MORE® CHANCE 茂昌电子

CUSTOMER :	STD
PRODUCTS :	Wire Wound Common Mode Chokes
PART NO :	MCSF Series
CUST P/ NO :	
DATE :	2025.04.16
SALES DEP :	
E-MAIL :	

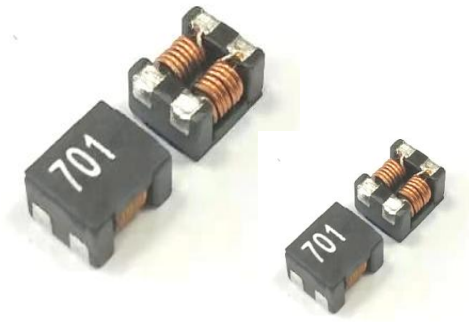
VERSION :	REV.A
CHANGE PROJECT :	-
BEFORE :	-
AFTER :	-
CHANGE DATE :	-
CUSTOMER SIGNATURE :	-

APPROVAL BY :	*CHECK BY :*	*DRAWN BY :*
Honey Wei	***Leo Wang***	***May Gao***

CHANGE HISTORY

Ver	Revision Items	Before Revision	After Revision	Date
Rev.A	-	-	-	2025.04.16

MCSF Series



- *Wire Wound Common Mode Chokes*
- *Operating Temperature up tp -40 ℃ ~ 125 ℃*
- *High Current up to 15A*
- *Low DCR down to 2.0 mOhms*
- *Environmental Lead free*
- *Environmental RoHS2.0 compliant*
- *Environmental halogen free*
- *Storage Temperature ：-40 ℃ ~ +85 ℃*
- *Packaging 13"Reel ,Plastic tape: 16/24 mm wide*

FEATURES

. Have achieved miniaturization while keeping characteristics by adoption of exclusive square type closed magnetic core
. Due to the low profile design,it is suitable for surface mount.
. High impedance characteristic has been a chieved a suprior effect for common mode noise suppression.
. This products have seria lized a large current product up to 10A corresponding for various DC power lines.

Applications

. Common mode noise countermea sures for DC power lines of electronic control equipment,
. multi-media equipment for automotives and various electronic equipment power supply lines.

PRODUCT IDENTIFICATION

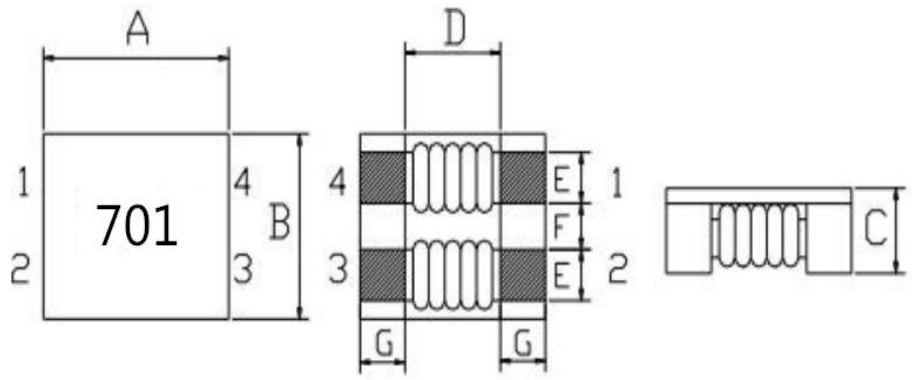
MC	SF	0706	Z	701
①	②	③	④	⑤

① Brand & Product classification
② Product Series NO.
③ External Dimensions.
④ Separator code.
⑤Impedance.

Example	Nominal Value
701	700Ω
301	300Ω

Mechanical & Dimensions

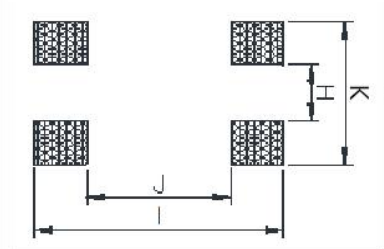
(Unit: mm)



Code	Dimensions
A	7.0 ± 0.5
B	6.0 ± 0.5
C	3.8 Max
D	3.5 Typ
E	1.5 Typ
F	1.5 Typ
G	1.7 Typ

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
H	1.5 Typ
I	8.0 Typ
J	3.0 Typ
K	5.0 Typ

