SCOPE：

This specification applies to the Pb Free Ceramic Chip Inductors

for MWCS-161008-SERIES

PRODUCT INDENTIFICATION

MWCS - 161008 - 30N J

① ② ③ ④

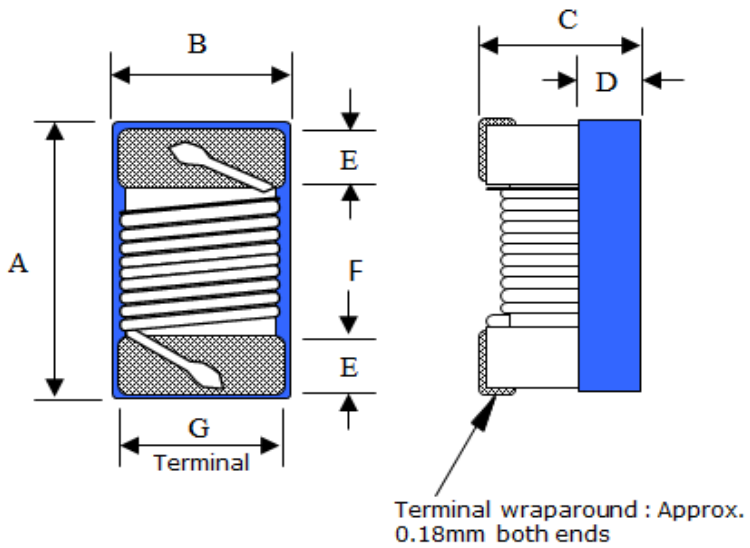
① Product Code

② Dimensions Code

③ Inductance Code

④ Tolerance Code

(1) SHAPES AND DIMENSIONS(mm)



A:	1.60+0.2/ -0.1	Max.
B:	1.02±0.1	Max.
C:	0.82+0.2/ -0.1	Max.
D:	0.51 Typ.	Typ.
E:	0.33 Typ.	Typ.
F:	0.86 Typ.	Typ.
G:	0.76 Typ.	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℃

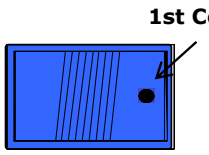
TABLE 1

MAGLAYERS PT/NO.	Inductance L(nH)	Percent Tolerance	L/Q Freq. (MHz)	Quality Min.	SRF (MHz)Min.	DCR (Ω) Max.	Irms (mA) Max.	Color Coding
MWCS-161008-1N6□	1.6	J,K	250/250	24	12500	0.030	700	Red
MWCS-161008-1N8□	1.8	J,K	250/250	16	12500	0.045	700	Black
MWCS-161008-2N2□	2.2	J,K	250/250	13	12500	0.250	700	Yellow
MWCS-161008-3N3□	3.3	J,K	250/250	35	5900	0.045	700	Blue
MWCS-161008-3N6□	3.6	G,J,K	250/250	22	5900	0.063	700	Red
MWCS-161008-3N9□	3.9	G,J,K	250/250	22	6900	0.080	700	Brown
MWCS-161008-4N3□	4.3	G,J,K	250/250	22	5900	0.063	700	Orange
MWCS-161008-4N7□	4.7	G,J,K	250/250	20	5800	0.116	700	Violet
MWCS-161008-5N1□	5.1	G,J,K	250/250	20	5700	0.140	700	Green
MWCS-161008-5N6□	5.6	G,J,K	250/250	20	5800	0.170	700	Yellow
MWCS-161008-6N3□	6.3	G,J,K	250/250	20	5700	0.140	700	White
MWCS-161008-6N8□	6.8	G,J,K	250/250	27	5800	0.110	700	Red
MWCS-161008-7N5□	7.5	G,J,K	250/250	28	4800	0.106	700	Brown
MWCS-161008-8N2□	8.2	G,J,K	250/250	28	4700	0.109	700	White
MWCS-161008-8N7□	8.7	G,J,K	250/250	28	4600	0.109	700	Yellow
MWCS-161008-9N1□	9.1	G,J,K	250/250	28	4800	0.120	700	Violet
MWCS-161008-9N5□	9.5	G,J,K	250/250	28	5400	0.135	700	Blue
MWCS-161008-10N□	10	G,J,K	250/250	31	4800	0.130	700	Orange
MWCS-161008-11N□	11	G,J,K	250/250	33	4000	0.086	700	Gray
MWCS-161008-12N□	12	G,J,K	250/250	35	4000	0.130	700	Yellow
MWCS-161008-13N□	13	G,J,K	250/250	30	4000	0.160	700	Black
MWCS-161008-15N□	15	G,J,K	250/250	35	4000	0.170	700	Green
MWCS-161008-16N□	16	G,J,K	250/250	34	3300	0.104	700	White
MWCS-161008-18N□	18	G,J,K	250/250	35	3100	0.170	700	Blue
MWCS-161008-20N□	20	G,J,K	250/250	38	3000	0.190	700	Red

