

## I . SCOPE :

This specification applies to the Pb Free Signal Common mode filters  
for MCU-453226-SERIES

### PRODUCT IDENTIFICATION

MCU- 453226 - 110 Y

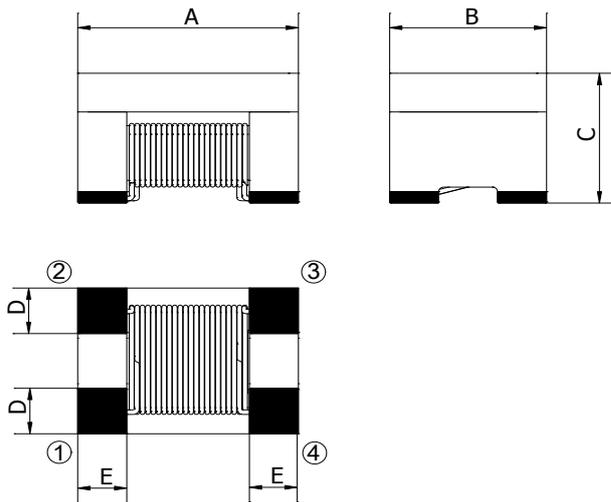
①      ②      ③    ④

- ① Product Code
- ② Dimensions Code
- ③ Inductance Code
- ④ Tolerance Code
- ⑤ Inner Control Code

## II . INDEX :

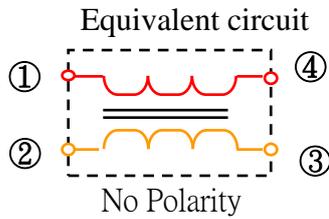
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8. Unless otherwise specified, test condition should be Temp. = $20\pm 5^{\circ}\text{C}$ , Humidity = 35~85% But if needed, then test condition should be Temp. = $20\pm 2^{\circ}\text{C}$ , Humidity = $65\pm 5\%$		
9. SHELF LIFE Storage Condition: The temperature should be within $-40^{\circ}\text{C}$ ~ $105^{\circ}\text{C}$ and humidity should be less than 75%RH. The product should be used within 12 months from the time of delivery. <b>In addition, suggest to use product within 6 months from the time of delivery.</b>		

## (1) SHAPES AND DIMENSIONS



A	: 4.5 ± 0.2	mm
B	: 3.2 ± 0.2	mm
C	: 2.6 ± 0.2	mm
D	: 0.80 Typ.	mm
E	: 0.70 Typ.	mm

## SCHEMATIC



## (2) ELECTRICAL SPECIFICATIONS

### SEE TABLE 1

#### TEST INSTRUMENTS

L/Z : HP 4291B IMPEDANCE ANALYZER (or equivalent)

RDC : CHROMA MODEL 16502 MILLIOHMMETER (or equivalent)

I.R : CHROMA MODEL 19073 AC/DC/IR HIPOT TESTER (or equivalent)

## (3) CHARACTERISTICS

(3)-1 Operate temperature range ..... -40°C ~ +125°C

(Including self temp. rise)

(3)-2 Storage temperature range ..... -40°C ~ +125°C



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**TABLE 1**

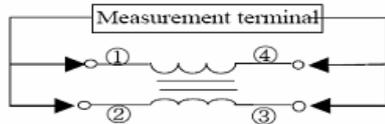
MAGLAYERS PT/NO.	Inductance @100kHz/0.1V L(μH)	Impedance Z (Ω) @10MHz/0.1V		RDC (Ω) Max.	IDC Max.(A)	Rated voltage (V)max.	Withstanding voltage (V)max.	Insulation Resistance (MΩ)Min.
		Min.	Typ.					
MCU-453226-110Y-□□	11 ± 30%	300	600	0.60	0.25	50V	125	10
MCU-453226-220Y-□□	22 ± 30%	500	1200	1.00	0.20	50V	125	10
MCU-453226-510Y-□□	51 ± 30%	1000	2800	1.00	0.20	50V	125	10
MCU-453226-101Y-□□	100 ± 30%	2000	5800	2.00	0.15	50V	125	10

※ IDC : Based on temperature rise (ΔT : 40°C Typ.)

**TEST EQUIPMENT**

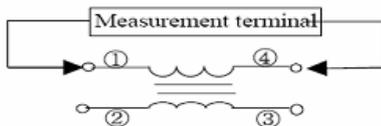
**1. Impedance / Inductance**

Measured by using HP 4291B RF Impedance Analyzer.



