



Wire Wound Chip Inductors

SWI0805CT Series



千如電子集團
ABC ELECTRONICS GROUP.

AOBA Technology (M) Sdn. Bhd.

INTRODUCTION

The SWI series are wire wound chip inductors widely used in the communication applications such as cellular phones, cable modem, ADSL, repeaters, Bluetooth, and other electronic devices. The wire wound inductors advance in higher self resonate frequency, better Q factor, and much more stable performance. Precious tolerance of 2% is available.

FEATURES

- Operating temperature -40 to +125°C for ceramic series.
- Excellent solderability and resistance to soldering heat.
- Suitable for reflow soldering.
- High reliability and easy surface mount assembly.
- Wide range of inductance values are available for flexible needs.

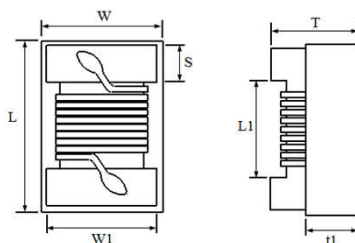
PART NUMBER

SWI 0805 C T 10N J - □□

1 2 3 taping 4 5 6

1 Product Type

2 Chip Dimension



Size (inch) mm	Length (L) (inch) mm	Width (W) (inch) mm	Thickness (T) (inch) mm	Terminal (S) (inch) mm	L1 (Ref.) mm	W1 (Ref.) mm	t1 (Ref.) mm
SWI 0805 2012	(0.080 ± 0.008) 2.00 ± 0.20	(0.050 ± 0.008) 1.25 ± 0.20	(0.048 ± 0.008) 1.20 ± 0.20	(0.016 ± 0.004) 0.40 ± 0.10	1.10	1.15	0.60

3 Material Type C : Ceramic

4 Inductance Value 2N2 = 2.2nH 10N = 10nH R10 = 100nH

5 Tolerance B = ±0.2nH S = ±0.3nH G = ±2% J = ±5% K = ±10%

6 Internal Code

1 Scope

This specification applies to fixed inductors of the following types used in electronic equipment :

*Ceramic Type : For lower inductance with high Q factor at high frequency and stable circuit requirement.

2 Construction

*Configuration & Dimension : Please refer to the attached figures and tables.

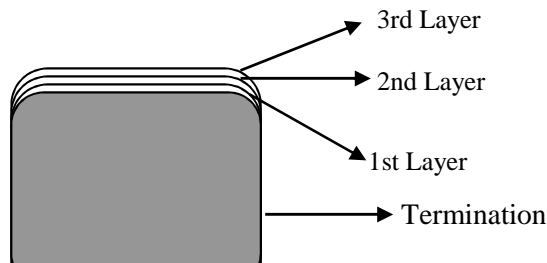
*Terminals : Consist of Ag alloy followed by Nickel, then Au plating for easier soldering.

3 Operating Temperature Range

Operating Temperature Range is the scope of ambient temperature at which the inductor can be operated continuously at rated current.

*Temp. Range : Ceramic material : -40°C ~ +125°C

4 Ingredient of terminals electrode



Ceramic Type :

1st Layer : Ag

2nd Layer : Nickel (Ni)

3rd Layer : Gold (Au)

5 Characteristics

Standard Atmospheric Conditions

Unless otherwise specified, the standard range of atmospheric conditions for making measurements and tests are as follows:

Ambient Temperature : 25°C ± 2°C

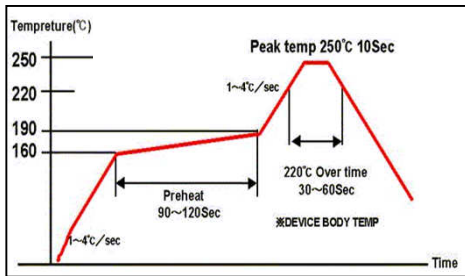
Relative Humidity : 60% to 70%

Air Pressure : 86Kpa to 106Kpa

Temperature Profile

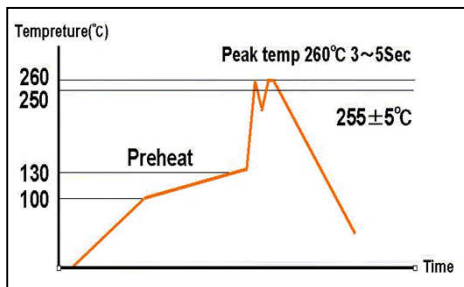
1 Reflow Temperature Profile

(Temperature of the mounted parts surface on the printed circuit board)



