PRODUCT SPECIFICATION

SPEC. NO: T-0602-058J

新弘智

DATE: Aug.7,2018

CUSTOMER'S PRODUCT NAME:

EMTEK PRODUCT NAME:

CMF2012H4-Series

THIS SPECIFICATION IS:

- ☐ FULLY ACCEPTED
- ☐ DENIED
- ☐ ACCEPTED UNDER THE FOLLOWING CONDITIONS

RoHS COMPLIANT

SIGNATURE: DATE:

NAME(PRINT):

TITLE:

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1. Scope

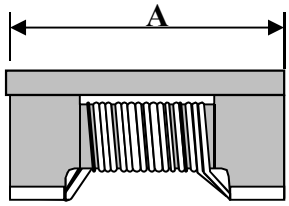
This specification applies ferrite Chip common mode filters CMF2012H4-Series to be delivered to user.

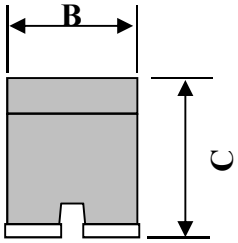
2. Product Identification

CMF 2012 H4 - 900 - 2P - T
(1) (2) (3) (4) (5) (6)

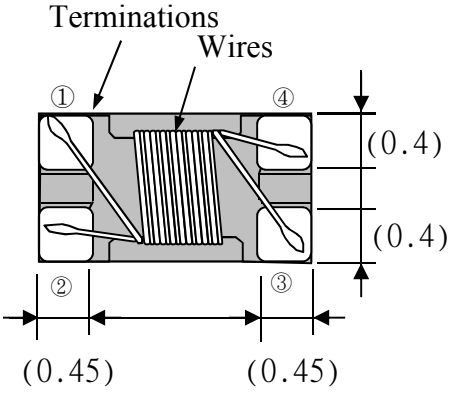
(1) Product name
(2) Shapes and dimensions
(3) Shielding Type
(4) Impedance【 at 100MHz】
65min. (90typ.)
(5) Number of Line
2P:2-Line
(6) Taping Type

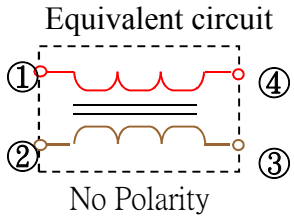
3. Shapes and Dimensions [Dimensions in mm]





A : 2.0 ± 0.2
B : 1.2 ± 0.2
C : 1.2 ± 0.2





Drawn by	Checked by	Approved by
Cindy Feb.23.2018	Zheng Feb.23.2018	Feb.23.2018

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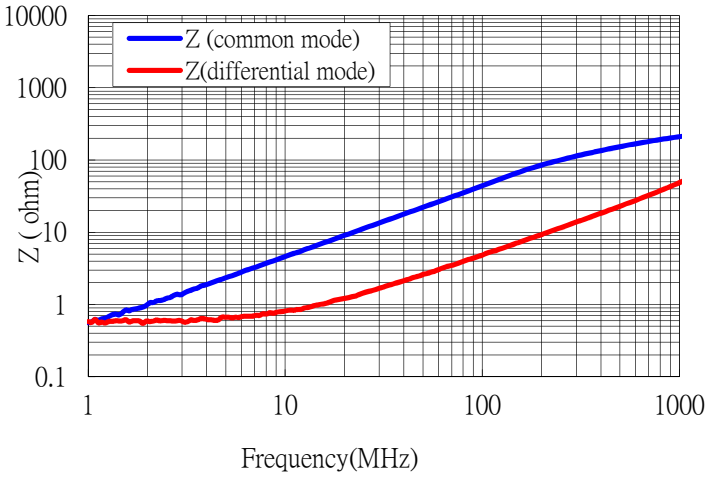
4. Electrical Characterisitcs

4-1 Electrical Spec.

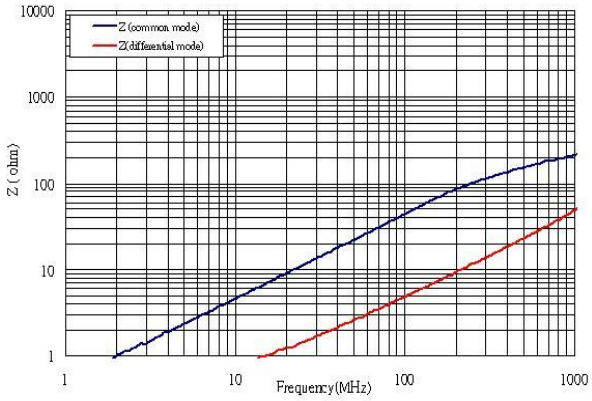
Our Product Part Number	Common-Mode Impedance Z(Ω) at 100MHz	DC Resistance Rdc(Ω) Max.	Rated Current Idc(mA) Max.	Rated Voltage Vdc(V)	Cut-off Frequency (GHz)Typ.	Insulation Resistance (MΩ)Min.
CMF2012H4-420-2P-T	42±25%	0.12	400	20	5.0	10
CMF2012H4-500-2P-T	50±25%	0.30	400	20	5.0	10
CMF2012H4-600-2P-T	60±25%	0.31	320	20	4.0	10
CMF2012H4-670-2P-T	67±25%	0.31	320	20	4.0	10
CMF2012H4-900-2P-T	65min. (90typ.)	0.25	300	20	4.0	10
CMF2012H4-121-2P-T	120±25%	0.25	300	20	4.0	10

4-2-1 Characteristics(Reference)