**2. DC Resistance**

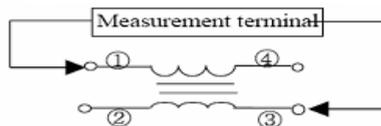
Measured by using Chroma 16502 mill ohm meter



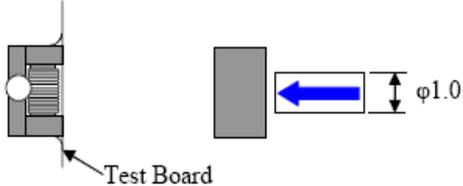
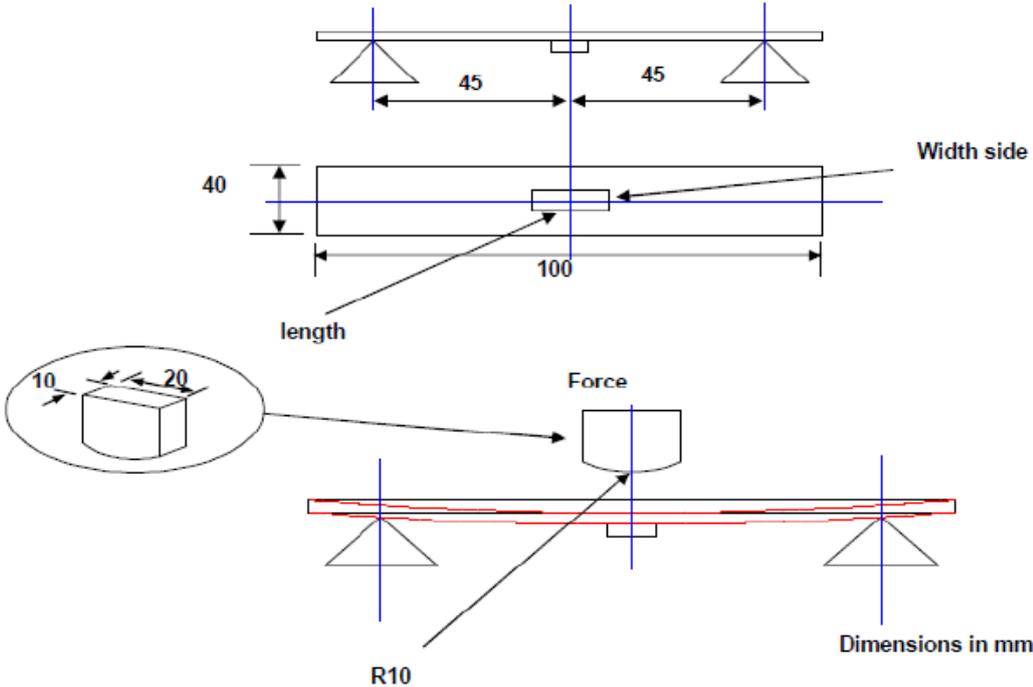
**3. Insulation Resistance**

Measured by using Chroma 19073

Measurement voltage: 80v, Measurement time: 3 sec.



## (4) RELIABILITY TEST METHOD

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. Dip pads in flux and dip in solder pot ( 96.5 Sn/3.5 Ag solder) at 260°C ±5°C.
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.

Item	Specifications	Test conditions
High temperature		500hrs.at rated operating temperature
Biased Humidity	Appearance : Ferrite shall not be damaged. Impedance:Within±20% of the initial value.	5000hours 85°C/85%RH. Unpowered. Measurement at 24±4hours after test conclusion.
Temperature Cycling	insulation resistance: >10(MΩ) DC resistance : standard value inside.	100 cycles (-40°C to +125°C) Measurement at 24±4 hours after test conclusion. 30min maximum dwell time at each temperature extreme. 1 min. maximum transition time.
Operational Life		500hrs. @125°C. If 105°C or 125°C part will be Tested at that temperature. Measurement at 24±4 hours after test conclusion
Mechanical Shock	Impedance:Within±20% of the initial value.	peak acceleration : 100 g's Duration of pulse : 6 ms Waveform : Half-sine Velocity change : 12.3 ft/sec Direction : X , Y , Z ( 3axes/3 times )
Resistance to Solvents	No apparent damage	Note: It is applicable to marked and/or coated components. Add Aqueous wash chemical OKEMCLEAN (A 6% concentrated Oakite cleaner) or equivalent. Do not use banned solvents.
Vibration	Appearance : Ferrite shall not be damaged.	5g's for 20 minutes, 12 cycles each of 3 orientations. Test from 10-2000 Hz.
Resistance to Soldering Heat	The chip shall not crack. More than 75% of the terminal electrode shall be covered with solder.	Solder temperature : 260 ±5°C Dip time: 10 ±1 seconds The chip shall not crack. More than 75% of the terminal electrode shall be covered with solder.

