SCOPE :

This specification applies to the Pb Free Signal Common mode filters

for MWCU-453226H1-SERIES

PRODUCT INDENTIFICATION

MWCU- 453226 H1 - 101 Y

① ② ③ ④ ⑤

① Product Code

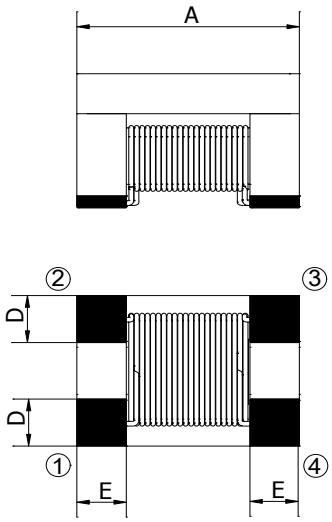
② Dimensions Code

③ Signal For AECQ-200

④ Inductance Code

⑤ Tolerance Code

(1) SHAPES AND DIMENSIONS



A : 4.5 ± 0.2 mm

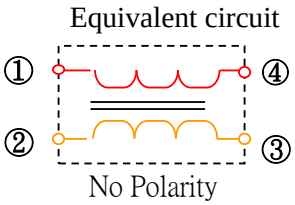
B : 3.2 ± 0.2 mm

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℃～＋125℃

(Including self temp. rise)

TABLE 1

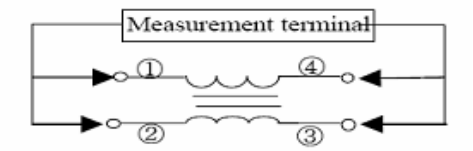
MAGLAYERS PT/NO.	Inductance @100kHz/0.1V L(μH)	Impedance Z (Ω) @10MHz/0.1V		RDC (Ω) Max.	Irms Max.(A)	Rated voltage (V)max.	Withstanding voltage (V)max.	Insulation Resistance (MΩ)Min.
		Min.	Typ.					
MWCU-453226H1-110Y	11 ± 30%	300	600	0.60	0.25	50V	125	10
MWCU-453226H1-220Y	22 ± 30%	500	1200	1.00	0.20	50V	125	10
MWCU-453226H1-510Y	51 ± 30%	1000	2800	1.00	0.20	50V	125	10
MWCU-453226H1-101Y	100 ± 30%	2000	5800	2.00	0.15	50V	125	10

※ IDC： Based on temperature rise (△T： 40℃ Typ.)

TEST EQUIPMENT

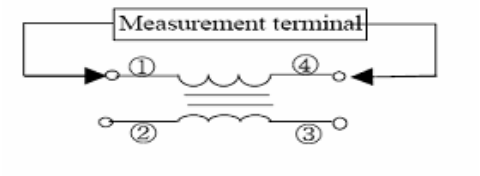
1. Impedance / Inductance

Measured by HP 4291B RF Impedance Analyzer.