Electrical Characteristics

Part Number	Impedane(Ω)[1]		DCR[2] (mΩ) Max	Rated Current[3] (A) Max		
	Min	Typ				
MCSF0706Z400	40.0	70.0	5.0	15.0		
MCSF0706Z101	100.0	140.0	10.0	9.0		
MCSF0706Z301	225.0	300.0	10.0	5.0		
MCSF0706Z501	275.0	450.0	10.0	5.0		
MCSF0706Z601	500.0	700.0	15.0	4.0		
MCSF0706Z701	500.0	700.0	15.0	4.0		
MCSF0706Z102	800.0	1020.0	17.0	3.0		
MCSF0706Z132	910.0	1300.0	21.0	2.5		
MCSF0706Z272	2000.0	2700.0	63.0	1.0		
MCSF0706Z302	2500.0	3000.0	75.0	0.9		

Note:

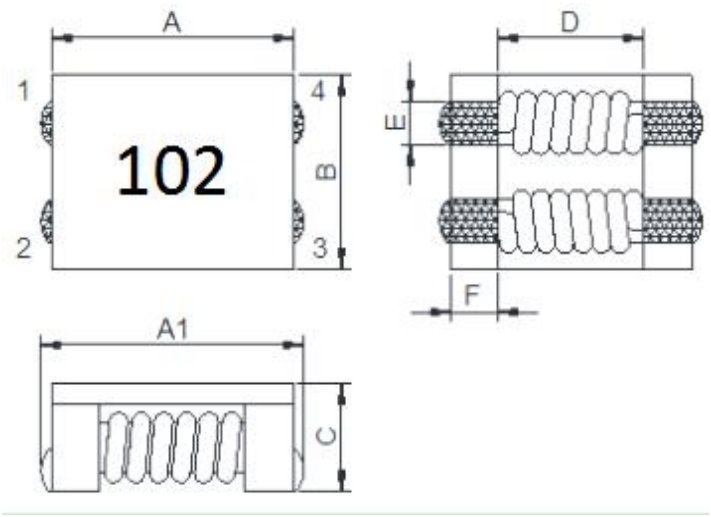
1.Impedane is measured at 0.5V and 100MHz.

2.The nominal DCR is measured at 20℃ ambient temperature.

3.The Rated Current is Operating Current.

Mechanical & Dimensions

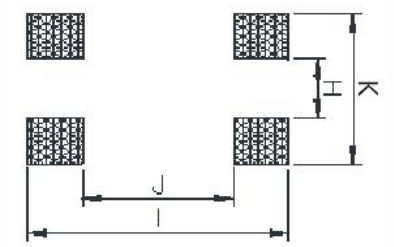
(Unit: mm)



Code	Dimensions
A	9.0 ± 0.5
B	7.0 ± 0.5
C	4.8 Max
D	5.6 Typ
E	1.5 Typ
F	2.0 Typ
G	1.7 Typ

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
H	1.5 Typ
I	8.0 Typ
J	5.0 Typ
K	5.5 Typ

Electrical Characteristics

Part Number	Impedane(Ω)[1]		DCR[2] (mΩ) Max	Rated Current[3] (A) Max		
	Min	Typ				
MCSF0907Z301	225.0	300.0	6.0	6.0		
MCSF0907Z501	450.0	600.0	8.0	5.5		
MCSF0907Z701	500.0	700.0	10.0	5.0		
MCSF0907Z102	750.0	1000.0	13.0	4.0		
MCSF0907Z222	1700.0	2200.0	50.0	3.0		
MCSF0907Z272	2000.0	2700.0	86.0	2.0		

Note:

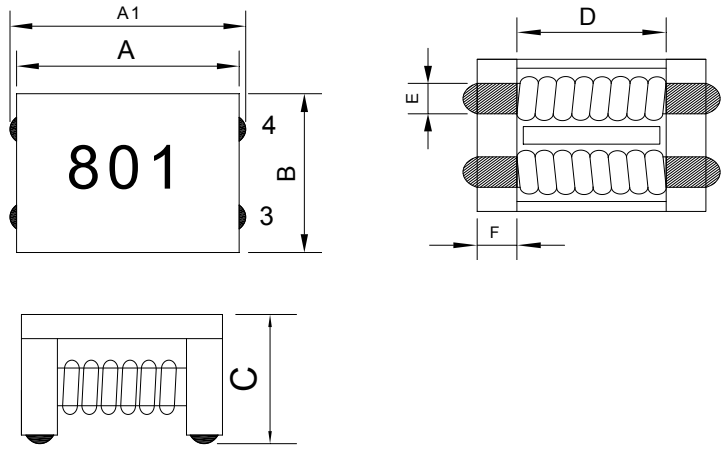
1.Impedane is measured at 0.5V and 100MHz.

