SCOPE：

This specification applies to the Pb Free Wire Wound Ferrite Chip Inductors for MWNC-322522-SERIES

PRODUCT INDENTIFICATION

MWNC - 322522 - 1R0 J

① ② ③ ④

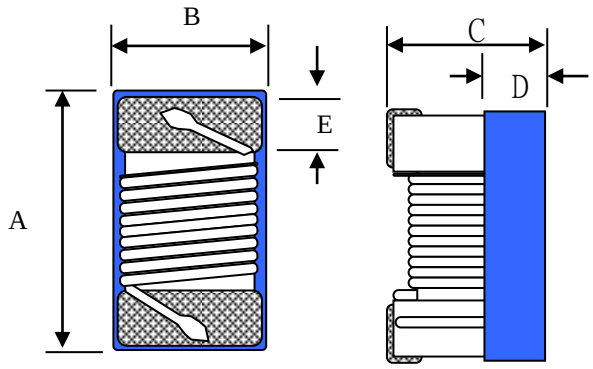
① Product Code

② Dimensions Code

③ Inductance Code

④ Tolerance Code

(1) SHAPES AND DIMENSIONS(mm)



A: 3.70 Max.

B: 2.90 Max.

C: 2.60 Max.

D: 0.70 Typ.

E: 0.60 Typ.

(2) ELECTRICAL SPECIFICATIONS

SEE TABLE 1

TEST INSTRUMENTS

L,Q : HP 4291B IMPEDANCE ANALYZER (or equivalent)

SRF : ENA E5071B NETWORK ANALYZER (or equivalent)

RDC : CHROMA MODEL 16502 MILLIOHMMETER (or equivalent)

(3) CHARACTERISTICS

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

(Including self temp. rise)

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

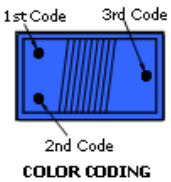
TABLE 1

MAGLAYERS PT/NO.	Inductance L(μH)	Percent Tolerance	Quality Min.	L,Q Freq. (MHz)	SRF (MHz)Typ.	DCR (Ω) ±30%	IDC (mA)	Color Coding		
								1st	2nd	3rd
MWNC-322522-R47☐	0.47	J,K	40	25.2	450	0.07	1800	YEL	VIO	BRN
MWNC-322522-1R0☐	1.0	J,K	20	7.96	100	0.08	1500	BRN	BLK	RED
MWNC-322522-1R2☐	1.2	J,K	20	7.96	90	0.12	1400	BRN	RED	RED
MWNC-322522-1R5☐	1.5	J,K	20	7.96	80	0.13	1125	BRN	GRN	RED
MWNC-322522-1R8☐	1.8	J,K	20	7.96	70	0.13	970	BRN	GRY	RED
MWNC-322522-2R2☐	2.2	J,K	20	7.96	68	0.13	970	RED	RED	RED
MWNC-322522-2R7☐	2.7	J,K	20	7.96	62	0.15	900	RED	VIO	RED
MWNC-322522-3R3☐	3.3	J,K	20	7.96	54	0.16	837	ORN	ORN	RED
MWNC-322522-4R7☐	4.7	J,K	20	7.96	43	0.23	675	YEL	VIO	RED
MWNC-322522-5R6☐	5.6	J,K	20	7.96	36	0.26	620	GRN	BLU	RED
MWNC-322522-6R8☐	6.8	J,K	20	7.96	33	0.27	600	BLU	GRY	RED
MWNC-322522-8R2☐	8.2	J,K	20	7.96	30	0.32	580	GRY	RED	RED
MWNC-322522-100☐	10	J,K	15	2.52	28	0.36	520	BRN	BLK	ORN
MWNC-322522-120☐	12	J,K	15	2.52	25	0.50	500	BRN	RED	ORN
MWNC-322522-150☐	15	J,K	15	2.52	19	0.56	480	BRN	GRN	ORN
MWNC-322522-180☐	18	J,K	15	2.52	17	0.67	330	BRN	GRY	ORN
MWNC-322522-220☐	22	J,K	15	2.52	16	0.77	310	RED	RED	ORN
MWNC-322522-270☐	27	J,K	15	2.52	13	1.00	280	RED	VIO	ORN
MWNC-322522-330☐	33	J,K	15	2.52	12	1.10	270	ORN	ORN	ORN
MWNC-322522-390☐	39	J,K	15	2.52	11	1.40	220	ORN	WHT	ORN
MWNC-322522-470☐	47	J,K	15	2.52	10	1.64	210	YEL	VIO	ORN
MWNC-322522-560☐	56	J,K	15	2.52	9.0	2.49	189	GRN	BLU	ORN
MWNC-322522-680☐	68	J,K	15	2.52	9.0	2.80	189	BLU	GRY	ORN
MWNC-322522-820☐	82	J,K	15	2.52	6.0	3.00	145	GRY	RED	ORN
MWNC-322522-101☐	100	J,K	15	0.796	6.0	3.70	145	BRN	BLK	YEL
MWNC-322522-151☐	150	J,K	15	0.796	5.0	6.10	120	BRN	GRN	YEL
MWNC-322522-181☐	180	J,K	15	0.796	4.0	8.00	105	BRN	GRY	YEL
MWNC-322522-221☐	220	J,K	15	0.796	4.0	8.40	100	RED	RED	YEL
MWNC-322522-331☐	330	J,K	15	0.796	3.5	12.30	80	ORN	ORN	YEL
MWNC-322522-391☐	390	J,K	15	0.796	2.8	17.60	75	ORN	WHT	YEL
MWNC-322522-471☐	470	J,K	15	0.796	2.8	22.00	75	YEL	VIO	YEL
MWNC-322522-561☐	560	J,K	15	0.796	2.5	23.00	65	GRN	BLU	YEL
MWNC-322522-681☐	680	J,K	15	0.796	2.0	28.00	65	BLU	GRY	YEL

