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SPC-F005.DWG

REVISIONS

DOC. NO. SPC-F005 • Effective: 7/8/02 • DCP No: 1398

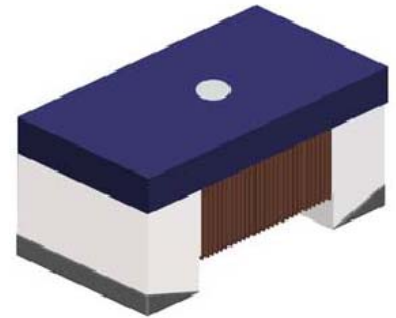
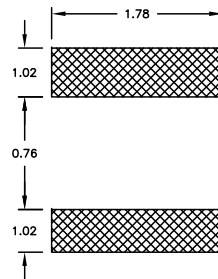
DCP #	REV	DESCRIPTION	DRAWN	DATE	CHECKD	DATE	APPRVD	DATE
2048	A	RELEASED	JN	05/21/09	JWM	05/21/09	JWM	05/21/09



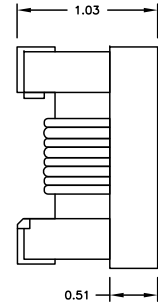
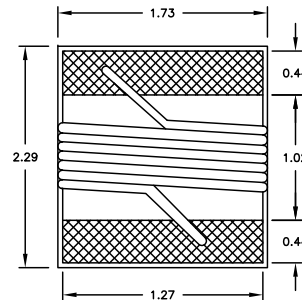
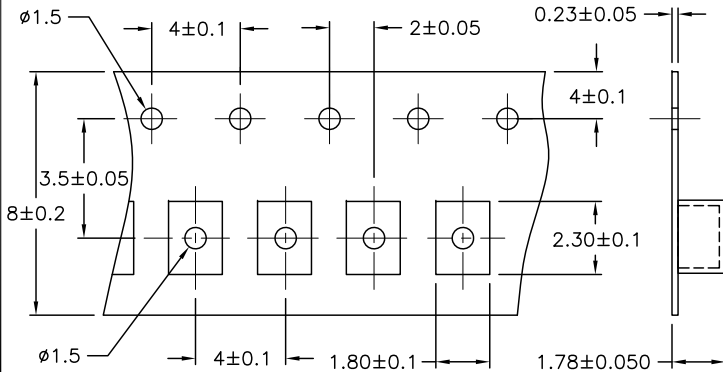
Features:

- Wire wound ceramic construction provide high SRF
- Ultra-compact inductors provide exceptional Q values
- Low profile, high current are available
- Miniature SMD chip inductor for fully automated assembly
- Outstanding endurance from Pull-up force, mechanical shock and pressure
- tighter tolerance down to  $\pm 2\%$

Recommended Pad Layout



Tape Dimension



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TOLERANCES: UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE FOR REFERENCE PURPOSES ONLY.

DRAWN BY:	DATE:
Jason Nash	05/21/09
CHECKED BY:	DATE:
JWM	05/21/09
APPROVED BY:	DATE:
JWM	05/21/09

DRAWING TITLE:			
Wire Wound Chip Inductor - Case size 0805 (Low Profile)			
SIZE	DWG. NO.	ELECTRONIC FILE	REV
A	Ta-1129	Ta-1129.DWG	A
SCALE: NTS	U.O.M.: Millimeters	SHEET: 1 OF 3	



Mfr PN	Inductance	Inductance Tolerance	DC Resistance Max	DC Current Rating	Self Resonant Frequency	Package	Q Factor	Test Frequency
MCWL05JTL10N	10nH	± 5%	0.08ohm	800mA	3.30MHz	805	Q Factor:55	250MHz
MCWL05JTL15N	15nH	± 5%	0.10ohm	800mA	2.95MHz	805	Q Factor:50	250MHz
MCWL05JTL22N	22nH	± 5%	0.15ohm	800mA	2.90MHz	805	Q Factor:50	250MHz
MCWL05JTL33N	33nH	± 5%	0.28ohm	600mA	2.35MHz	805	Q Factor:50	250MHz
MCWL05JTL47N	47nH	± 5%	0.39ohm	600mA	2.00MHz	805	Q Factor:50	200MHz
MCWL05JTL68N	68nH	± 5%	0.40ohm	500mA	1.50MHz	805	Q Factor:50	200MHz
MCWL05JTLR10	100nH	± 5%	0.64ohm	400mA	1.20MHz	805	Q Factor:50	150MHz

