

CUSTOMER APPROVAL SHEET

CUSTOMER :

CUSTOMER P/N :

DESCRIPTION :

OUR ITEM : CMTW2012P2T Series

QUANTITY :

DATE : 2026/01/06

SPECIFICATION

	“ √ ”	CUSTOMER'S SIGNATURE	NOTE
FULL APPROVAL			
CONDITIONAL APPROVED			
REJECTED			

DRAWN BY	CHECKED BY	APPROVED BY
Lynn	Nady	DEMI

Head office

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Wire Wound Type Common Mode Filter

1.Feature

- 1.High impedance at high frequency effects excellent noise suppression performance.
- 2.The choke Coils structure enables noise suppression without degrading the signal.

2.Applications

SMD common mode filter specifically designed to eliminate common mode noise in USB 2.0, IEEE1394, and LVDS applications.

3.Product Identification



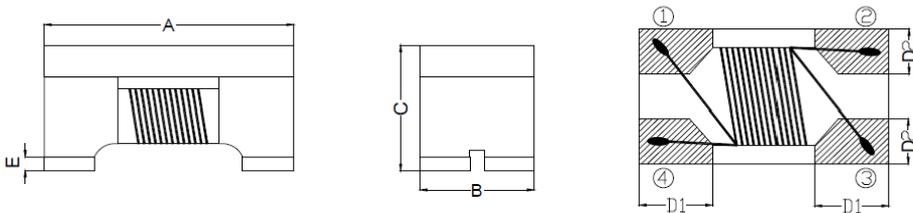
Series Name	Dimensions (L x W x H)		Internal Code	
CMTW	2012	2.0 x 1.2 x 1.2 mm	P2	2 Set of Wires
			T	Taping

Impedance		Tolerance	
670	67Ω	Y	25%

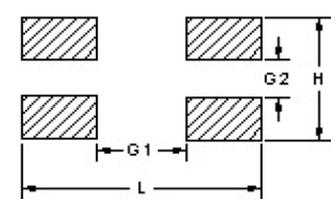
4.Rating

- 1.Operating Temperature : - 40°C ~ +125°C
- 2.Operating Temperature : - 40°C ~ +125°C

5.Shape and Dimension



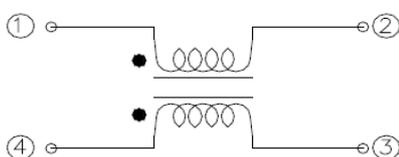
6.Soldering and Mounting



Dimensions(mm)

Part No.	A	B	C	D1	D2	E	H	G1	G2	L
CMTW2012P2T	2.00	1.20	1.20	0.50	0.51	0.15	1.40	1.25	0.45	2.60
	±0.20	±0.20	±0.20	±0.1	±0.1	±0.1	Ref.	Ref.	Ref.	Ref.

7.Schematic Diagram



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8. Electrical Characteristics

Test Item	Impedance (Ω) $\pm 25\%$	DCR (Ω) Max.	Rated Current (mA) Max.	Rated Volt. (Vdc) Max.	Withstand Volt. (Vdc) Max.	I.R (M Ω) Min.	Test Frequency
CMTW2012P2T-670Y	67	0.25	400	50	125	10	100MHz
CMTW2012P2T-900Y	90	0.30	400	50	125	10	100MHz
CMTW2012P2T-121Y	120	0.30	400	50	125	10	100MHz
CMTW2012P2T-161Y	160	0.35	350	50	125	10	100MHz
CMTW2012P2T-181Y	180	0.35	350	50	125	10	100MHz
CMTW2012P2T-201Y	200	0.40	300	50	125	10	100MHz
CMTW2012P2T-221Y	220	0.40	300	50	125	10	100MHz
CMTW2012P2T-261Y	260	0.40	300	50	125	10	100MHz
CMTW2012P2T-361Y	360	0.50	300	50	125	10	100MHz

Note

All test data referenced to 25°C ambient.

9. Soldering and Mounting

1. Soldering

Mildly activated rosin fluxes are preferred. The terminations are suitable for re-flow soldering systems. If hand soldering cannot be avoided, the preferred technique is the utilization of hot air soldering tools.