※ 1. ☐ specify the inductance tolerance,J(±5%),K(±10%)

※ 2. IDC:Applied the current to coils, the inductance shall be less than 10% initial value.

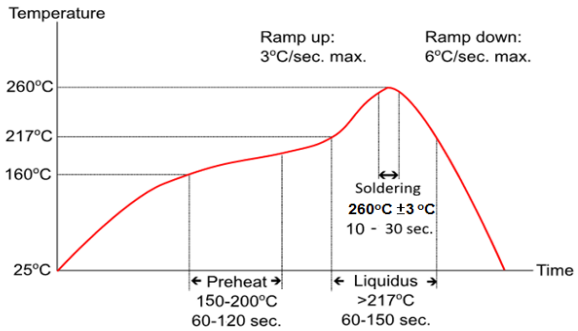
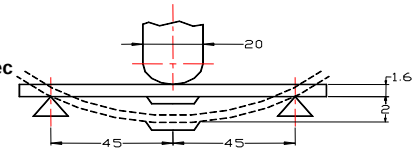
3. Color coding is not necessarily same position,
and Color coding non-directional printing.



COLOR CODING

(4) RELIABILITY TEST METHOD

MECHANICAL

TEST ITEM	SPECIFICATION	TEST DETAILS
Solder ability	The electrodes shall be at least 90% covered with new solder coating	Refer to J-STD-002 Pre-heating: 150℃, 1min Solder Composition: Sn/Ag3.0/Cu0.5(Pb-Free) Solder Temperature: 245±5℃(Pb-Free) Immersion Time: 4±1sec
Resistance to Soldering heat (reflow soldering)	There shall be no damage or problems. Inductance change shall be within ±10%. Q change:within±30% of initial value	Refer to MIL-STD-202 Method 210 Temperature profile of reflow soldering 
Terminal strength	The terminal electrode and the ferrite must not damaged.	Refer to AEC-Q200-006 Test device shall be soldered on the substrate Force 0.5lbs for 60±1 seconds for 0201 series Force 1lbs for 60±1 seconds for 0402 series Force 2lbs for 60±1 seconds for 0603 series Force 1.8Kg for 60±1 seconds for the other series.
Board Flex	The terminal electrode and the ferrite must not damaged.	Refer to AEC-Q200-005 Test device shall be soldered on the substrate Substrate Dimension: 100x40x1.6mm Deflection: 2.0mm Keeping Time: 60sec 
High temperature resistance (Storage)	Appearance:No damage (for microscope of CASTOR MZ-420X)Inductance change shall Inductance change shall be within ±10%. Q change:within±30% of initial value	Refer to MIL-STD-202 Method 108 Temperature: 125±3℃ / Relative Humidity: 0% Time: 100hrs Measured after exposure in the room condition for 24hrs
Biased Humidity	Appearance:No damage (for microscope of CASTOR MZ-420X)Inductance change shall Inductance change shall be within ±10%. Q change:within±30% of initial value	Refer to MIL-STD-202 Method 103 Temperature: 85±2℃ Relative Humidity:85% / Time: 100hrs Measured after exposure in the room condition for 24hrs

