance ($M\Omega$)Min. |
|-------------------------|--|--|--|-----------------------------------|------------------------------|-------------------------------------|--|
| CMF4532F-600-2P-Tms | $60 \pm 25\%$ | | 0.05 | 2.0 | 50 | 125 | 10 |
| CMF4532F-900-2P-Tms | $90 \pm 25\%$ | | 0.05 | 2.0 | 50 | 125 | 10 |
| CMF4532F-161-2P-Tms | $160 \pm 25\%$ | | 0.08 | 2.0 | 50 | 125 | 10 |
| CMF4532F-231-2P-Tms | $230 \pm 25\%$ | | 0.10 | 1.8 | 50 | 125 | 10 |
| CMF4532F-421-2P-Tms | $420 \pm 25\%$ | | 0.10 | 1.6 | 50 | 125 | 10 |
| CMF4532F-601-2P-Tms | $600 \pm 25\%$ | $2.0 \pm 50\%$ | 0.07 | 2.8 | 50 | 125 | 10 |

Rated Current I_{dc} : DC current (A) that will cause an approximate ΔT of $40^\circ C$

4-2 Characteristics (Reference)



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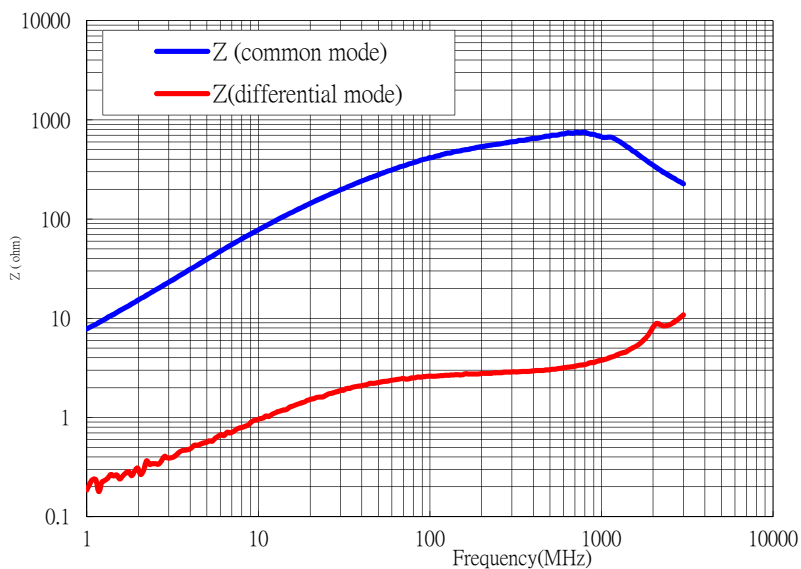
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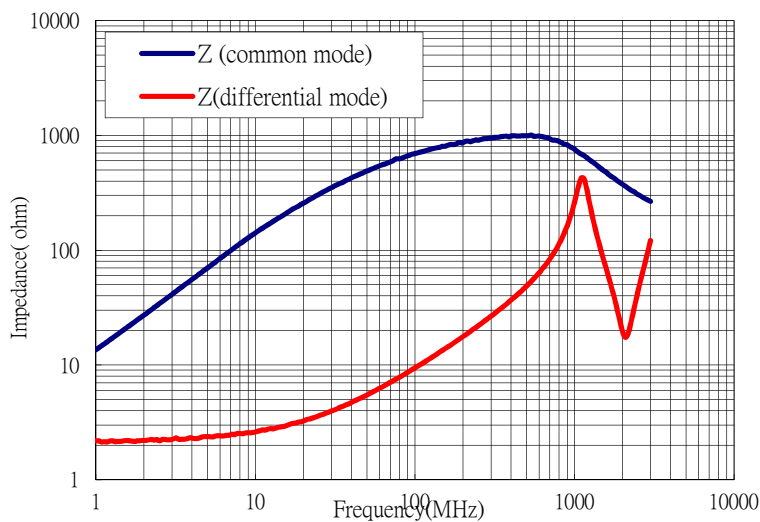


4-2 Characteristics (Reference)