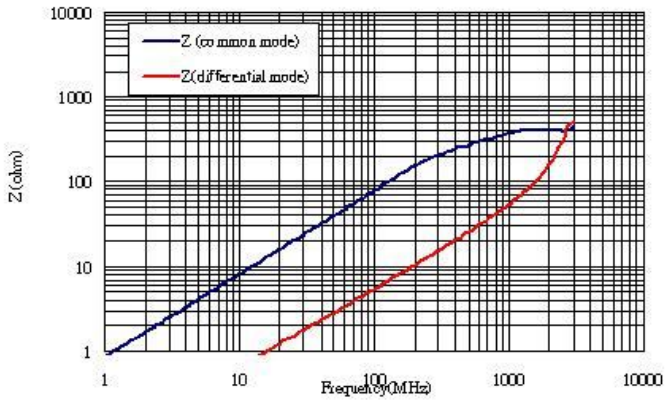
CMF2012H4-420-2P-T



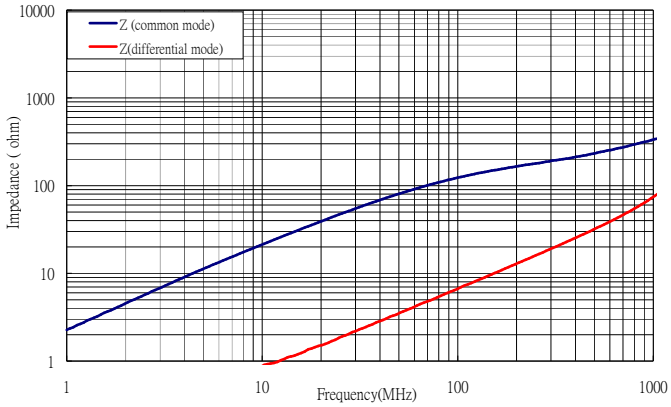
CMF2012H4-500-2P-T



CMF2012H4-900-2P-T



CMF2012H4-121-2P-T



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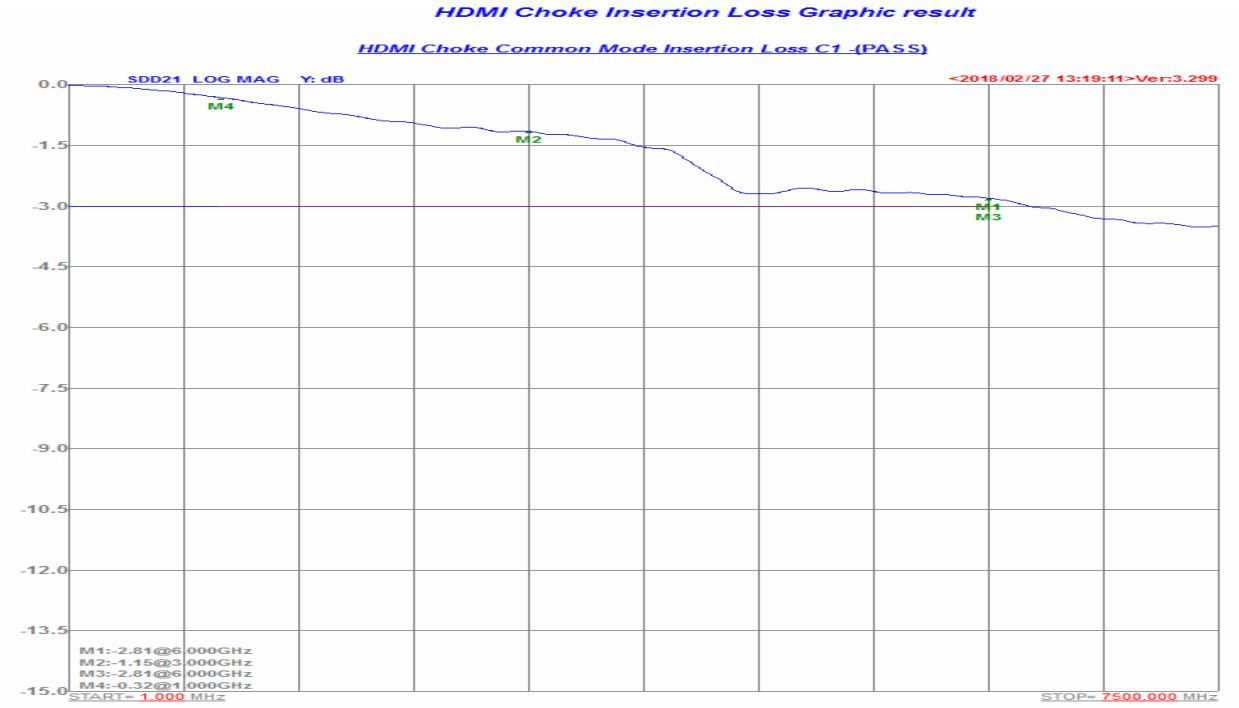
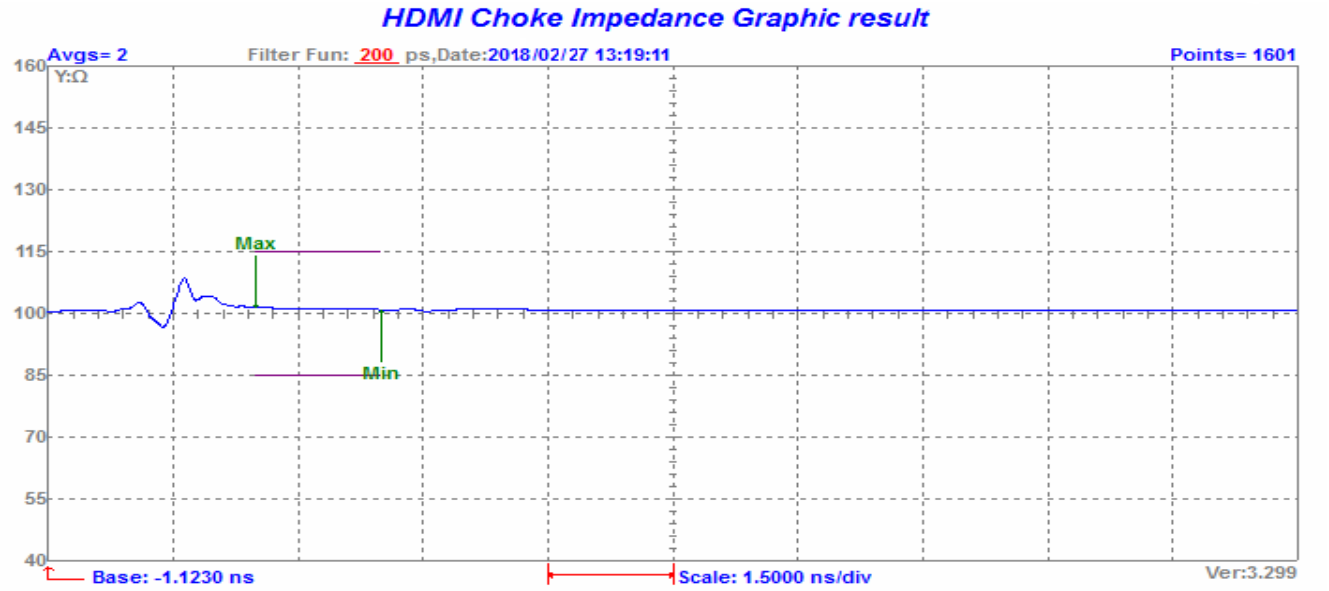
4-2-2 Insertion loss(Reference)