(4) RELIABILITY TEST METHOD

MECHANICAL

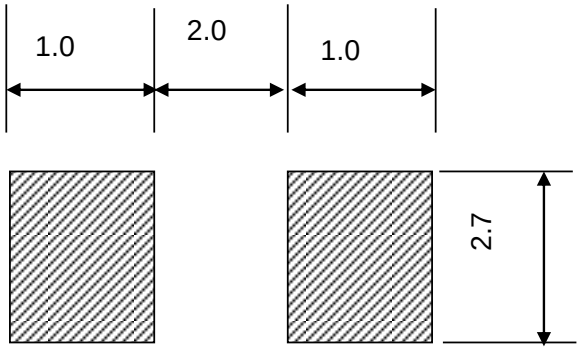
TEST ITEM	SPECIFICATION	TEST DETAILS
Thermal shock	Appearance:No damage (for microscope of CASTOR MZ-420X)Inductance change shall Inductance change shall be within ±10%. Q change:within±30% of initial value	Refer to JESD Method JA-104 Total cycles: 100 cycles Temperature Cycling Test Conditions : -40 to +125 ℃ -40 ℃ Soak Mode Condition : 30 minutes 125 ℃ Soak Mode Condition : 30 minutes Measured after exposure in the room condition for 24hrs
Low temperature storage	There shall be no damage or problems. Inductance change shall be within ±10%. Q change:within±30% of initial value	After the samples shall be soldered onto the test circuit board,the test shall be done. Measurement : After placing for 24 hours min. Temperature : -40±2℃ Testing time : 100 hours
Vibration	There shall be no damage or problems. Inductance change shall be within ±10%. Q change:within±30% of initial value	Refer MIL-STD-202 Method 204 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
Resistance to Solvent	There must be no change in appearance or obliteration of marking	Refer to MIL-STD-202 Method 215 Inductors must withstand 6 mimutes of alcohol or water.
Operational Life	No apparent damage Inductance change shall be within ±10%.	Refer to MIL-STD-202 Method 108 Temperature: 125±3℃ Applied Current : Rated Current Time: 100hrs Measured after exposure in the room condition for 24hrs

(5) RECOMMENDED SOLDERING CONDITIONS

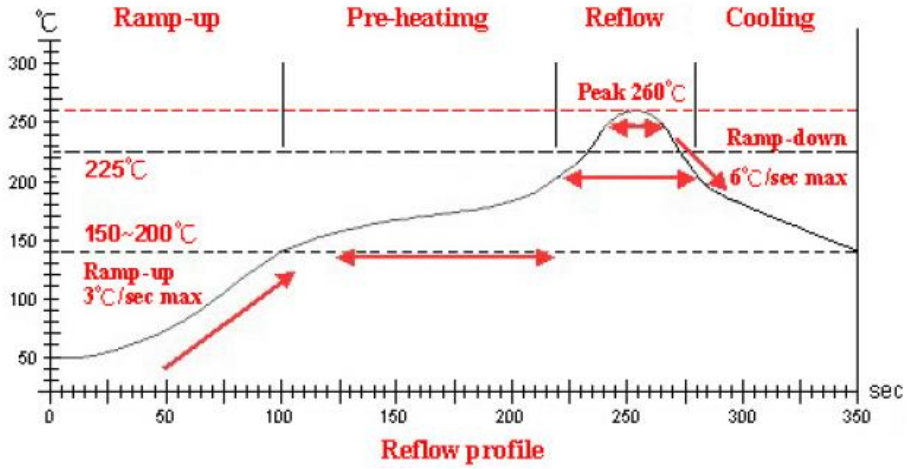
(Please use this product by reflow soldering)

(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.	_

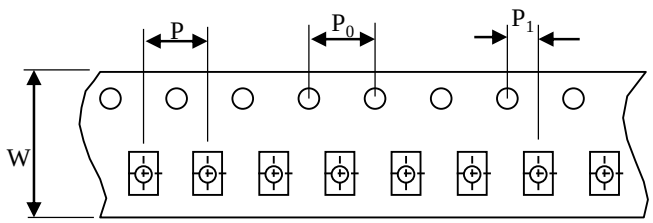
NOTE:

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

2. Nitrogen adopted is recommended while in re-flow

(6) PACKAGING

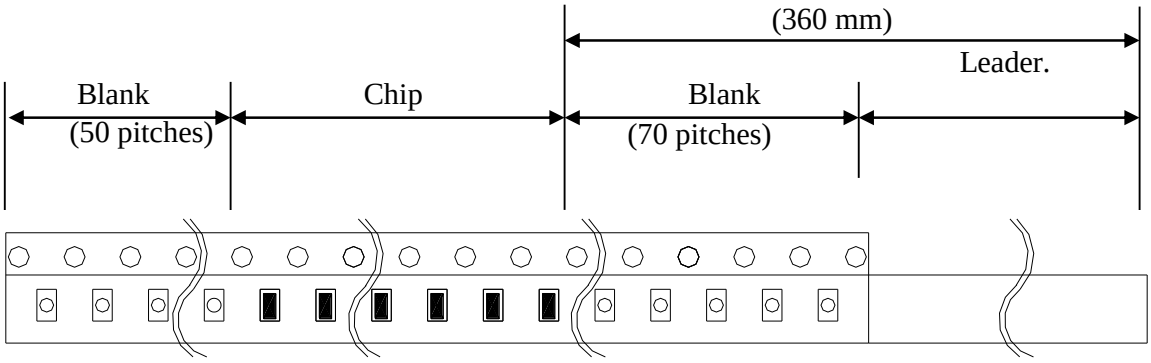
(6)-1 CARRIER TAPE DIMENSIONS (mm)



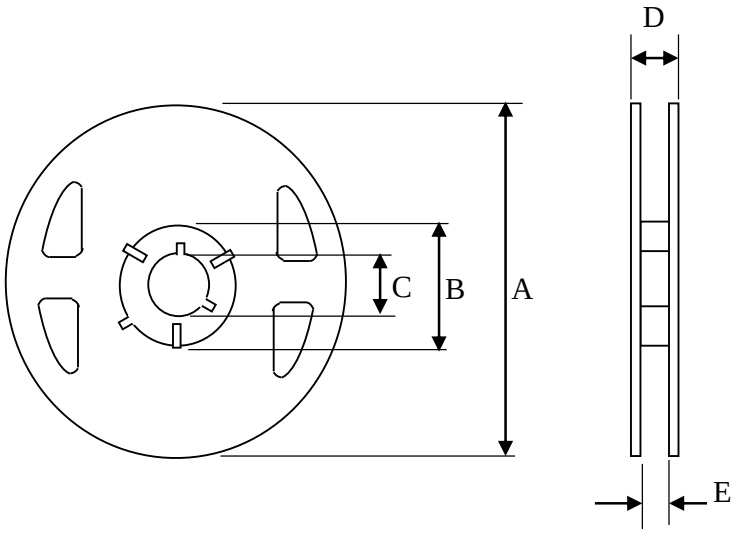
W : 12.0 mm
P : 4.0 mm
P0 : 4.0 mm
P1 : 2.0 mm

(6)-2 TAPING DIMENSIONS (mm)

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



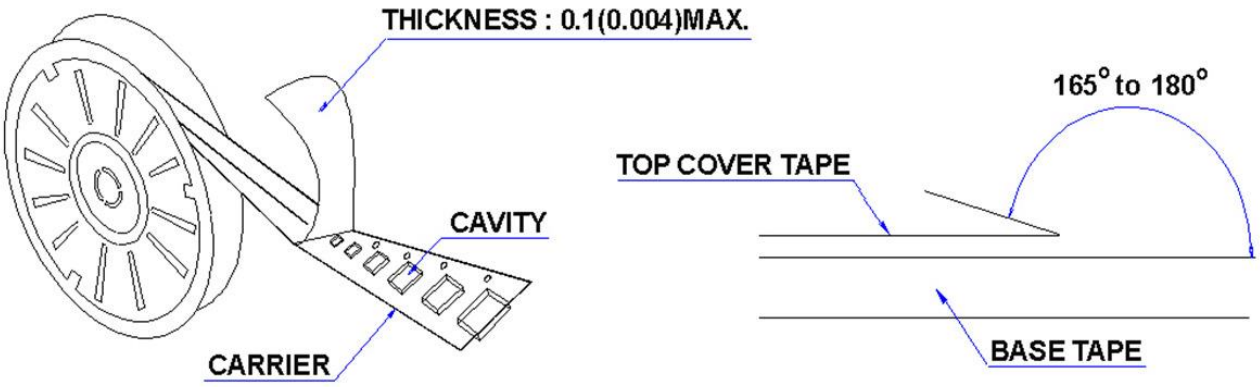
(6)-3 REEL DIMENSIONS



A : 178 mm
B : 60.0 mm
C : 13.0 mm
D : 12.0 mm
E : 9.0 mm

(6)-4 COVER TAPE PEEL STRENGTH

The force for tearing off cover tape is 10 to 100 grams in the arrow direction



(6)-5 QUANTITY

2000 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.