2.The nominal DCR is measured at 20℃ ambient temperature.

3.The Rated Current is Operating Current.

Mechanical & Dimensions

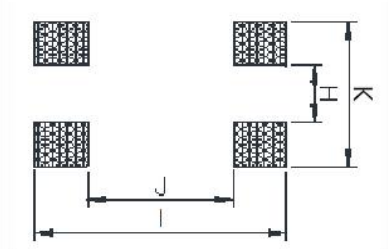
(Unit: mm)



Code	Dimensions
A	12.0 ± 0.5
A1	12.5 ± 0.5
B	10.8 ± 0.5
C	6.5 Max
D	7.0 Typ
E	2.7 Typ
F	2.5 Typ

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
H	2.0 Typ
I	12.5 Typ
J	6.5 Typ
K	8.5 Typ

Electrical Characteristics

Part Number	Impedane(Ω)[1]		DCR[2] (mΩ) Max	Rated Current[3] (A) Max		
	Min	Typ				
MCSF1211Z800	80.0	230.0	2.0	10.0		
MCSF1211Z701	500.0	700.0	6.0	8.0		
MCSF1211Z801	600.0	800.0	8.0	8.0		
MCSF1211Z102	750.0	1000.0	14.0	6.0		
MCSF1211Z222	2200.0	2500.0	35.0	1.8		
MCSF1211Z272	2300.0	2700.0	50.0	1.5		

Note:

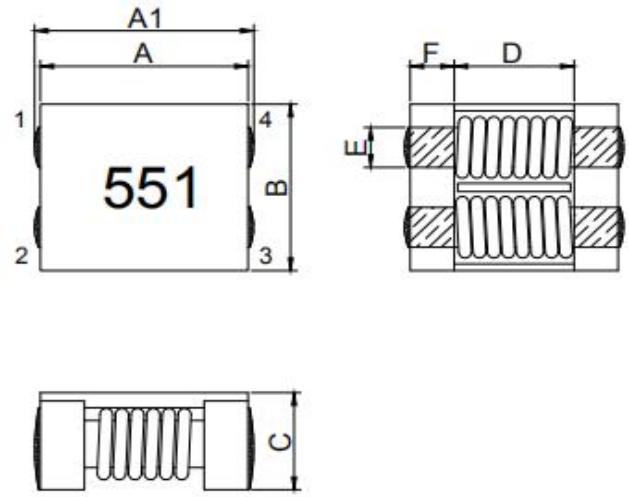
1.Impedane is measured at 0.5V and 100MHz.

2.The nominal DCR is measured at 20℃ ambient temperature.

3.The Rated Current is Operating Current.

Mechanical & Dimensions

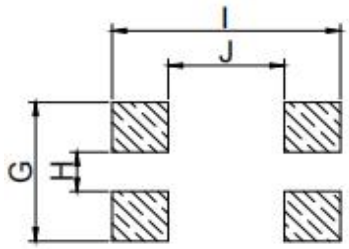
(Unit: mm)



Code	Dimensions
A	15.0 ± 0.5
B	13.0 ± 0.5
C	6.6 Max
D	9.4 Typ
E	2.6 Typ
F	2.5 Typ

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
G	9.5 Typ
H	3.3 Typ
I	16.0 Typ
J	8.8 Typ

Electrical Characteristics

Part Number	Impedane(Ω)[1]		DCR[2]	Rated Current[3]		
	Min	Typ	(mΩ) Max	(A) Max		
MCSF1513Z301	225.0	300.0	5.0	13.0		
MCSF1513Z551	400.0	550.0	6.0	10.0		
MCSF1513Z701	500.0	700.0	7.0	10.0		

Note:

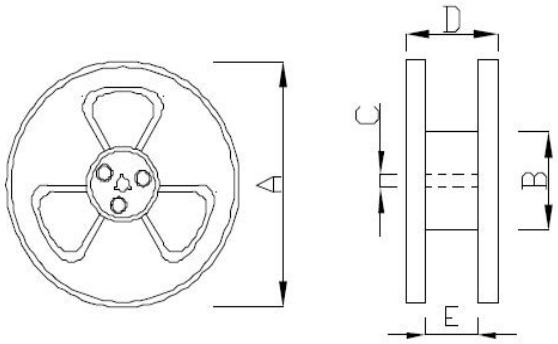
1.Impedane is measured at 0.5V and 100MHz.