2. DC Resistance

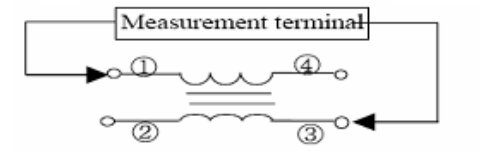
Measured by Chroma 16502 mill ohm meter



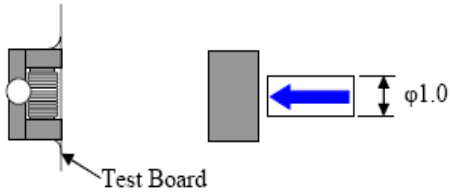
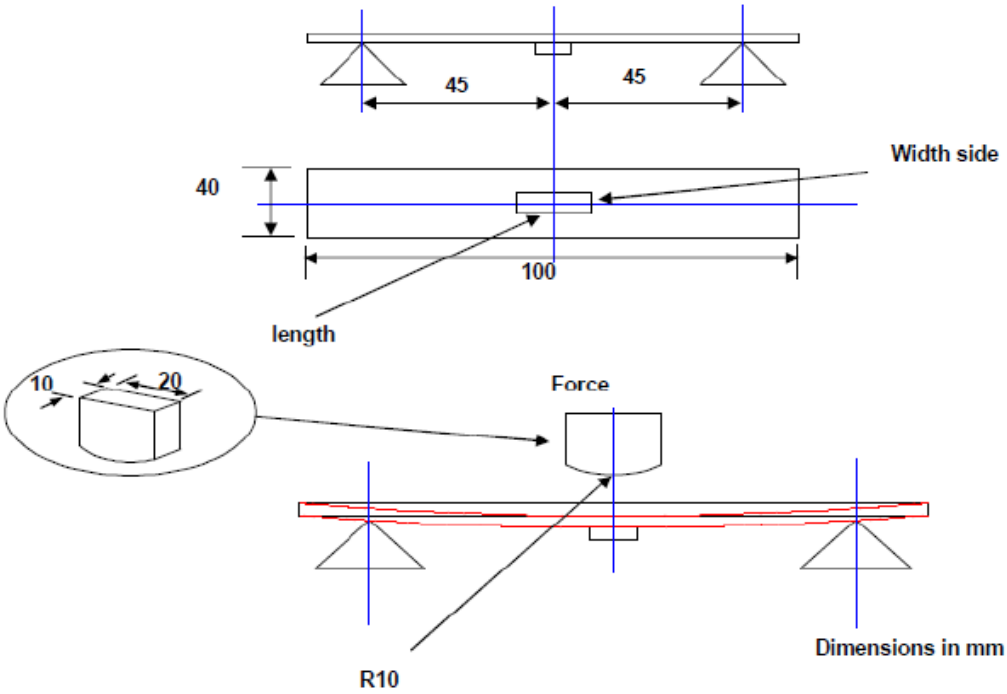
3. Insulation Resistance

Measured by Chroma 19073

Measurement voltage: 50v, Measurement time: 3 sec.

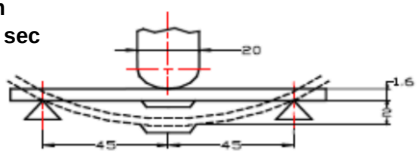


(4) RELIABILITY TEST METHOD

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.

(4) RELIABILITY TEST METHOD

Mechanical

Item	Specifications	Test conditions
Board Flex	The forces applied on the right conditions must not damage the terminal electrode and the ferrite.	Test device shall be soldered on the substrate Substrate Dimension: 100x40x1.6mm Deflection: 2.0mm Keeping Time: 60 sec 
Terminal Strength	The chip must not damage the terminal electrode and the ferrite.	Appendix 1 Note(AEC-Q200-005):Force of 1.8 kg for 60 seconds.
Solderability	The electrodes shall be at least 95% covered with new solder coating.	Pre-heating: 150℃, 1min Solder Composition: Sn/3.0Ag/0.5Cu Solder Temperature: 245±5℃ Immersion Time: 4±1sec
Resistance to Soldering Heat	Appearance:No damage Inductance change shall be within ±20%.	Pre-heating: 150℃, 1min Solder Composition: Sn/Ag3.0/Cu0.5 Solder Temperature: 260±5℃ Immersion Time: 10±1sec
Resistance to Solvents	There must be no change in appearance or obliteration of marking.	Inductors must withstand 6 minutes of alcohol or water.
Mechanical Shock	The forces applied on the right conditions must not damage the terminal electrode and the ferrite.	Pulse shape：Half-sine waveform Impact acceleration：100 g Pulse duration：6 ms Number of shocks：18 shocks (3 shocks for each face) Orientation：Bottom, top, left, right, front and rear faces
Vibration	Appearance:No damage Inductance change shall be within ±20%.	Vibration waveform: Sine waveform Vibration frequency: 10Hz~2000Hz Vibration acceleration: 5g Sweep rate: 0.764386otcave/minute Duration of test: 12 cycles each of 3 orientations 20 minutes for each cycle Vibration axes: X, Y & Z