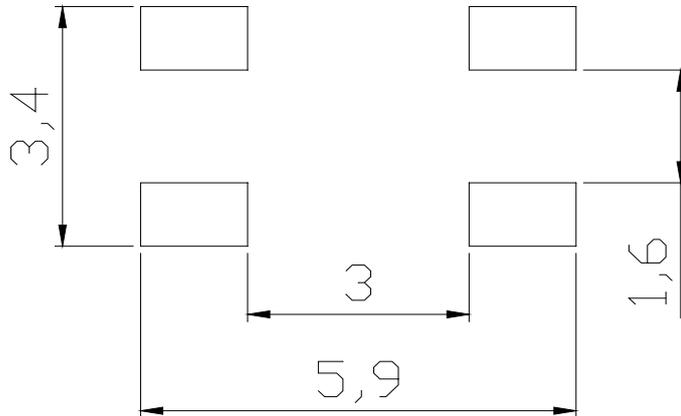


## (5) RECOMMENDED SOLDERING CONDITIONS

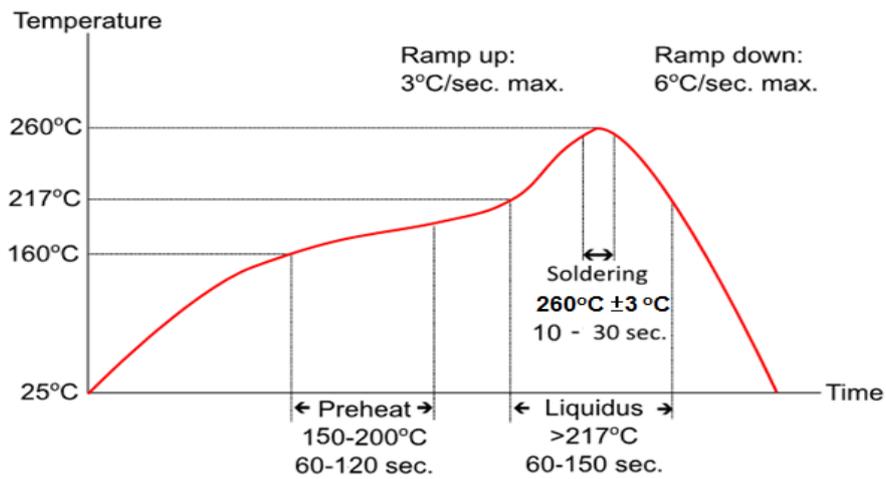
(Please use this product by reflow soldering)