1.1 Lead Free Solder Re-flow

Recommended temperature profiles for lead free re-flow soldering in Soldering Reflow & Reflow Profiles & Package Thickness/Volume and Classification Temperature (Tc) (J-STD-020F)

1.2 Soldering Iron:

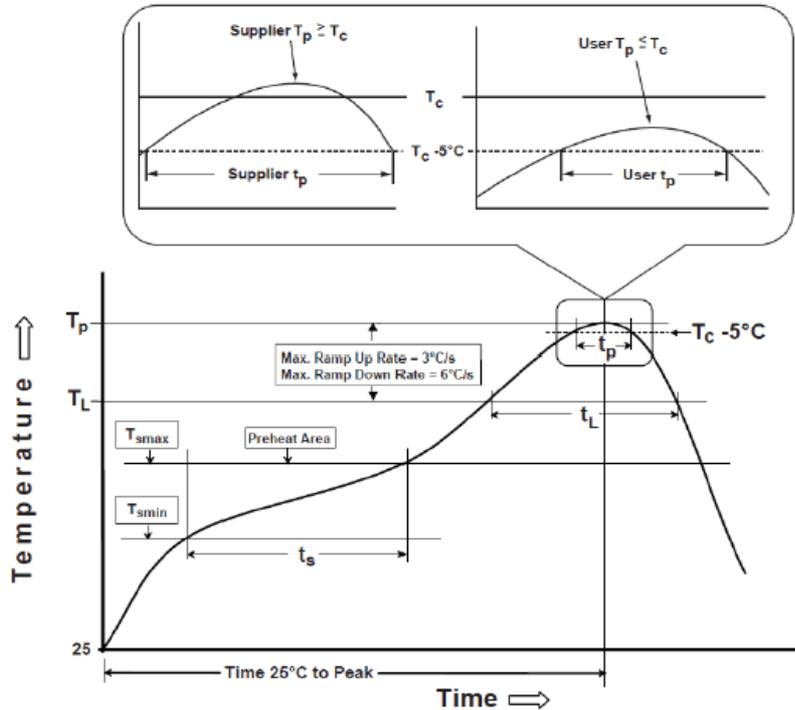
Products attachment with a soldering iron is discouraged due to the inherent process control limitations. If a soldering iron must be employed the following precautions are recommended.

(Iron soldering temperature profiles)

1. Preheat circuit and products to 150°C
2. Never contact the ceramic with the iron tip.
3. Use a 20 watt soldering iron with tip diameter of 1.0mm.
4. 350°C tip temperature (Max)
5. 1.0mm tip diameter (Max)
6. Limit soldering time to 4~5sec.

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Soldering Reflow



Reflow times : 3 times max.

Reflow Profiles

Profile Type:	Pb-Free Assembly
Preheat	
Temperature Min(T_{smin})	150°C
Temperature Max(T_{smax})	200°C
Time(t_s)from(T_{smin} to T_{smax})	60-120seconds
Ramp-up rate(T_L to T_p)	$3^\circ\text{C}/\text{second max.}$
Liquidus temperature(T_L)	217°C
Time(t_L)maintained above T_L	60-150 seconds
Classification temperature(T_c)	See Table (1.2)
Time(t_p) at $T_c - 5^\circ\text{C}$ (T_p should be equal to or less than T_c)	< 30 seconds
Ramp-up rate(T_L to T_p)	$6^\circ\text{C}/\text{second max.}$
Time 25°C to peak temperature	8 minutes max.

Note

T_p : maximum peak package body temperature, T_c : the classification temperature.

For user (customer) T_p should be equal to or less than T_c .

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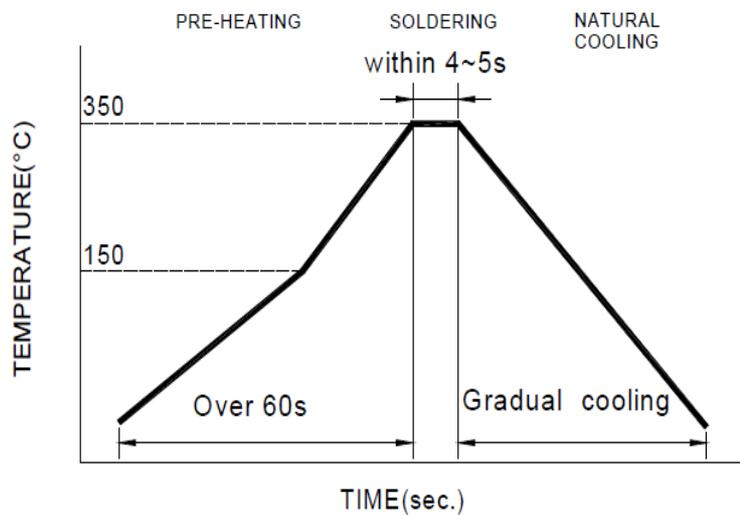
Package Thickness/Volume and Classification Temperature (Tc)