※ 1. Please specify the inductance tolerance, G(±2%),J(±5%),K(±10%)

2. Irms for a 15°C rise above 25°C ambient.

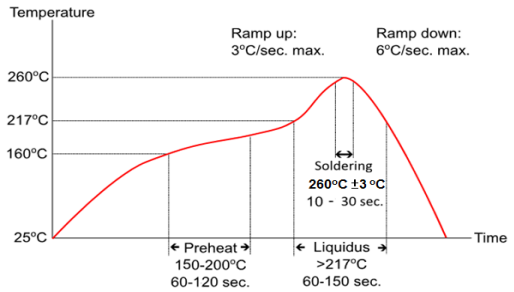
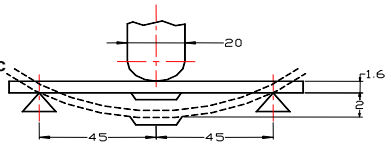
3. Color coding is not necessarily same position,
and Color coding non-directional printing.



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  The specimen shall be passed through the reflow oven with the condition shown in the above profile for 1 time. The specimen shall be stored at standard atmospheric conditions for 1 hour, after which the measurement shall be made.
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

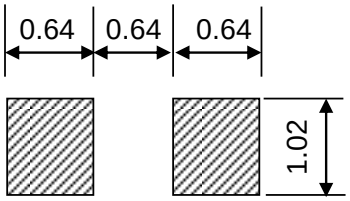
TEST ITEM	SPECIFICATION	TEST DETAILS
Thermal shock	Appearance:No damage (for microscope of CASTOR MZ-420X)Inductance change shall Inductance change shall be within ±10%. Q change:within±30% of initial value	Refer to JESD Method JA-104 Total cycles: 100 cycles Temperature Cycling Test Conditions : -40 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

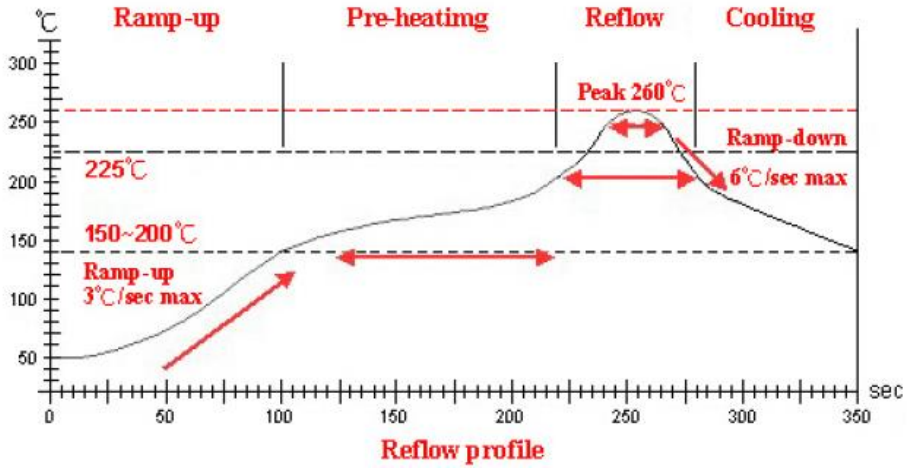
(Please use this product by reflow soldering)