CMF4532F-421-2P-Tms



CMF4532F-601-2P-Tms



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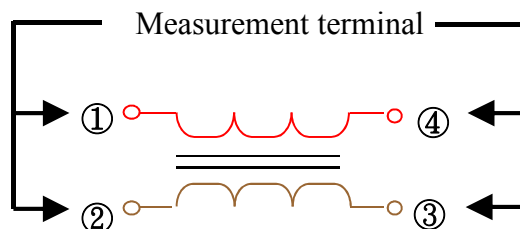
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4-3 Test Equipment

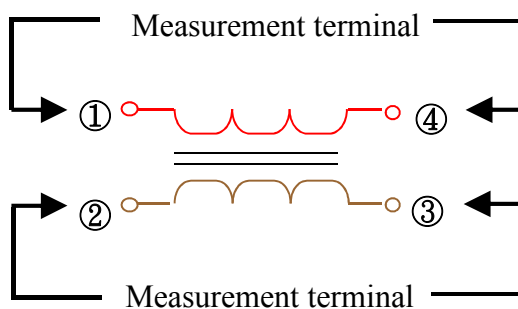
4-3-1 Impedance

Measured by using Agilent E4991A RF Impedance Analyzer.



4-3-2 DC Resistance

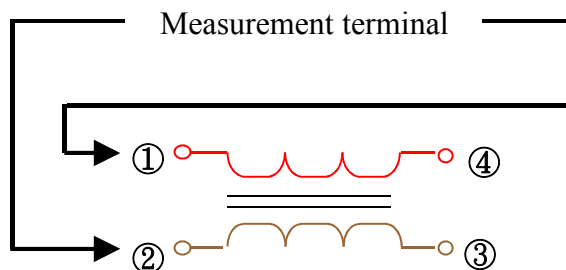
Measured by using Chroma 16502 mill ohm meter.



4-3-3 Insulation Resistance

Measured by using Chroma 19073

Measurement voltage : 50v, Measurement time: 60 sec.



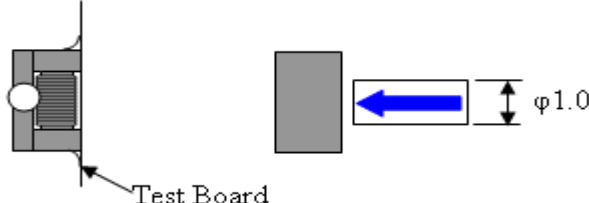
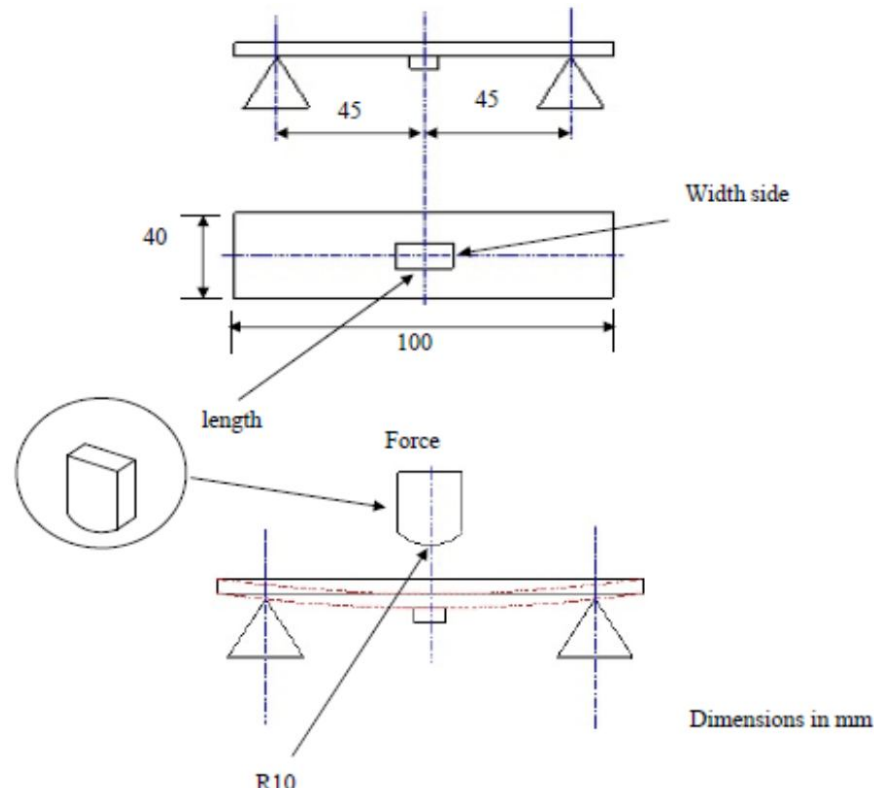
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5. Reliability Test