CMF2012H4-420-2P-T



CMF2012H4-420-2P-T



Parameter Name: HDMI Choke Impedance C1	
Spc Max: 115 Ω	Spc Min: 85 Ω
Max:101.66 Ohms at 1.3705 ns	Min:101.00 Ohms at 2.8705 ns
ΔΩ: 0.66	Avg: 101.33 Ohms
	Result: Pass

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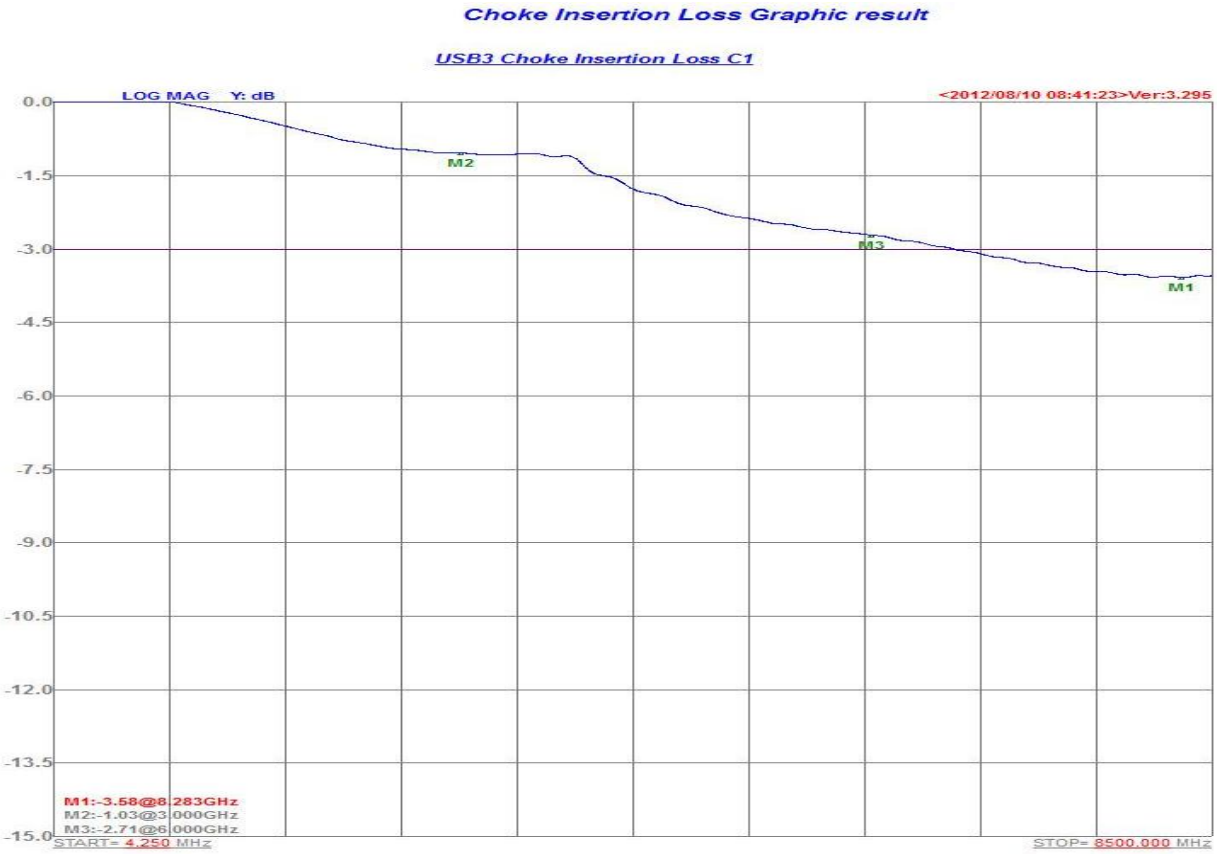
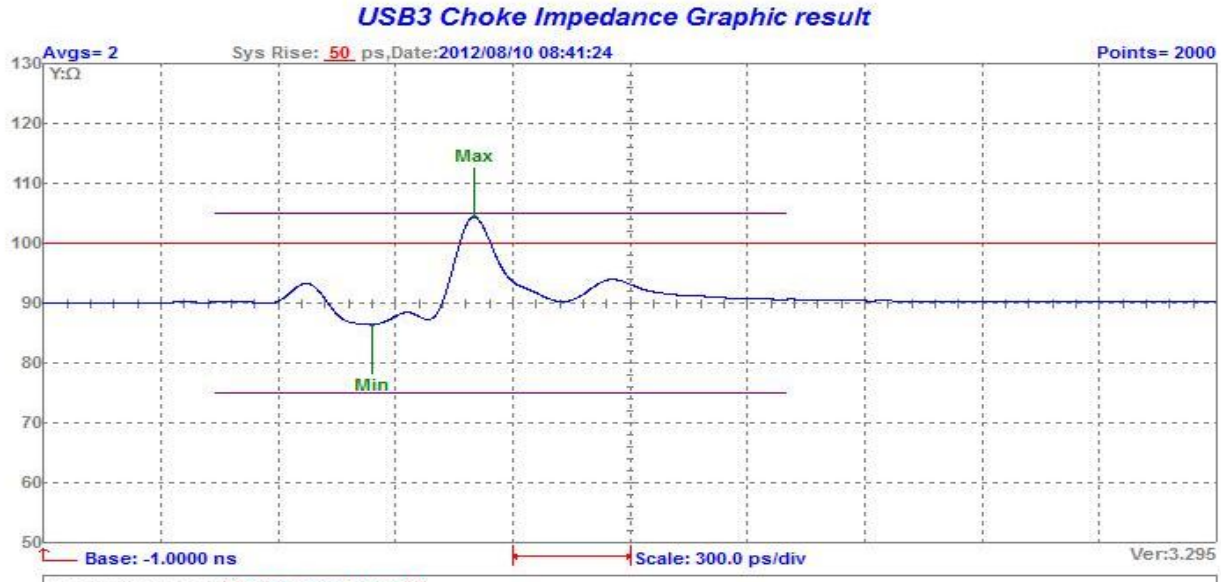
4-2-2 Insertion loss(Reference)

CMF2012H4-500-2P-T



CMF2012H4-500-2P-T



Parameter Name: Choke Impedance C1	
Spc Max: 105 Ω	Spc Min: 75 Ω
Max:104.45 Ohms at 0.1016 ns	Min:86.57 Ohms at -0.1611 ns
ΔΩ: 17.89	Avg: 95.51 Ohms
	Result: Pass