(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.	_

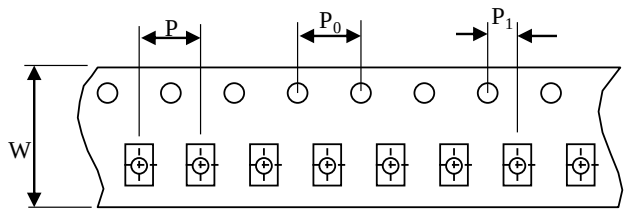
NOTE:

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 : 8.0 mm

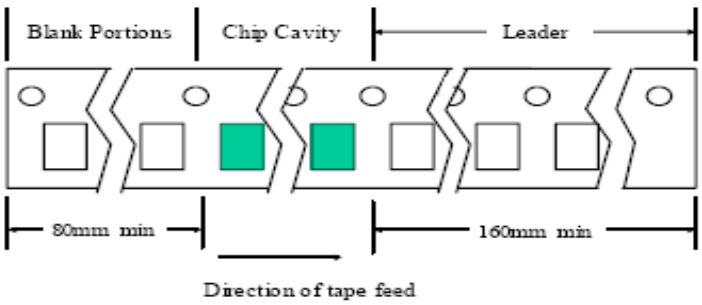
P : 4.0 mm

P0 : 4.0 mm

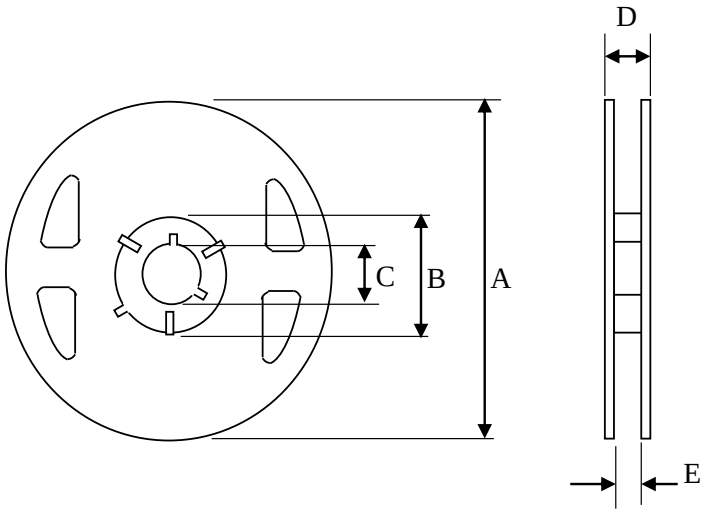
P1 : 2.0 mm

(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

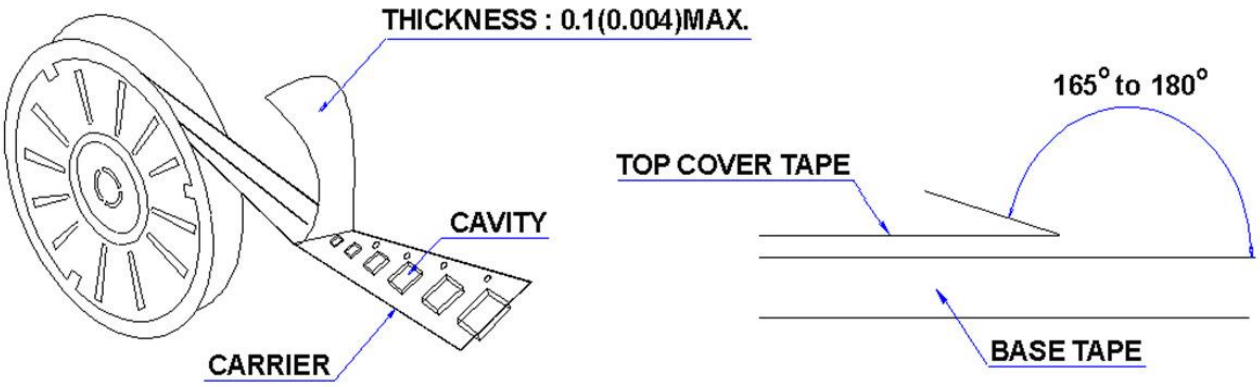
C : 13.0 mm

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

4000 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.