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SPC-F005.DWG

REVISIONS

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

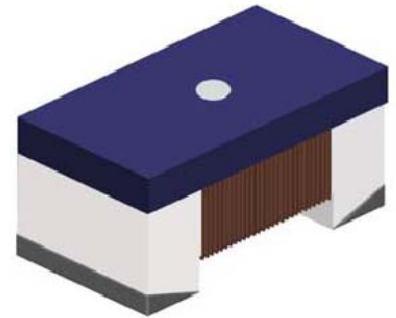
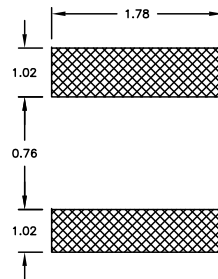
DCP #	REV	DESCRIPTION	DRAWN	DATE	CHECKD	DATE	APPRVD	DATE
2048	A	RELEASED	JN	05/21/09	JWM	05/21/09	JWM	05/21/09



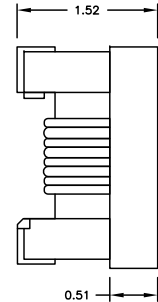
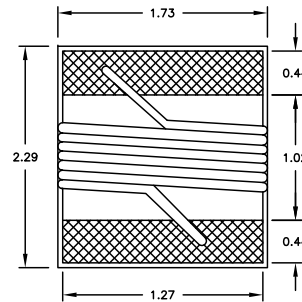
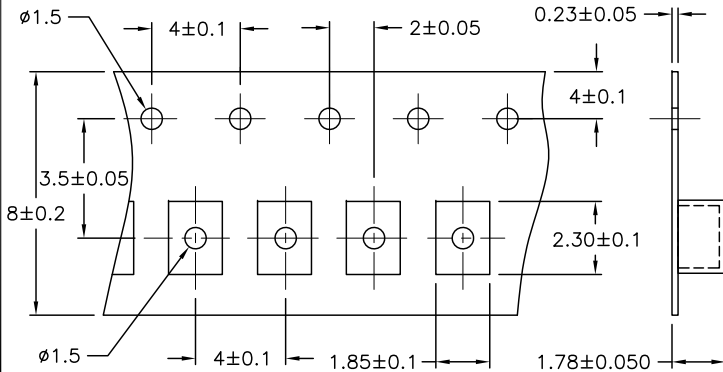
Features:

- 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 autmated assembly
- Outstanding endurance from Pull-up force, mechanical shock and pressure
- tighter tolerance down to $\pm 2\%$

Recommended Pad Layout



Tape Dimension



DISCLAIMER: ALL STATEMENTS AND TECHNICAL INFORMATION CONTAINED HEREIN ARE BASED UPON INFORMATION AND/OR TESTS WE BELIEVE TO BE ACCURATE AND RELIABLE. SINCE CONDITIONS OF USE ARE BEYOND OUR CONTROL, THE USER SHALL DETERMINE THE SUITABILITY OF THE PRODUCT FOR THE INTENDED USE AND ASSUME ALL RISK AND LIABILITY WHATSOEVER IN CONNECTION THEREWITH.

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			
SIZE	DWG. NO.	ELECTRONIC FILE	REV
A	Ta-1118	Ta-1118.DWG	A
SCALE:	U.O.M.:	SHEET:	
NTS	Millimeters	1 OF 3	