2.The nominal DCR is measured at 20℃ ambient temperature.

3.The Rated Current is Operating Current.

Packaging

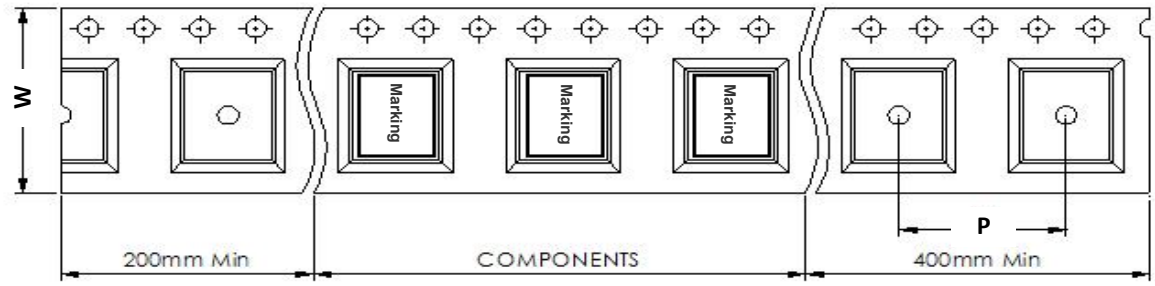
Reel Dimension:



P/N	A(mm)	B(mm)	C(mm)	D(mm)	E(mm)	Chip/Reel
MCSF0706Z	330	100	13.5	21.5	16.5	1,500
MCSF0907Z	330	100	13.5	30.4	24.4	700
MCSF1211Z	330	100	13.5	30.4	24.4	500
MCSF1513Z	330	100	13.5	34.8	32.5	350

Packaging

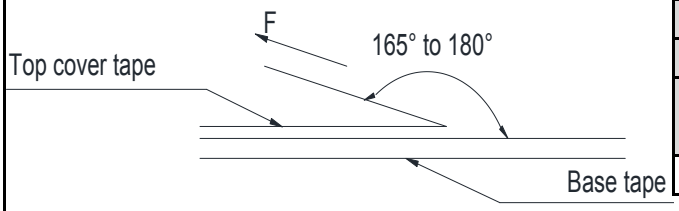
Tape Dimension:



P/N	W(mm)	P(mm)					
MCSF0706Z	16	12					
MCSF0907Z	24	16					
MCSF1211Z	24	16					
MCSF1513Z	24	16					

Packaging

Tearing Off Force:



The force tearing off cobe tape is 10 to 130 g.f in the arrow direction under the following conditions			
Room Temp (℃)	Room Humidity (%)	Room atrn (hPa)	Teaming Speed (mm/min)
5~35	45~85	860~1060	300

※Storage Conditions

1. Temperature and humidity conditions: -40℃ ~ +85℃ and 70% RH.
2. Recommended products should be used within 6 months form the time of delivery.
3. The packaging material should be kept where no chlorine or sulfur exists in the air.

※Transportation

1. Products should be handled with care to avoid damage or contamination from perspiration and skin oils.
2. The use of tweezers or vacuum pick up is strongly recommended for individual components.
3. Bulk handling should ensure that abrasion and mechanical shock are minimized.