(4) RELIABILITY TEST METHOD

Environmental

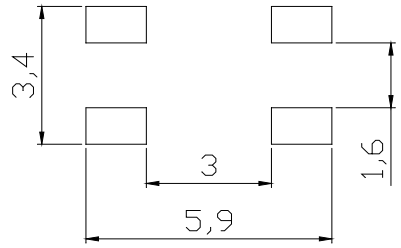
Item	Specifications	Test conditions
High Temperature Exposure (Storage)	Appearance:No damage (for microscope of CASTOR MZ-420X)Inductance change shall be within ±20%.	Temperature: 125±3℃ Time: 1000hrs Measured after exposure in the room condition for 24hrs
Operational Life		Temperature: 125±2℃ Appliend Current : Rated Current Time: 1000± 24 hrs Measured after exposure in the room condition for 24hrs
Biased Humidity		Temperature: 85±2℃ Relative Humidity: 85% Time: 1000hrs Measured after exposure in the room condition for 24hrs
Temperature Cycling		Total cycles: 1000 cycles Temperature Cycling Test Conditions : -50 to +125 ℃ Soak Mode Condition : 30 minutes Measured after exposure in the room condition for 24hrs
ESD		Test mode：Contact Discharge Discharge level：±6KV, Discharge interval：1 second Polarity of the output voltage：Positive and negative Number of discharge：Discharge +/- for 1 time for the 2 test points.
		Test Mode：Air Discharge Discharge level：±12KV, ±16KV, ±25KV Discharge interval：＜5 seconds Polarity of the output voltage：Positive and negative Number of discharge：Discharge +/- for 1 time for the 1~2 test points.

(5) RECOMMENDED SOLDERING CONDITIONS

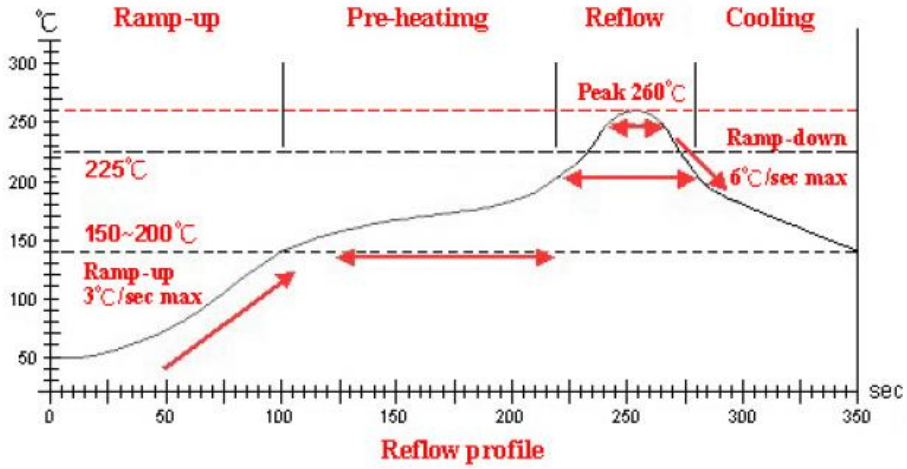
(Please use this product by reflow soldering)

(5)-1 RECOMMENDED FOOTPRINT

Unit: mm



(5)-2 RECOMMENED REFLOW PATTERN



Lead-Free(LF) **Refer to J-STD-020C**

Item	Ramp-up	Pre-heating	Reflow	Peak Temp.	Cooling
Temp. scope	R.T.~150℃	150℃~200℃	225℃	260±5℃	Peak Temp.~150℃
Time result	_	60~180 Sec.	20~60 Sec.	5~10 Sec.	_

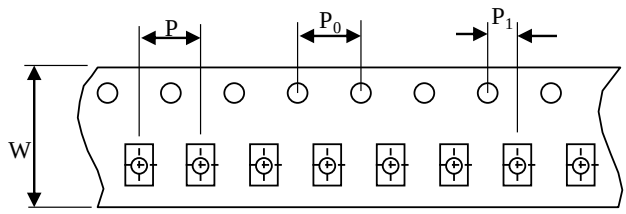
NOTE:

1. Re-flow possibile times:with in 2 times

2. Nitrogen adopted is recommended while in re-flow

(6) PACKAGING

(6)-1 CARRIER TAPE DIMENSIONS (mm)



W : 12.0 mm

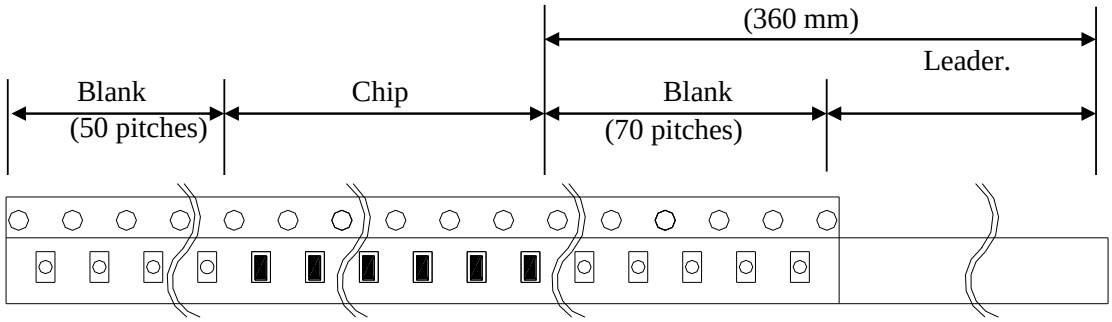
P : 8.0 mm

P0 : 4.0 mm

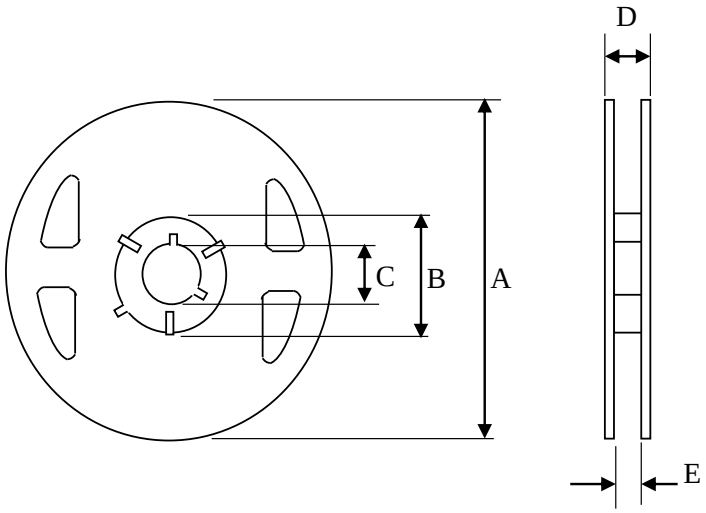
P1 : 2.0 mm

(6)-2 TAPING DIMENSIONS (mm)

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



(6)-3 REEL DIMENSIONS



A : 180 mm

B : 60 mm

C : 13.5 mm

D : 15.5 mm

E : 9.0 mm

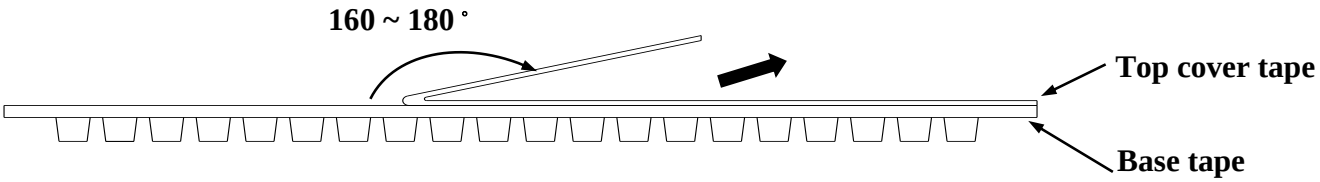
(6)-4 COVER TAPE PEEL STRENGTH

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

Temperature : 5 ~ 35℃

Humidity : 45 ~ 85%

Atmospheric pressure : 860 ~ 1060 hpa



(6)-5 QUANTITY

500 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.