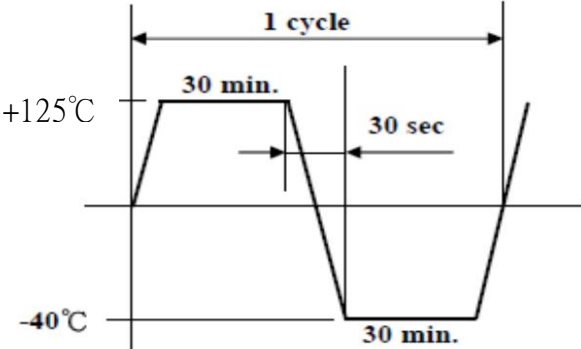
| Operating temperature : -40 to +125°C | | Storage temp and humidity : -40 to 85°C, 70%RH max. |
|---------------------------------------|--|--|
| Item | Specifications | Test conditions |
| Solder-ability | It can be connected on the Recommendation soldering condition. | Apply cream solder to the test circuit board . It is mounted on the recommendation soldering condition. |
| Terminal strength | The terminal electrode and the ferrite must not be dam 160±25% | Solder a chip to test substrate, and then laterally apply a load 1.8Kg in the arrow direction.  |
| Strength on pc board bending | The terminal electrode and the ferrite must not be damaged. | Soldering a chip to a test substrate , bend the substrate by 2mm and then return.  <p>Dimensions in mm</p> <p>Test board : Glass base epoxy multiplayer board pc board pattern. PC board pattern : Recommended PC board pattern.</p> |

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| Item | Specifications | Test conditions |
|-----------------------------|---|---|
| High temperature resistance | Appearance : Ferrite shall not be damaged. Impedance: Within $\pm 20\%$ of the initial value. insulation resistance: $>10(M\Omega)$ DC resistance : standard value | Temperature : $+125\pm 2^{\circ}C$ Applied voltage : Rated voltage Applied current : Rated current Testing time : 500 ± 12 hours Measurement : After placing for 24 hours min. |
| Humidity resistance | inside. | Temperature : $+85\pm 2^{\circ}C$ Humidity : 90 to 95%RH Applied current : Rated current Applied voltage : Rated voltage Testing time : 500 ± 12 hours Measurement : After placing for 24 hours min. |
| Thermal cycle | | Temperature : $-40^{\circ}C, +125^{\circ}C$ kept stabilized for 30 minutes each. Cycle : 100 cycle Measurement : After placing for 24 hours min.  |
| Low temperature resistance | | Temperature : $-40\pm 2^{\circ}C$ Testing time : 500 ± 12 hours Measurement : After placing for 24 hours min. |
| Vibration | Appearance : Ferrite shall not be damaged. | Frequency : 10 to 50 Hz Amplitude : 1.52 mm Dimension and times : X ,Y and Z directions for 2 hours each. |