Recommended Soldering Conditions

Figure 1. Re-flow Soldering

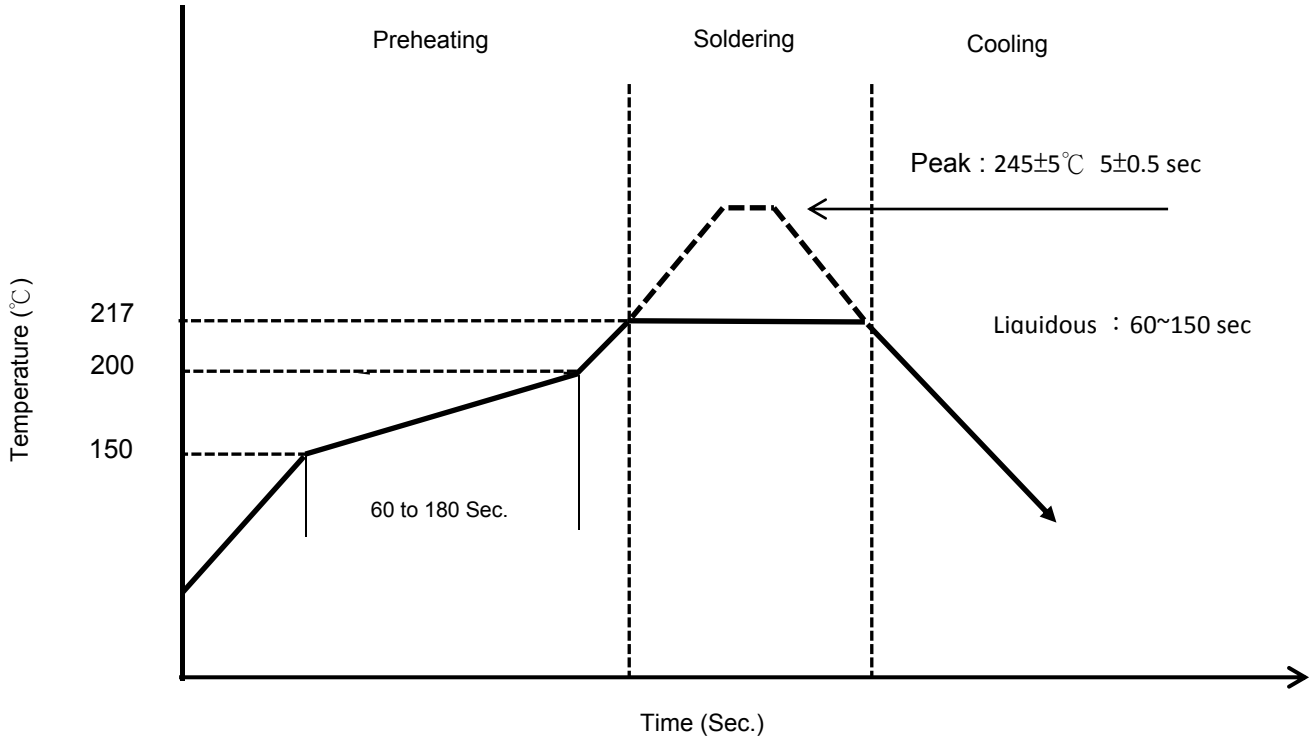
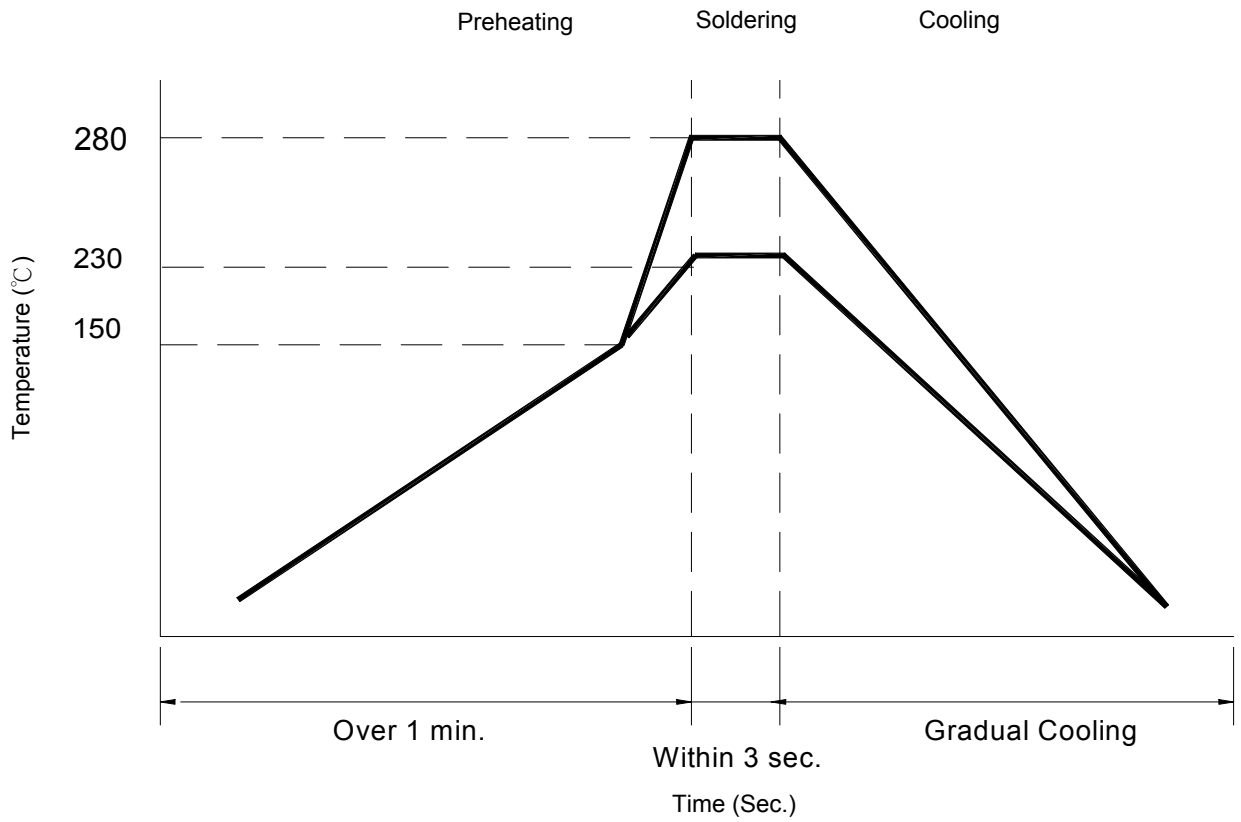
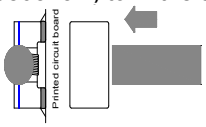