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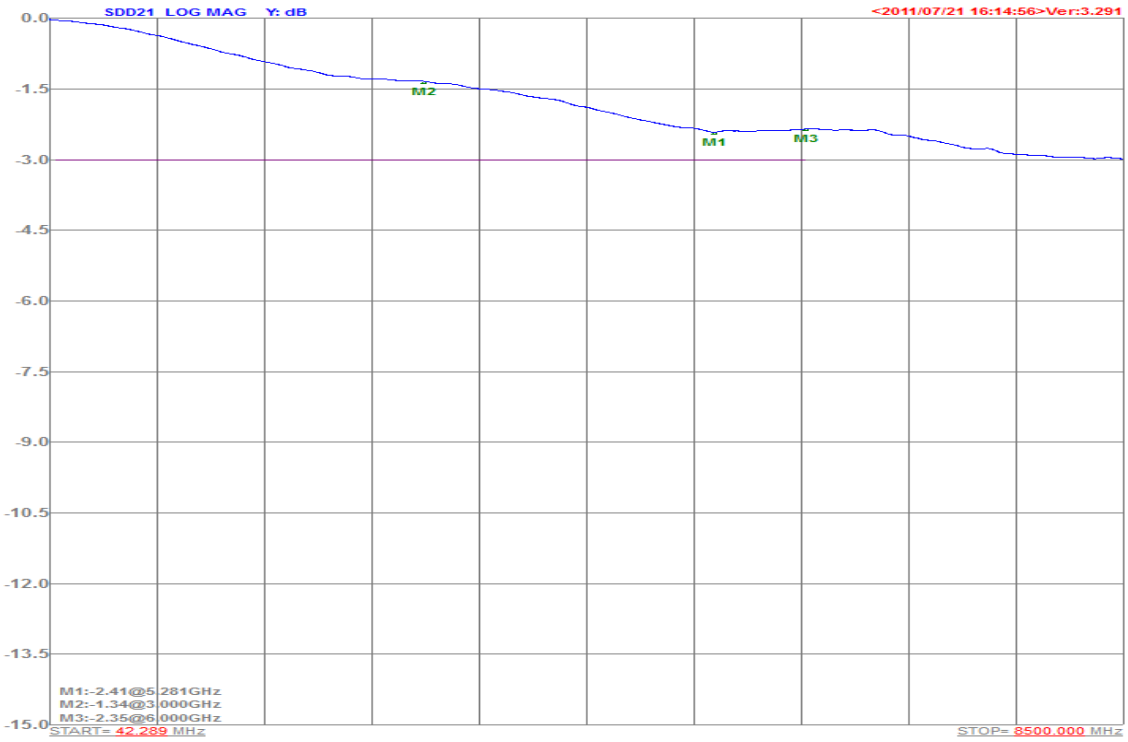
4-2-2 Insertion loss(Reference)