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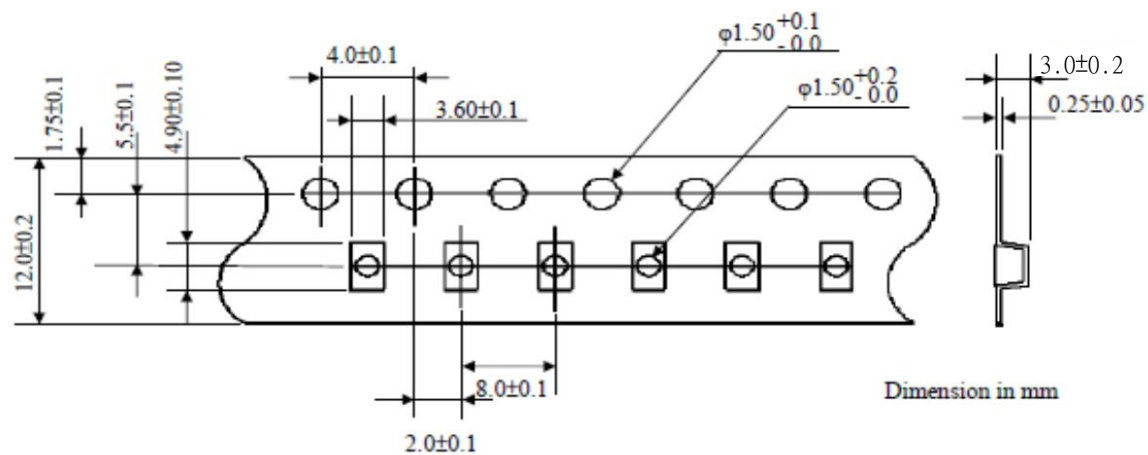
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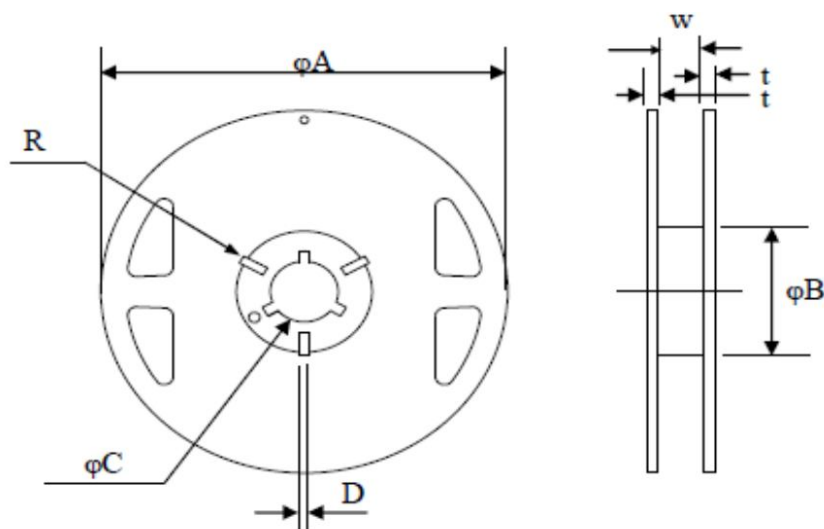
6. Packaging

The packaging must be done not to receive any damage during transporting and storing

6-1 Tape dimensions



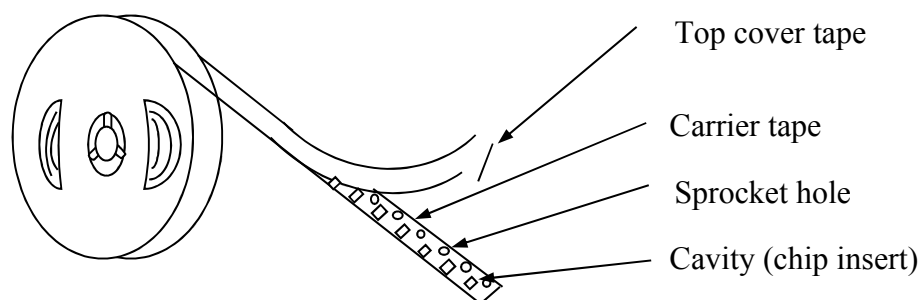
6-2 Reel dimensions



(Dimensions in mm)

| Symbol | T |
|----------|----------|
| ϕA | 180+0,-3 |
| ϕB | 60+1, -0 |
| ϕC | 13±0.2 |
| D | 2.2±0.5 |
| W | 12.0±0.3 |
| t | 1.2 |
| R | 1 |

6-3 Tapping figure



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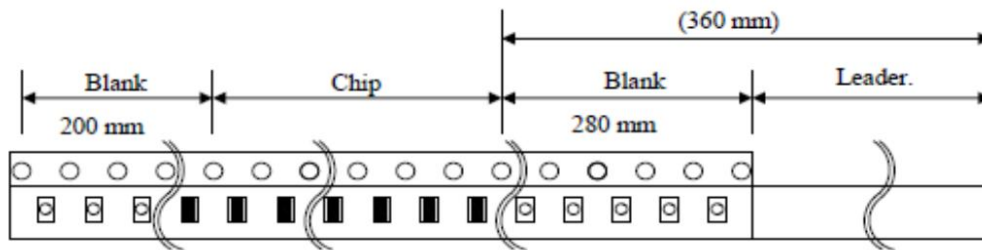
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6-4 Packaging Form

There shall not continuation more than two vacancies of the product.