Figure 2. Hand Soldering



Reliability and Testing Conditions

Item	Specification	Conditions
Operating temperature range	-40℃ ~ +125℃ (Including self-temperature rise)	
Storage temperature and humidity range	-40°C ~ +85°C , 70% RH Max	
Solderability	More than 90% of the terminal electrode should be covered with solder.	- Preheat: 150 ℃, 60 sec - Solder: Sn96.5%-Ag3%-Cu0.5% - Temperature: 245±5℃ - Flux for lead free: Rosin 9.5% - Dip time: 4±1 sec - Depth: completely cover the termination
Resistance to Soldering Heat	Impedance within ±30% of initial value. No disconnection or short circuit. The appearance shall not break.	- Solder technique simulation: SMD - Temperature (°C): 250 ± 5 (solder temp) - Time (s): 10 ± 1 - Temperature ramp / immersion and emersion rate: 25 mm/s ± 6 mm/s - Number of heat cycles: 1
Resistance to High Temperature	Impedance within ±30% of initial value. No disconnection or short circuit. The appearance shall not break.	500 hrs. at 85°C±2°C Unpowered. Measurement at 24±4 hours after test conclusion.
Resistance to Low Temperature	Impedance within ±30% of initial value. No disconnection or short circuit. The appearance shall not break.	500 hrs. at -40°C±2°C. Unpowered. Measurement at 24±4 hours after test conclusion.
Resistance to Humidity	Impedance within ±30% of initial value. No disconnection or short circuit. The appearance shall not break.	After 500 hours in 40±2°C and 90 to 95% humidity , and 24 hours drying under normal condition.
Thermal shock	Impedance within ±30% of initial value. No disconnection or short circuit. The appearance shall not break.	After 30 cycles of following condition. Step / Temperature (℃) / Times (min.) 1 / -40±2°C / 30 2 / Room Temperature / Within 3 3 / 85±3°C / 30 4 / Room Temperature / Within 3
Vibration Test	Impedance within ±30% of initial value and appearance shall not break.	After vibration for 1hour, In each of three orientations at sweep vibration (10~55~10Hz) with 1.52mm P-P Amplitudes.
Terminal strength	The terminal electrode and the ferrite must not be damaged	Solder a chip to test substrate, and then laterally apply a force (>0805:10N , <=0805: 5N) to in the arrow direction, Duration :5s 
Drop Test	Impedance within ±30% of initial value. The appearance shall not break.	Drop 3 times on a concrete floor from a height of 75cm by inimum packing