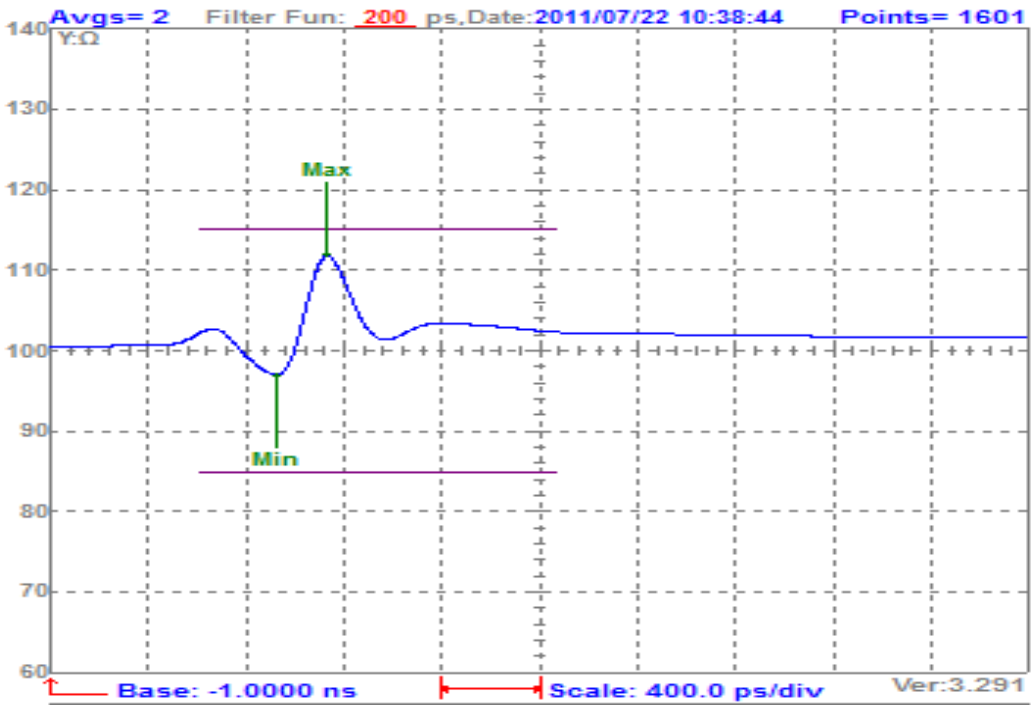
CMF2012H4-670-2P-T

HDMI Choke Insertion Loss Graphic result



CMF2012H4-670-2P-T

HDMI Choke Impedance Graphic result



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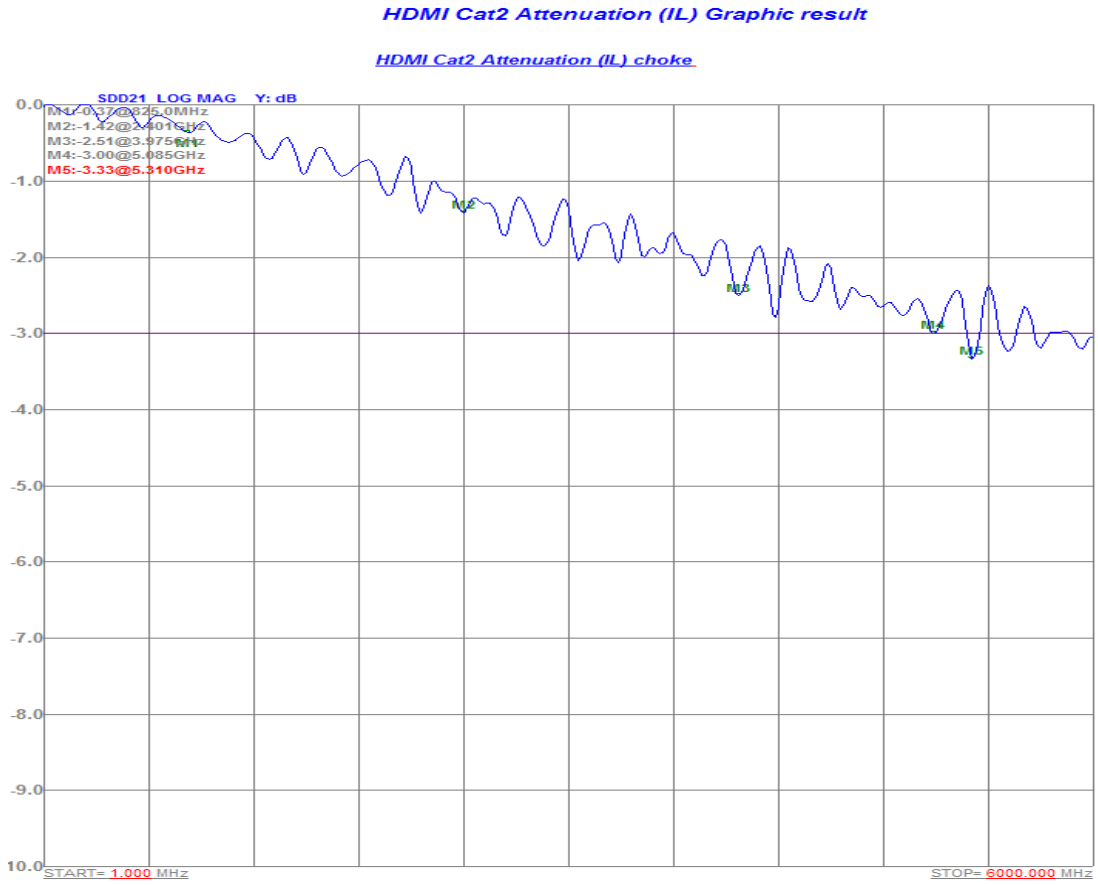
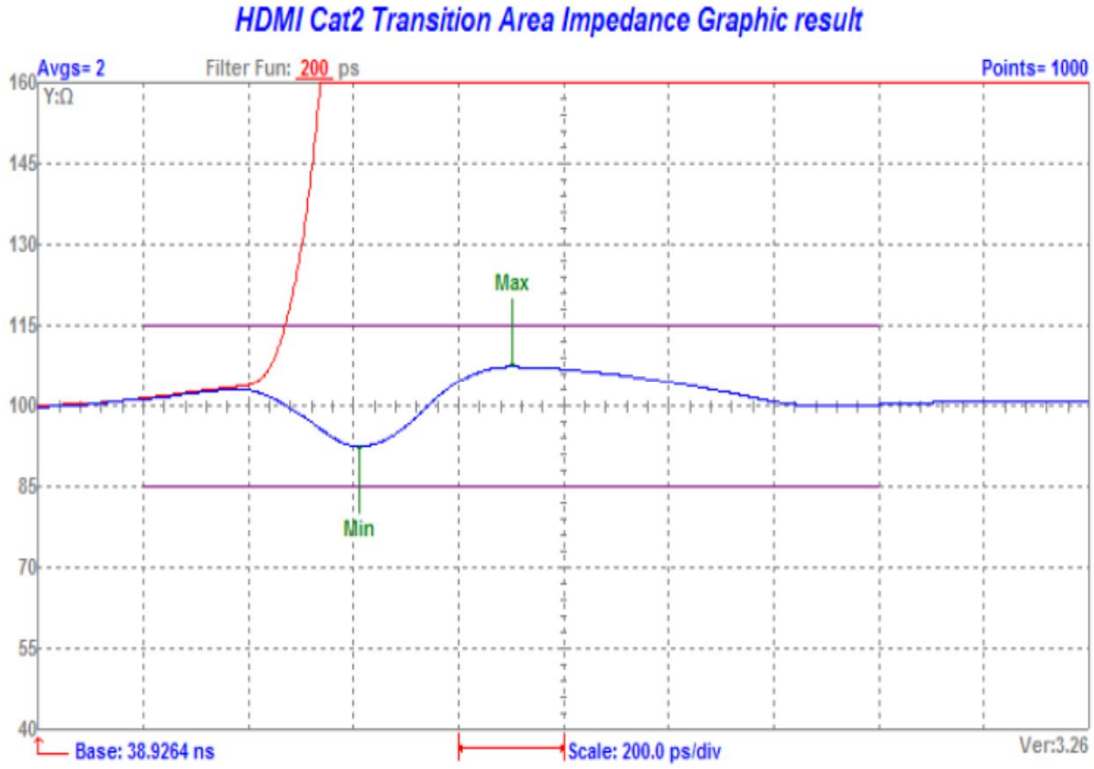
4-2-2 Insertion loss(Reference) **CMF2012H4-900-2P-T**