	Package Thickness	Volume mm ³ <350	Volume mm ³ 350-2000	Volume mm ³ >2000
PB-Free Assembly	<1.6mm	260°C	260°C	260°C
	1.6-2.5mm	260°C	250°C	245°C
	≥2.5mm	260°C	245°C	245°C

Note

Reflow is referred to standard IPC/JEDEC J-STD-020F

Iron Soldering



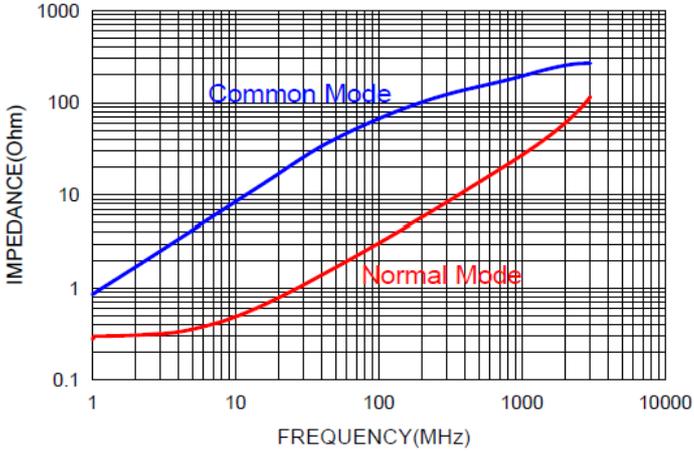
Iron Soldering times : 1 times max

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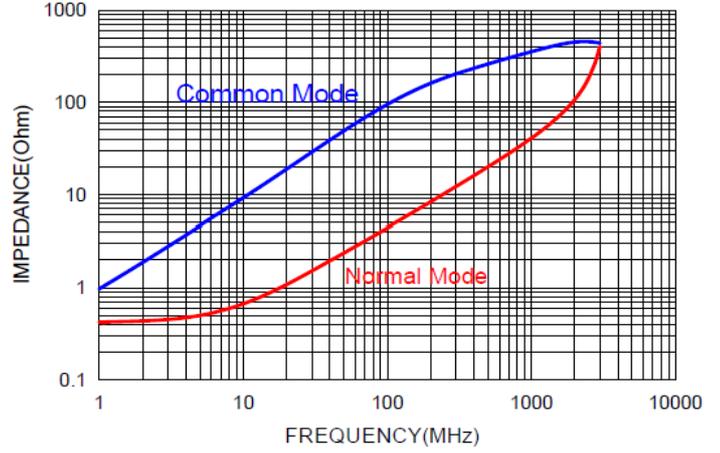
Material Characteristic Curve