Material of carrier tape : Polystyrene

Material of cover tape : Polyester

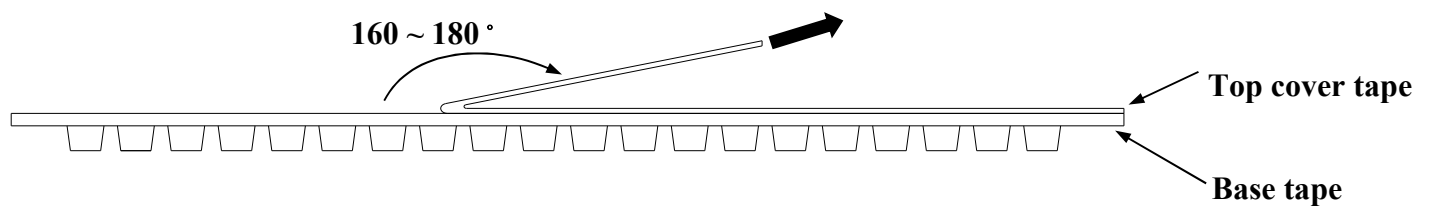
6-5 Cover Tape Peel Strength

The force for tearing off cover tape is 0.05~0.69(N) in the arrow direction at the following conditions:

Temperature : 5 ~ 35°C

Humidity : 45 ~ 85%

Atmospheric pressure : 860 ~ 1060 hpa



6-6 Packing Quantity

φ180 mm reel T type : 500 pcs./reel

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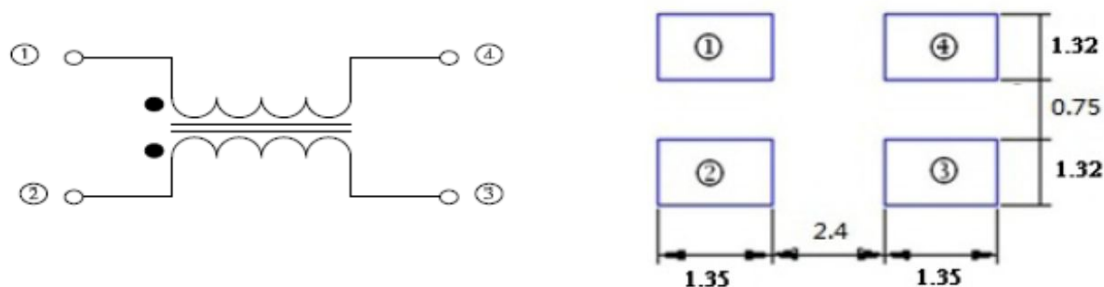
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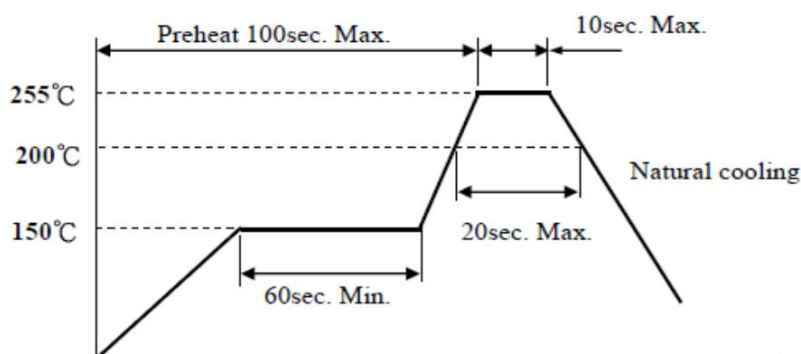
7. Recommended Soldering Conditions (Please use this product by reflow soldering)

7-1 Recommended Footprint



7-2 Recommended Reflow Pattern

Reflow: until two times



7-3 Iron Soldering

Use a solder iron of less than 30W when soldering, do not allow the soldering iron tip directly touch the ferrite body outside fo terminal electrode.

2 seconds max. at 280°C.

8. Attention in Case of Using

In case of using product, please avoid following matters:

- Splashing water or salt water
- Dew condenses
- Toxic gas (Hydrogen sulfide, Sulfurous acid, Chlorine, Ammonia)
- Vibrations or shocks which exceed the specified condition

Please be careful for the stress to this product by board flexure or something after the mounting.

*Recommended wire wound inductors should be used within 6 months from the time of delivery.