CMF2012H4-900-2P-T



PRODUCT SPECIFICATION

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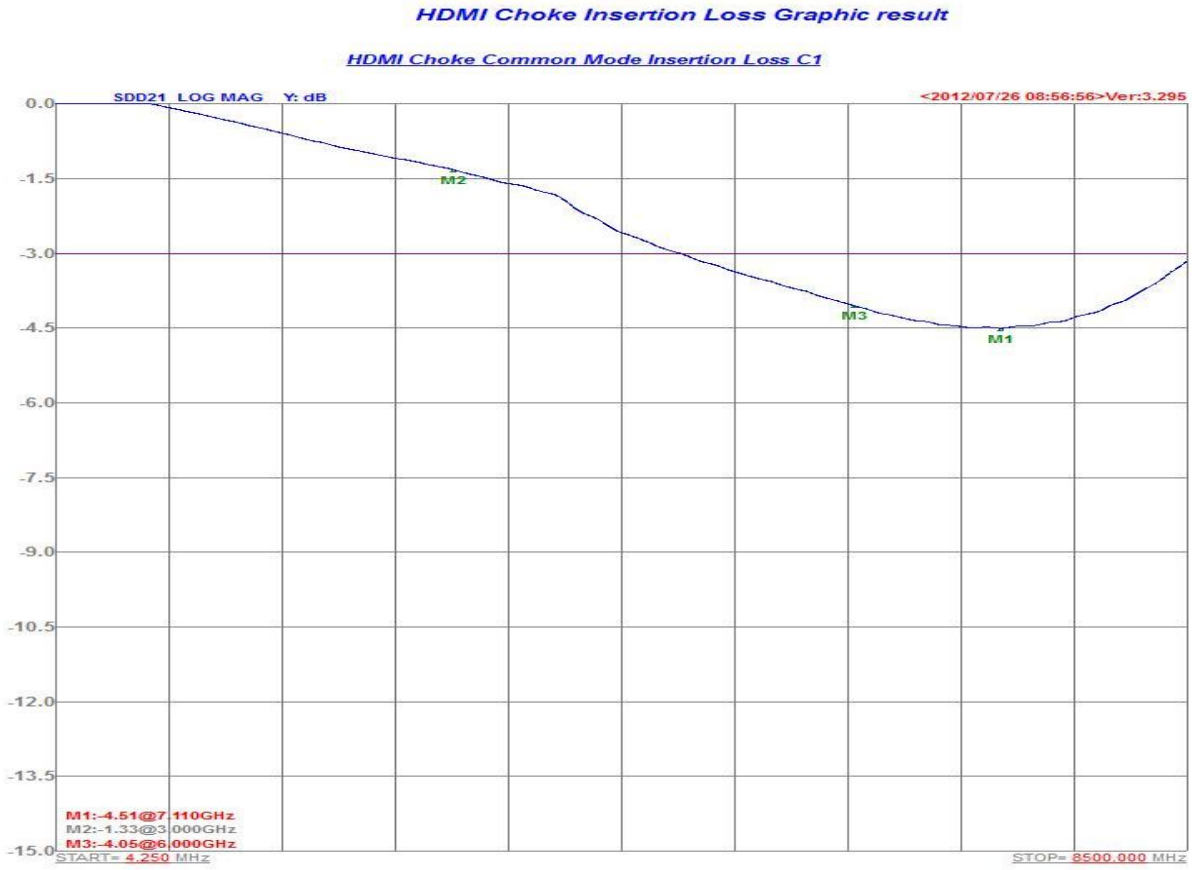
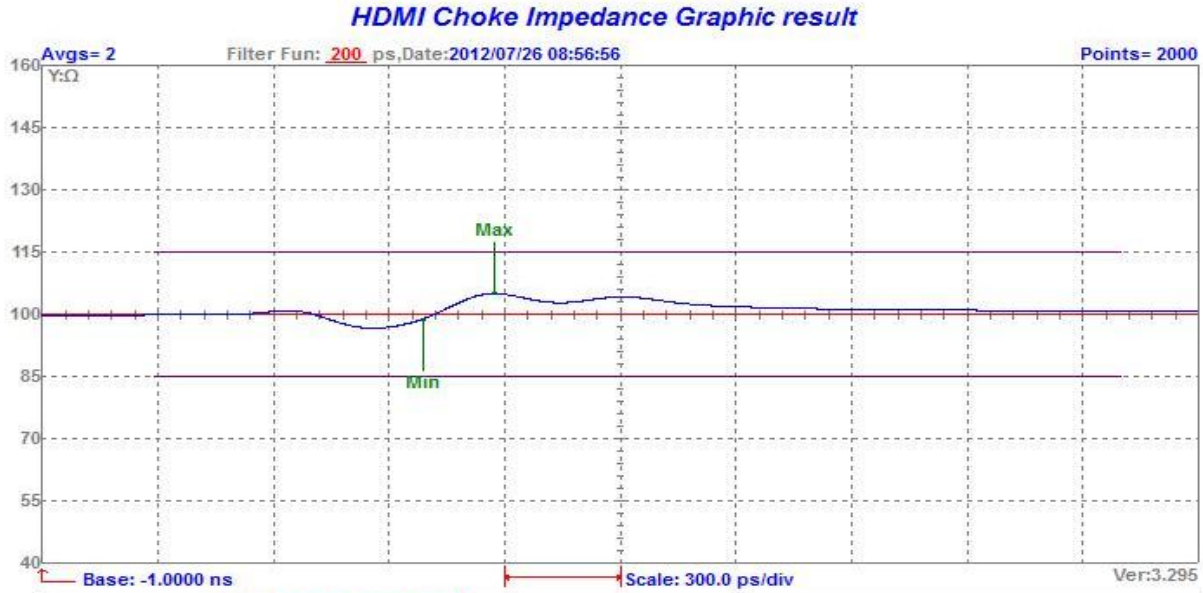
4-2-2 Insertion loss(Reference) **CMF2012H4-121-2P-T**



CMF2012H4-121-2P-T



Parameter Name: HDMI Choke Impedance C1	
Spc Max: 115 Ω	Spc Min: 85 Ω
Max:105.06 Ohms at 0.1736 ns	Min:99.00 Ohms at -0.0110 ns
ΔΩ: 6.06	Avg: 102.03 Ohms
	Result: Pass

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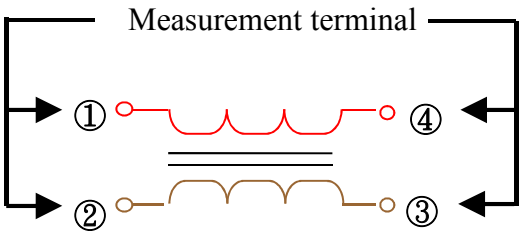
4-3 Test Equipment

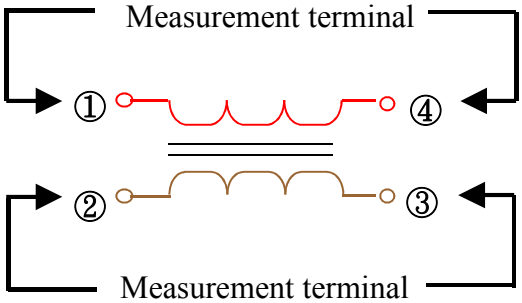
4-3-1 Impedance

Measured by using Agilent E4991A RF Impedance Analyzer.

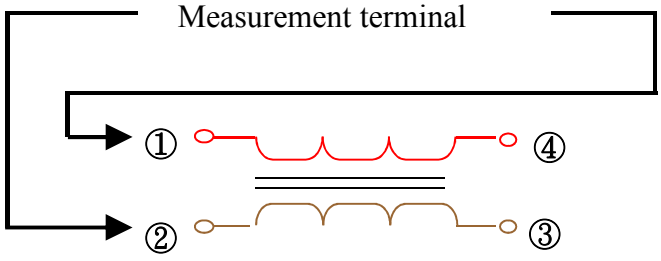


4-3-2 DC Resistance

Measured by using Chroma 16502 mill ohm meter.