1. Impedance VS Frequency

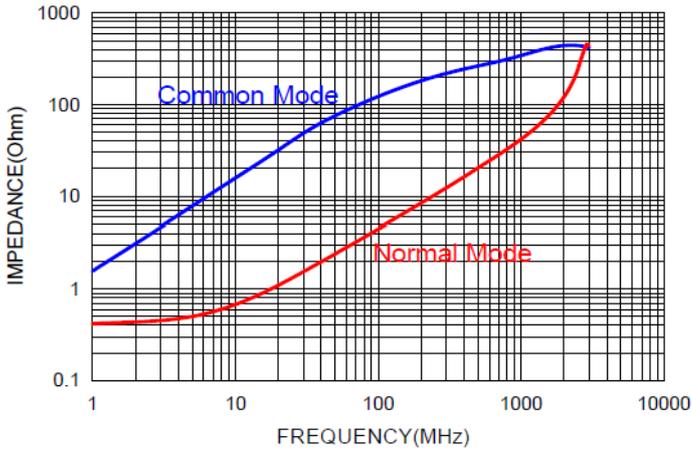
CMTW2012P2T-670Y



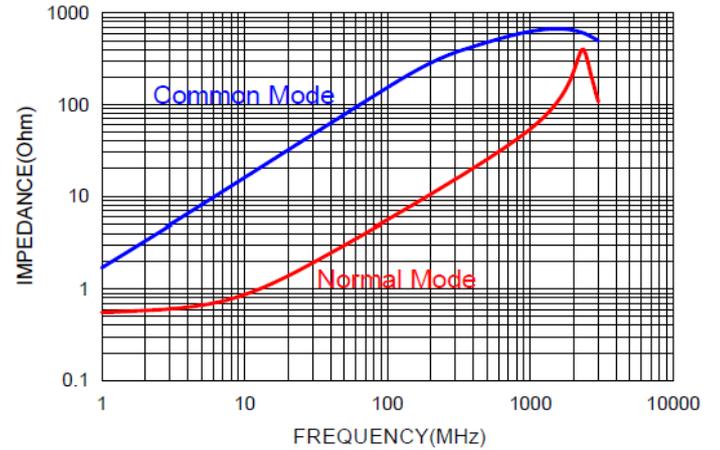
CMTW2012P2T-900Y



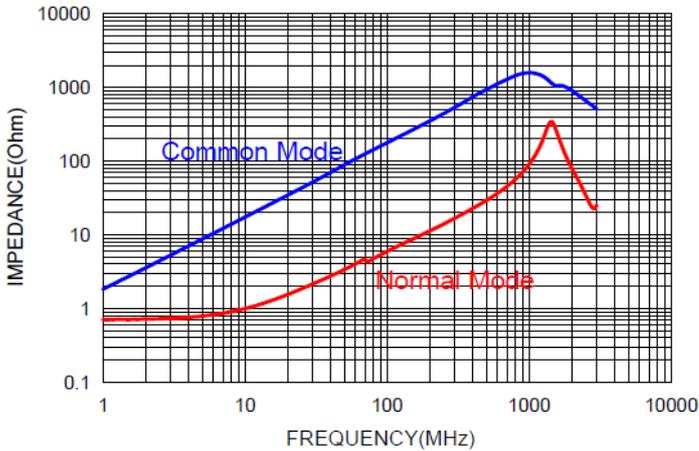
CMTW2012P2T-121Y



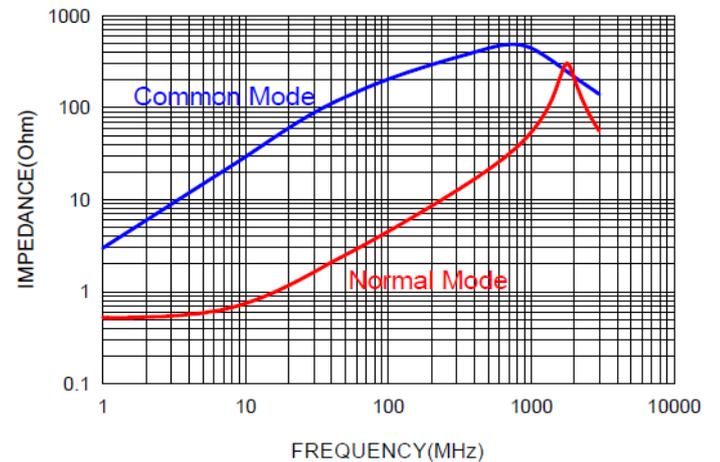
CMTW2012P2T-161Y



CMTW2012P2T-181Y

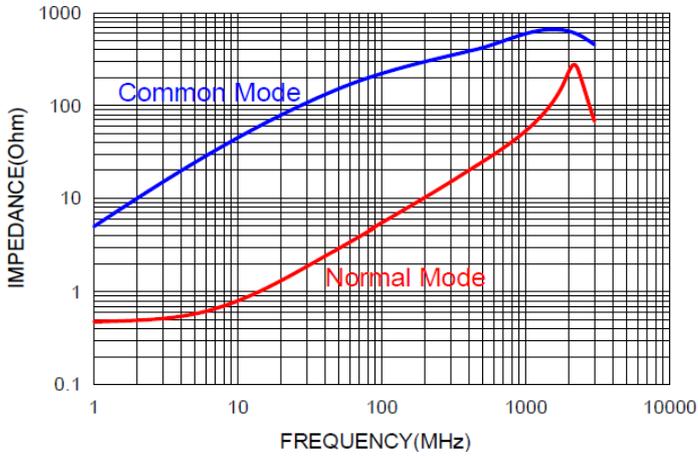


CMTW2012P2T-201Y

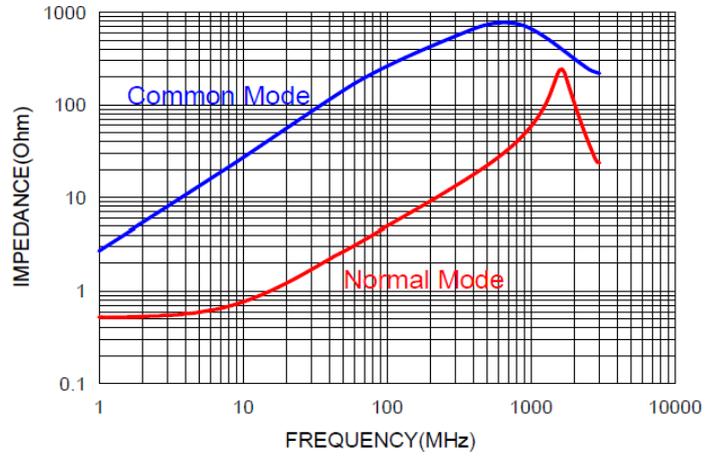


Wire Wound Type Common Mode Filter

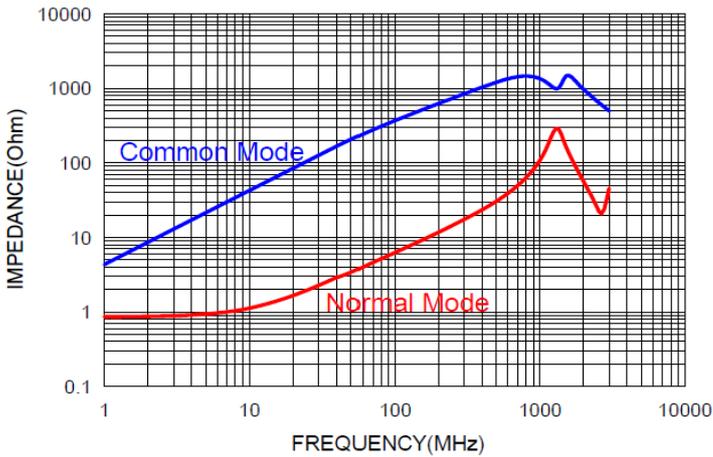
CMTW2012P2T-221Y



CMTW2012P2T-261Y



CMTW2012P2T-361Y



Wire Wound Type Common Mode Filter

Reliability and Test Conditions

ITEM	Conditions	Specification
Life Test	<p>Preconditioning: Run through reflow for 3 times. (IPC/JEDECJ-STD-020F Classification Reflow Profiles)</p> <p>Temperature : 125±2°C</p> <p>Applied current : rated current</p> <p>Duration : 1000±12hrs</p> <p>Measured at room temperature after placing for 24 hrs.</p>	<p>Appearance : No damage.</p> <p>Inductance : within±10% of initial value.</p> <p>DCR : within±15% of initial value and shall not exceed the specification value.</p>
Load Humidity	<p>Preconditioning: Run through reflow for 3 times. (IPC/JEDECJ-STD-020F Classification Reflow Profiles)</p> <p>Humidity : 85±3% RH</p> <p>Temperature : 85°C±2°C</p> <p>Duration:1000hrs Min.</p> <p>Bead:with 100% rated current</p> <p>Inductance:with 10% rated current</p> <p>Measured at room temperature after placing for 24 hrs.</p>	<p>Appearance : No damage.</p> <p>Inductance : within±10% of initial value.</p> <p>DCR : within±15% of initial value and shall not exceed the specification value.</p>