### (5)-1 RECOMMENDED FOOTPRINT

Unit: mm



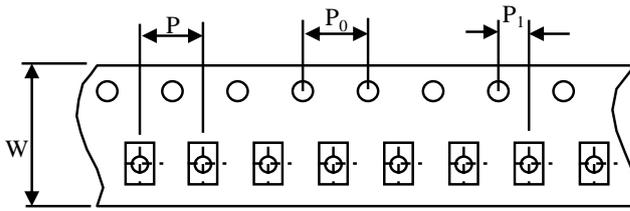
### (5)-2 RECOMMENDED REFLOW PATTERN



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## (6) PACKAGING

### (6)-1 CARRIER TAPE DIMENSIONS (mm)



$W$  : 12.0 mm

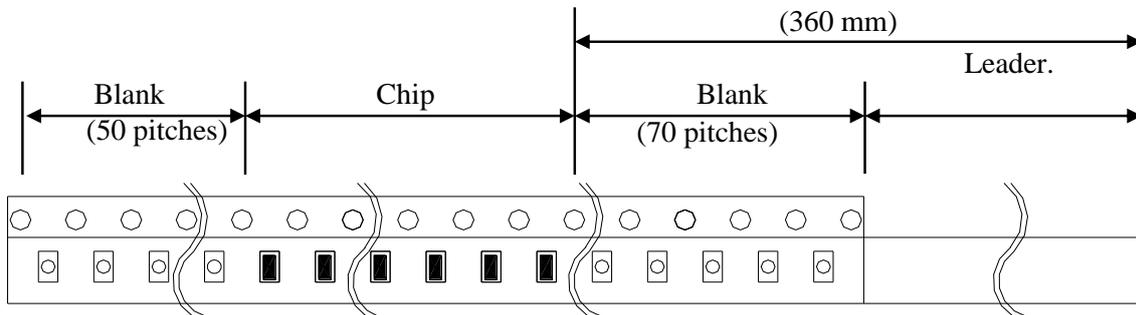
$P$  : 8.0 mm

$P_0$  : 4.0 mm

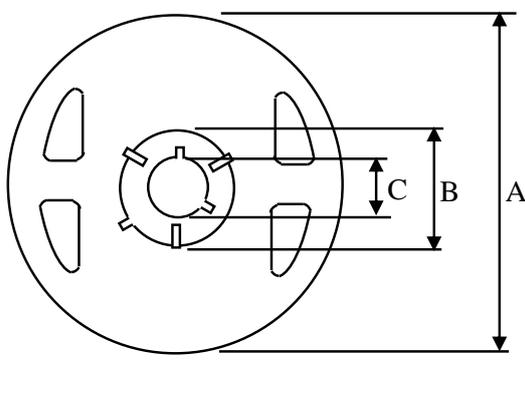
$P_1$  : 2.0 mm

### (6)-2 TAPING DIMENSIONS (mm)

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



### (6)-3 REEL DIMENSIONS



$A$  : 330 mm

$B$  : 100 mm

$C$  : 13.0 mm

$D$  : 13.4 mm



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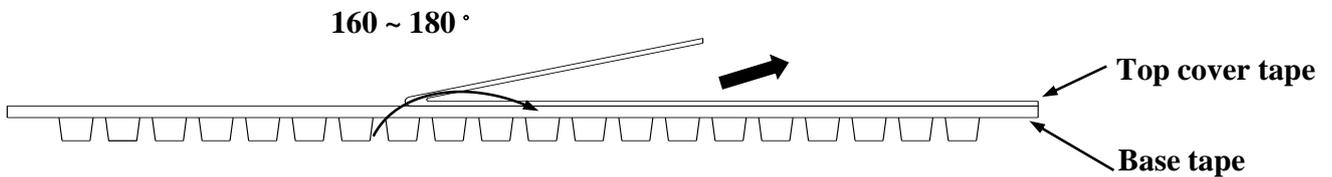
## (6)-4 COVER TAPE PEEL STRENGTH

The force for tearing off cover tape is 0.1~0.6(N) in the arrow direction at the following conditions:

Temperature : 5 ~ 35°C

Humidity : 45 ~ 85%

Atmospheric pressure : 860 ~ 1060 hpa



## (6)-5 QUANTITY

2500 pcs/Reel

(6)-6 The products are packaged so that no damage will be sustained.

## (7) 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)

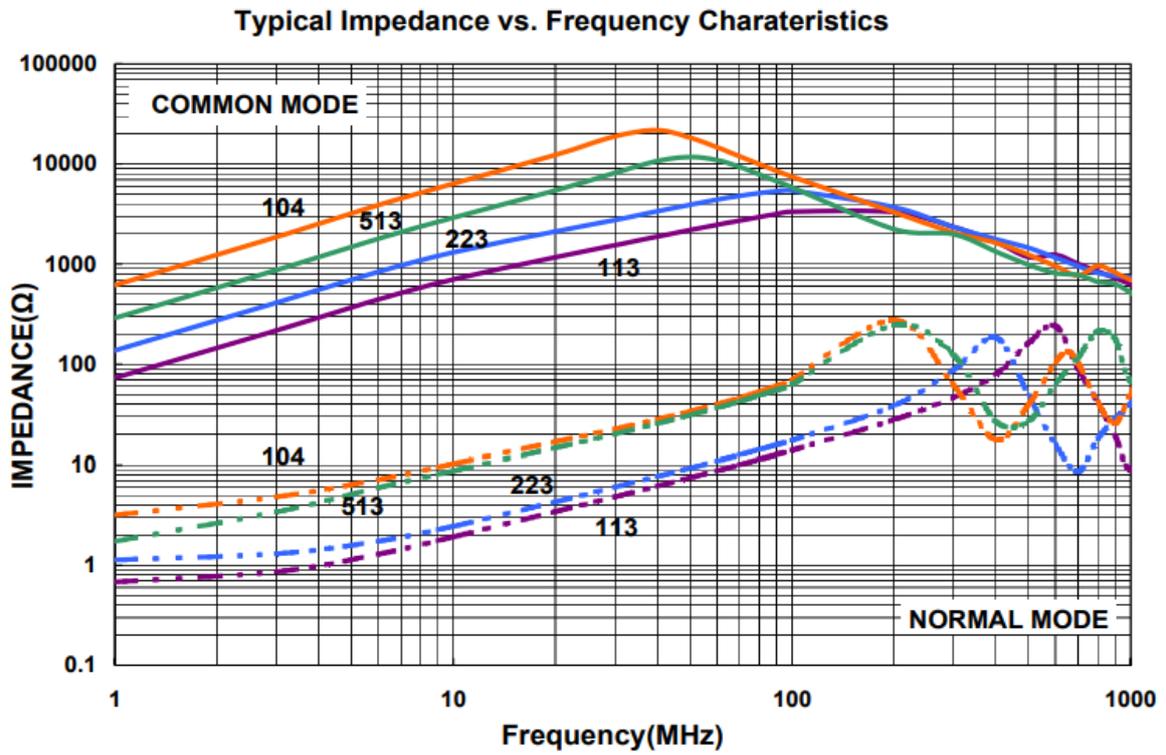
Vibrations or shocks which exceed the specified condition

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

Please note that the contents may change without any prior notice due to reasons such as upgrading.

# TYPICAL ELECTRICAL CHARACTERISTICS

## FREQUENCY vs. IMPEDANCE CURVE



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