4-3-3 Insulation Resistance



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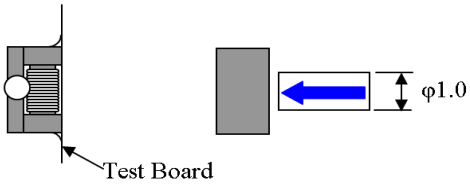
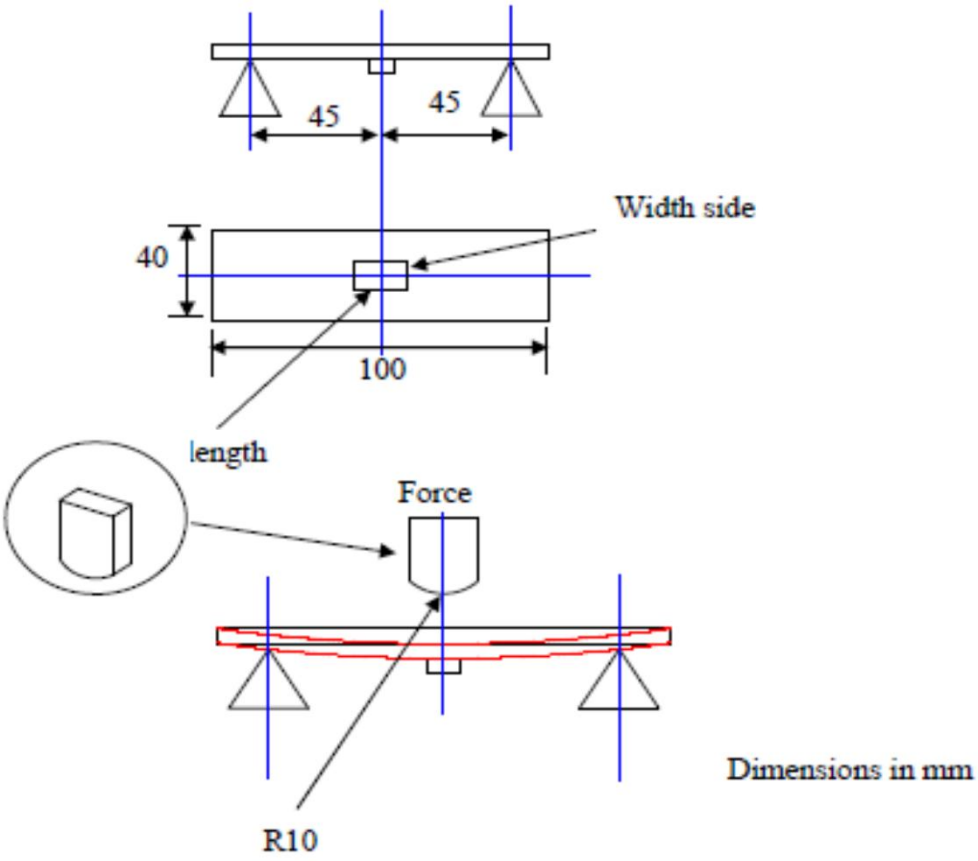
5. Reliability Test

Operating temperature : -40 to +105℃		Storage temp and humidity : 20~25℃ ,60%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 damaged.	Solder a chip to test substrate , and then laterally apply a load 0.5Kg 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.  Test board : Glass base epoxy multiplayer board pc board pattern. PC board pattern : Recommended PC board pattern.

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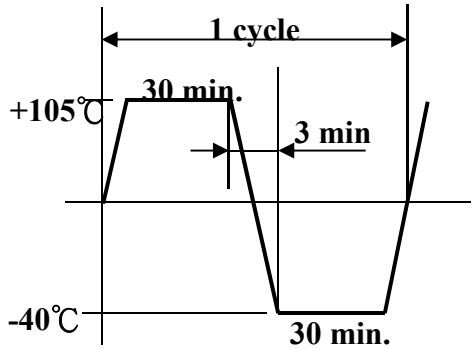
5. Reliability Test

Item	Specifications	Test conditions
High temperature resistance	Appearance : Ferrite shall not be damaged. Impedance : Within ±20% of the initial value. insulation resistance: > 10(MΩ) DC resistance : standard value inside.	Temperature : +105±2℃ Applied voltage : Rated voltage Applied current : Rated current Testing time : 50±12 hours Measurement : After placing for 24 hours min.
Humidity resistance		Temperature : +85±2℃ 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℃,+105℃ kept stabilized for 30 minutes each. Cycle : 5 cycle Measurement : After placing for 24 hours min. 
Low temperature resistance		Temperature : -40±2℃ Testing time : 48±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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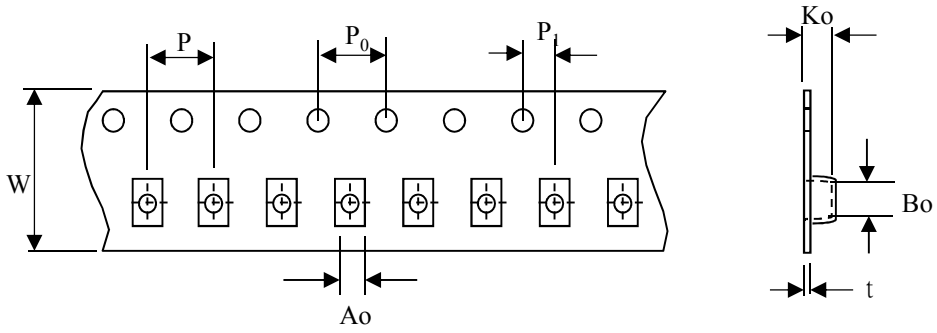
6.Packaging

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

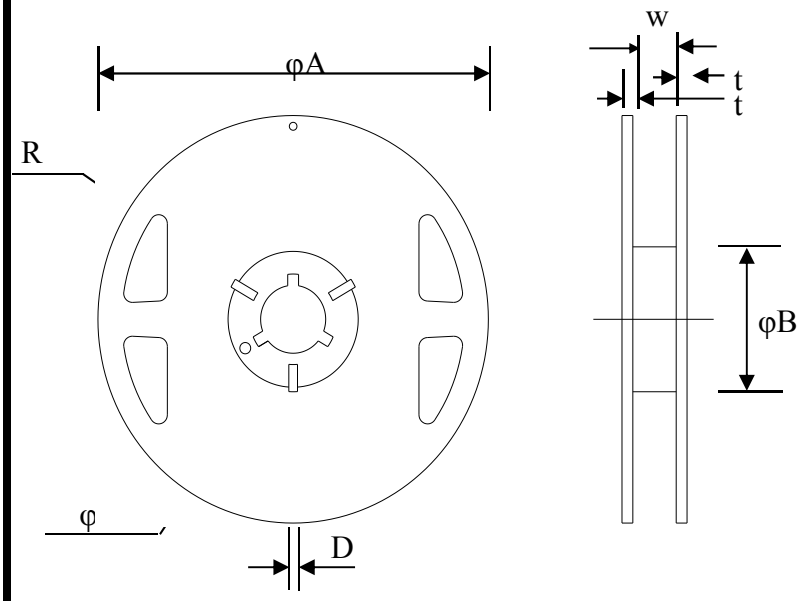
6-1 Tape dimensions



(Dimensions in mm; Tolerance：±0.1)