Moisture Resistance	<p>Preconditioning: Run through reflow for 3 times. (IPC/JEDECJ-STD-020F Classification Reflow Profiles)</p> <p>1.Baked at 50°C for 25hrs, measured at room temperature after placing for 4 hrs.</p> <p>2.Raise temperature to 65±2°C 90-100%RH in 2.5hrs, and keep 3 hours, cool down to 25°C in 2.5hrs.</p> <p>3.Raise temperature to 65±2°C 90-100%RH in 2.5hrs, and keep 3 hours, cool down to 25°C in 2.5hrs, keep at 25°C for 2hrs then keep at -10°C for 3hrs.</p> <p>4.Keep at 25°C 80-100%RH for 15min and vibrate at the frequency of 10 to 55 Hz to 10 Hz, measured at room temperature after placing for 1~2 hrs.</p>	<p>Appearance : No damage.</p> <p>Inductance : within±10% of initial value.</p> <p>DCR : within±15% of initial value and shall not exceed the specification value.</p>
Thermal Shock	<p>Preconditioning: Run through reflow for 3 times. (IPC/JEDECJ-STD-020F Classification Reflow Profiles)</p> <p>Step1 : -40±2°C 30±5min</p> <p>Step2 : 125±2°C ≤ 0.5min</p> <p>Step3 : 125±2°C 30±5min</p> <p>Number of cycles : 500</p> <p>Measured at room temperature after placing for 24 hrs.</p>	<p>Appearance : No damage.</p> <p>Inductance : within±10% of initial value.</p> <p>DCR : within±15% of initial value and shall not exceed the specification value.</p>