### Mechanical Performance

No.	Item	Specification	Test Methods
1	Vibration Test	Appearance: No damage L change: within ±5% Q change: within ±10%	Test device shall be soldered on the substrate Oscillation Frequency: 10 to 55 to 10Hz for 1min Amplitude: 1.5mm Time: 2hrs for each axis (X, Y & Z), total 6hrs
2	Resistance to Soldering-Heat	Solder Temperature: 270±5°C Immersion Time: 10±2sec	
3	Component Adhesion (Push Test)	1 lbs. For 0402 2 lbs. For 0603 3 lbs. For the rest	The device should be soldered (260±5°C for 10 seconds) to a tinned copper sub. rate. A dynamiter force gauge should be applied to the side of the component. The device must withstand a minimum force of 2 or 4 pounds without a failure of adhesion on termination
4	Drop Test	No damage	Dropping chip by each side and each corner. Drop 10 times in total Drop height: 100cm Drop weight: 125g
5	Solderability Test	90% covered with solder.	Inductor shall be dipped in a melted solder bath at 245±5°C for 3 seconds.
6	Resistance to Solvent Test	No damage on appearance and marking.	MIL-STD202F, Method 215D

### Electrical Performance Test

No.	Item	Specification	Test Method
1	Inductance		HP4291B
2	Q		HP4291B
3	SRF	Refer to standard electrical characteristic spec.	HP8753D
4	DC Resistance RDC		Micro-Ohm meter (Gom-801G)
5	Rated Current IDC		Applied the current to coils, The inductance change should be less than 10% to initial value
6	Over Load Test	Inductors shall have no evidence of electrical and mechanical damage	Applied 2 times of rated allowed DC current to inductor for a period of 5 minute
7	Withstanding Voltage Test	Inductors shall be no evidence of electrical and mechanical damage.	AC voltage of 500 VAC applied between inductors terminal and case for 1 minute.
8	Insulation Resistance Test	1000M ohm min	100 VDC applied between inductor terminal and case

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SIZE DWG. NO.

A Ta-1129

ELECTRONIC FILE

Ta-1129.DWG

REV

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SCALE: NTS

U.O.M.: INCHES [mm]

SHEET: 2 OF 3

### Climatic Test

No.	Item	Specification	Test Method														
1	Temperature Characteristic	Appearance: No damage L change: within $\pm 10\%$ Q change: within $\pm 20\%$	-40°C +125°C														
2	Humidity Test		Temperature: 40 $\pm$ 2°C Relative Humidity: 90~95% Time: 96hrs $\pm$ 2hrs Measured after exposure in the room condition for 2hrs														
3	Low Temperature Storage Test		Temperature: -40 $\pm$ 2°C Time: 96 $\pm$ 2hrs Inductors are tested after 1 hour at room temperature														
4	Thermal Shock Test		One cycle: <table border="1"> <thead> <tr> <th>Step</th> <th>Temperature</th> <th>Time (min)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-25<math>\pm</math>3</td> <td>30</td> </tr> <tr> <td>2</td> <td>25<math>\pm</math>2</td> <td>15</td> </tr> <tr> <td>3</td> <td>125<math>\pm</math>3</td> <td>30</td> </tr> <tr> <td>4</td> <td>25<math>\pm</math>2</td> <td>15</td> </tr> </tbody> </table> Total: 5 cycles	Step	Temperature	Time (min)	1	-25 $\pm$ 3	30	2	25 $\pm$ 2	15	3	125 $\pm$ 3	30	4	25 $\pm$ 2
Step	Temperature	Time (min)															
1	-25 $\pm$ 3	30															
2	25 $\pm$ 2	15															
3	125 $\pm$ 3	30															
4	25 $\pm$ 2	15															
5	High Temperature Storage Test	There should be no evidence of short of open circuit.	Temperature: 125 $\pm$ 2 Time: 96 $\pm$ 2hrs Measured after exposure in the room condition for 1hr														
6	High Temperature Load Life Test		Temperature: 85 $\pm$ 2 Time: 1000 $\pm$ 12hrs Load: Allowed DC current														
7	Humidity Load Life		Temperature: 40 $\pm$ 2C Relative Humidity: 90~95% Time: 1000 $\pm$ 12hrs Load: Allowed DC current														

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