Symbol	W	P	P_0	P_1	Ao	Bo	Ko	t
Dimension	8	4	4	2	1.5	2.25	1.35	0.24

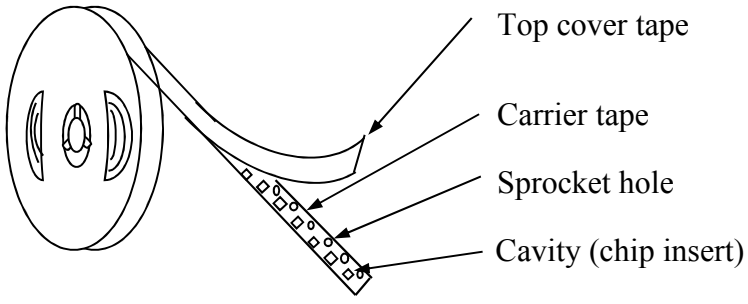
6-2 Reel dimensions



Dimension in mm

Symbol	T
φA	180+0,-3
φB	60+1,-0
φC	13±0.2
D	2.2±0.5
W	9.0±0.3
t	1.2
R	1

6-3 Tapping figure



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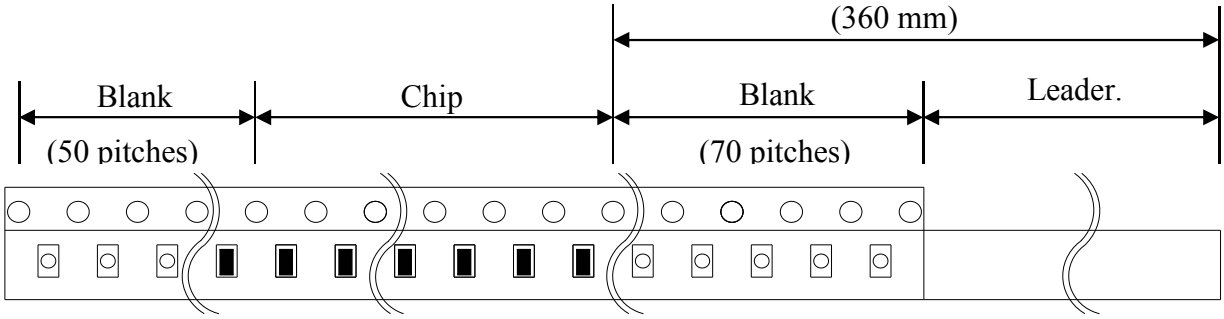
6-4 Packaging Form

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

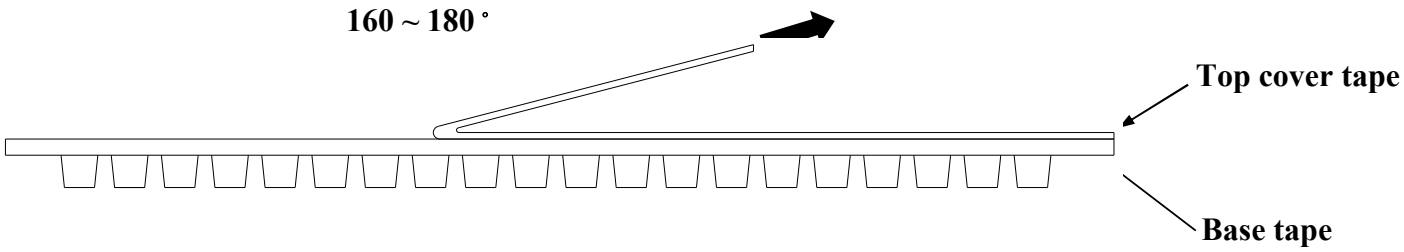


Material of carrier tape : Polystyrene
Material of cover tape : Polyester

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℃
Humidity : 45 ~ 85%
Atmospheric pressure : 860 ~ 1060 hpa



6-6 Packing Quantity

φ180 mm reel T type : 2000 pcs./reel

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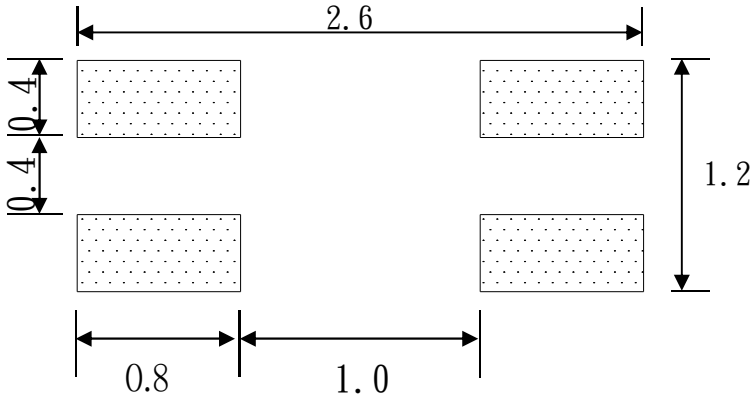
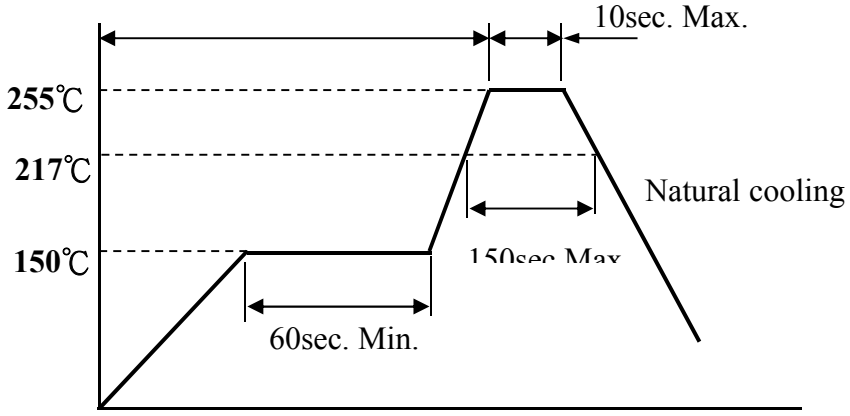
7. Recommended Soldering Conditions (Please use this product by reflow soldering)

7-1 Recommended Footprint

Termination Number : Please refer to the equivalent circuit in chapter 3.



7-2 Recommended Reflow Pattern



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 of terminal electrode.

4 seconds max. at 260℃.

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.

9. Other

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