Mfr PN	Inductance	Inductance Tolerance	DC Resistance Max	DC Current Rating	Self Resonant Frequency	Package	Q Factor	Test Frequency
MCWL05JT10N	10nH	± 5%	0.10ohm	600mA	4.200MHz	805	Q Factor:60	250MHz
MCWL05JT12N	12nH	± 5%	0.15ohm	600mA	4.000MHz	805	Q Factor:50	250MHz
MCWL05JT15N	15nH	± 5%	0.17ohm	600mA	3.400MHz	805	Q Factor:50	250MHz
MCWL05JT18N	18nH	± 5%	0.20ohm	600mA	3.300MHz	805	Q Factor:50	250MHz
MCWL05JT22N	22nH	± 5%	0.22ohm	500mA	2.600MHz	805	Q Factor:55	250MHz
MCWL05JT27N	27nH	± 5%	0.25ohm	500mA	2.500MHz	805	Q Factor:55	250MHz
MCWL05JT33N	33nH	± 5%	0.27ohm	500mA	2.050MHz	805	Q Factor:60	250MHz
MCWL05JT39N	39nH	± 5%	0.29ohm	500mA	2.000MHz	805	Q Factor:60	250MHz
MCWL05JT47N	47nH	± 5%	0.31ohm	500mA	1.650MHz	805	Q Factor:60	200MHz
MCWL05JT56N	56nH	± 5%	0.34ohm	500mA	1.550MHz	805	Q Factor:60	200MHz
MCWL05JT68N	68nH	± 5%	0.38ohm	500mA	1.450MHz	805	Q Factor:60	200MHz
MCWL05JT82N	82nH	± 5%	0.42ohm	400mA	1.300MHz	805	Q Factor:65	150MHz
MCWL05JTR10	100nH	± 5%	0.46ohm	400mA	1.200MHz	805	Q Factor:65	150MHz
MCWL05JTR12	120nH	± 5%	0.51ohm	400mA	1.100MHz	805	Q Factor:50	150MHz
MCWL05JTR15	150nH	± 5%	0.56ohm	400mA	0.920MHz	805	Q Factor:50	100MHz
MCWL05JTR18	180nH	± 5%	0.64ohm	400mA	0.870MHz	805	Q Factor:50	100MHz
MCWL05JTR22	220nH	± 5%	0.70ohm	400mA	0.850MHz	805	Q Factor:50	100MHz
MCWL05JTR27	270nH	± 5%	1.00ohm	350mA	0.650MHz	805	Q Factor:48	100MHz
MCWL05JTR33	330nH	± 5%	1.40ohm	310mA	0.600MHz	805	Q Factor:48	100MHz
MCWL05JTR39	390nH	± 5%	1.50ohm	290mA	0.560MHz	805	Q Factor:48	100MHz
MCWL05JTR47	470nH	± 5%	1.70ohm	250mA	0.375MHz	805	Q Factor:33	50MHz
MCWL05JTR56	560nH	± 5%	1.90ohm	230mA	0.340MHz	805	Q Factor:23	25MHz
MCWL05JTR68	680nH	± 5%	2.20ohm	190mA	0.200MHz	805	Q Factor:23	25MHz
MCWL05JTR82	820nH	± 5%	2.35ohm	180mA	0.200MHz	805	Q Factor:23	25MHz
MCWL05JT1R0	1000nH	± 5%	2.50ohm	170mA	0.100MHz	805	Q Factor:20	25MHz
MCWL05JT1R5	1500nH	± 5%	2.50ohm	170mA	0.100MHz	805	Q Factor:16	7.9MHz
MCWL05JT2R2	2200nH	± 5%	2.70ohm	160mA	0.060MHz	805	Q Factor:16	7.9MHz
MCWL05JT3R3	3300nH	± 5%	4.40ohm	90mA	0.040MHz	805	Q Factor:15	7.9MHz
MCWL05JT4R7	4700nH	± 5%	6.40ohm	90mA	0.040MHz	805	Q Factor:15	7.9MHz

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 lined copper substrate. A dynamometer 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-1118

ELECTRONIC FILE

Ta-1118.DWG

REV

A

SPC-F005.DWG

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

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 ± 2 °C Relative Humidity: 90~95% Time: 96hrs ± 2 hrs Measured after exposure in the room condition for 2hrs														
3	Low Temperature Storage Test		Temperature: -40 ± 2 °C Time: 96 ± 2 hrs 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± 3</td> <td>30</td> </tr> <tr> <td>2</td> <td>25± 2</td> <td>15</td> </tr> <tr> <td>3</td> <td>125± 3</td> <td>30</td> </tr> <tr> <td>4</td> <td>25± 2</td> <td>15</td> </tr> </tbody> </table> Total: 5 cycles	Step	Temperature	Time (min)	1	-25 ± 3	30	2	25 ± 2	15	3	125 ± 3	30	4	25 ± 2
Step	Temperature	Time (min)															
1	-25 ± 3	30															
2	25 ± 2	15															
3	125 ± 3	30															
4	25 ± 2	15															
5	High Temperature Storage Test	There should be no evidence of short of open circuit.	Temperature: 125 ± 2 Time: 96 ± 2 hrs Measured after exposure in the room condition for 1hr														
6	High Temperature Load Life Test		Temperature: 85 ± 2 Time: 1000 ± 12 hrs Load: Allowed DC current														
7	Humidity Load Life		Temperature: 40 ± 2 C Relative Humidity: 90~95% Time: 1000 ± 12 hrs Load: Allowed DC current														

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U.O.M.: INCHES [mm]

SHEET: 3 OF 3