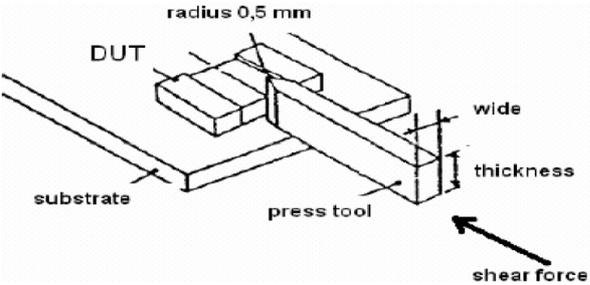
Wire Wound Type Common Mode Filter

Reliability and Test Conditions

ITEM	Conditions					Specification
Vibration	Preconditioning: Run through reflow for 3 times. (IPC/JEDECJ-STD-020F Classification Reflow Profiles) Oscillation Frequency : 10Hz ~ 2kHz ~ 10Hz for 20 minutes Equipment : Vibration checker Total Amplitude : 10g Testing Time : 12 hours(20 minutes, 12 cycles each of 3 orientations)					Appearance : No damage. Inductance : within±10% of initial value. DCR : within±15% of initial value and shall not exceed the specification value.
Bending	Shall be mounted on a FR4 substrate of the following dimensions >=0805 inch(2012mm):40x100x1.2mm <0805 inch(2012mm):40x100x0.8mm Bending depth: >=0805 inch(2012mm):1.2mm <0805 inch(2012mm):0.8mm duration of 10 sec.					Appearance : No damage. Inductance : within±10% of initial value. DCR : within±15% of initial value and shall not exceed the specification value.
Shock	Test condition :					Appearance : No damage. Inductance : within±10% of initial value. DCR : within±15% of initial value and shall not exceed the specification value.
	Type	Park Value (g's)	Normal duration (D) (ms)	Wave form	Velocity change (Vi)ft/sec	
	SMD	50	11	Half-sine	11.3	
	Lead	50	11	Half-sine	11.3	
3 shocks in each direction along 3 perpendicular axes. (18 shocks).						
Solderability	a. Method B, 4hrs @155°C dry heat @235°C±5°C Testing Time :5 +0/-0.5 seconds b. Method D category 3. (8hours ± 15 min)@ 260°C±5°C Testing Time :30 +0/-0.5 seconds					More than 95% of the terminal electrode should be covered with solder.
Resistance to Soldering Heat	Temperature(°C)	Time(s)	Number of heat cycles	Temperature ramp/immersion and emersion rate		Appearance : No damage. Inductance : within±10% of initial value. DCR : within±15% of initial value and shall not exceed the specification value.
	260 ±5 (solder temp.)	10 ±1	1	25mm/s ±6 mm/s		

Wire Wound Type Common Mode Filter

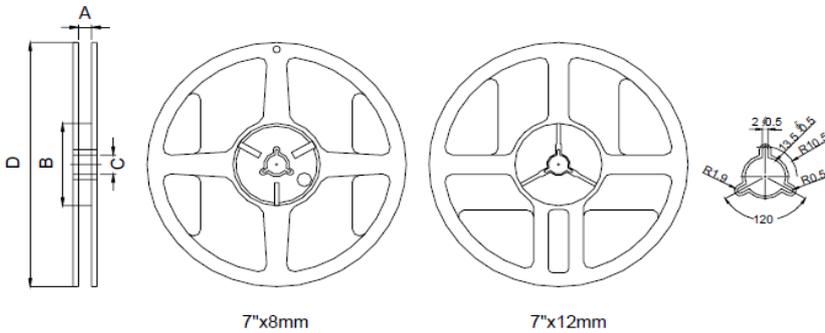
Reliability and Test Conditions

ITEM	Conditions	Specification
Terminal Strength	<p>Preconditioning: Run through reflow for 3 times. (IPC/JEDECJ-STD-020F Classification Reflow Profiles) With the component mounted on a PCB with the device to be tested, apply a force ($>0805:1\text{kg}$, $\leq 0805:0.5\text{kg}$) to the side of a device being tested.</p> <p>This force shall be applied for 60 ± 1 seconds. Also the force shall be applied gradually as not to apply a shock to the component being tested.</p> 	<p>Appearance : No damage.</p> <p>Inductance : within $\pm 10\%$ of initial value.</p> <p>DCR : within $\pm 15\%$ of initial value and shall not exceed the specification value.</p>

Wire Wound Type Common Mode Filter

Packing Specifications

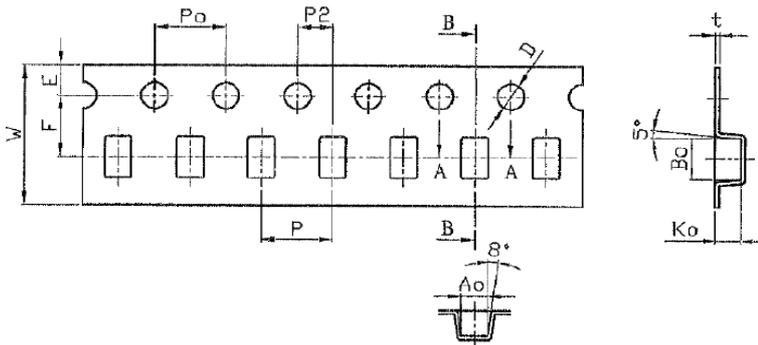
1.Reel Dimension



Dimensions(mm)

Item	A	B	C	D
7"x 8mm	9.0	60.0	13.5	178
	±0.5	±2	±0.5	±2

2.Taping Dimension

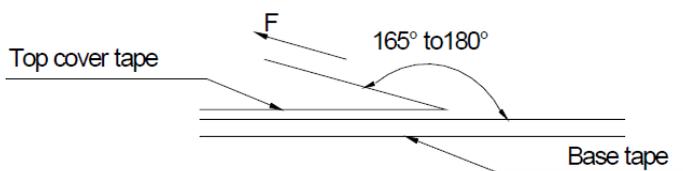


Dimensions(mm)

Item	W	P	E	F	P2	D	P0	A0	B0	K0	t
CMTW2012P2T	8.00	4.00	1.75	3.50	2.00	1.50	4.00	1.50	2.35	1.45	0.28
	±0.1	±0.1	±0.1	±0.05	±0.05	+0.1/-0.0	±0.1	±0.1	±0.1	±0.1	±0.05

3.Tearing Off Force

The force for tearing off cover tape is 15 to 80 grams in the arrow direction under the following conditions.



4.Packaging Quantity

Item	Chip / Reel
CMTW2012P2T	2,000 PCS

Wire Wound Type Common Mode Filter

5.Storage Conditions

- 1.Temperature and humidity conditions : Less than 40°C and 60% RH.
- 2.Recommended products should be used within 12 months from the time of delivery.
- 3.The packaging material should be kept where no chlorine or sulfur exists in the air.
- 4.Minimum packages, such as polyvinyl heat-seal packages shall not be opened until just before they are used.
- 5.Products meet IPC/JEDEC J-STD-020D standard-MSL, level 1.

Note

- 1.Please make sure that your product has been evaluated and confirmed against your specifications when our product is mounted to your product.
- 2.All the items and parameters in this product specification have been prescribed on the premise that our product is used for the purpose,under the condition and in the environment agreed upon between you and us. You are requested not to use our product deviating from such agreement.
- 3.Please keep the distance between transformer/coil and other components (refer to the standard IEC 950)