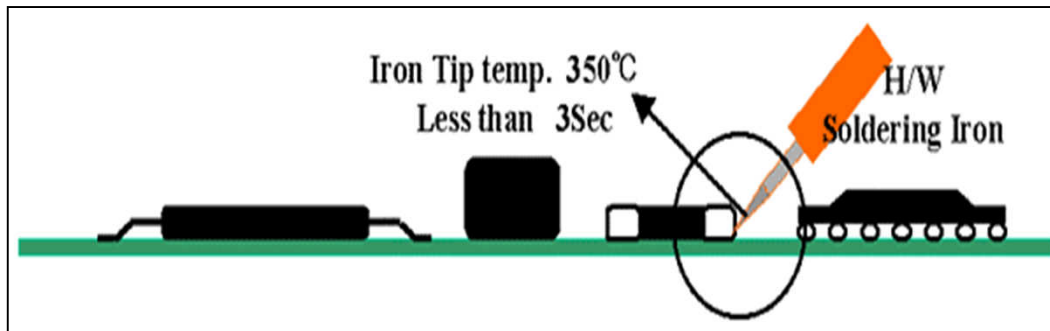
Recommended Peak Temperature : 250°C Max
250°C up /within 10secs
Max. Reflow temperature : 260°C
Gradient of temperature rise : av 1-4°C/sec
Preheat : 160-190°C/within 90-120secs
220°C up /within 30-60secs
Composition of solder Sn-3Ag-0.5Cu

2 Dip Temperature



Solder bathtub temperature : 260°C max
within 5secs.
Preheating temperature : 100~130°C
deposit solder temperature.
Composition of solder Sn-3Ag-0.5Cu

3 Soldering iron tip temperature : 350°C max / within 3 seconds.



SWI0805CT Series

Part No.	Inductance ¹ (nH)	Tolerance	Q ² Min	S.R.F. ³ Min (MHz)	RDC ⁴ Max (Ω)	IDC ⁵ Max (mA)	Marking
SWI0805CT 2N2 □-□□	2.2 @ 250MHz	B, S	50 @ 1000MHz	6000	0.06	800	2N2
SWI0805CT 2N7 □-□□	2.7 @ 250MHz	B, S	35 @ 1000MHz	6000	0.08	800	2N7
SWI0805CT 3N3 □-□□	3.3 @ 250MHz	B, S	60 @ 1000MHz	6000	0.08	800	3N3
SWI0805CT 3N9 □-□□	3.9 @ 250MHz	B, S	60 @ 1000MHz	6000	0.06	600	3N9
SWI0805CT 4N7 □-□□	4.7 @ 250MHz	B, S	60 @ 1000MHz	5800	0.06	600	4N7
SWI0805CT 5N1 □-□□	5.1 @ 250MHz	K, J, B	60 @ 1000MHz	5800	0.08	600	5N1
SWI0805CT 5N6 □-□□	5.6 @ 250MHz	K, J, B	60 @ 1000MHz	5800	0.08	600	5N6
SWI0805CT 6N8 □-□□	6.8 @ 250MHz	K, J, B	60 @ 1000MHz	5500	0.06	600	6N8
SWI0805CT 8N2 □-□□	8.2 @ 250MHz	K, J, B	60 @ 1000MHz	5500	0.06	600	8N2
SWI0805CT 10N □-□□	10 @ 250MHz	K, J, G	60 @ 500MHz	4800	0.08	600	10N
SWI0805CT 12N □-□□	12 @ 250MHz	K, J, G	60 @ 500MHz	4100	0.08	600	12N
SWI0805CT 15N □-□□	15 @ 250MHz	K, J, G	60 @ 500MHz	3600	0.08	600	15N
SWI0805CT 18N □-□□	18 @ 250MHz	K, J, G	60 @ 500MHz	3400	0.08	600	18N
SWI0805CT 22N □-□□	22 @ 250MHz	K, J, G	60 @ 500MHz	3300	0.10	600	22N
SWI0805CT 27N □-□□	27 @ 250MHz	K, J, G	60 @ 500MHz	2600	0.12	600	27N
SWI0805CT 33N □-□□	33 @ 250MHz	K, J, G	60 @ 500MHz	2400	0.15	500	33N
SWI0805CT 39N □-□□	39 @ 250MHz	K, J, G	60 @ 500MHz	2100	0.18	500	39N
SWI0805CT 47N □-□□	47 @ 200MHz	K, J, G	60 @ 500MHz	1700	0.15	500	47N
SWI0805CT 56N □-□□	56 @ 200MHz	K, J, G	60 @ 500MHz	1600	0.25	500	56N
SWI0805CT 68N □-□□	68 @ 200MHz	K, J, G	60 @ 500MHz	1450	0.27	500	68N
SWI0805CT 82N □-□□	82 @ 150MHz	K, J, G	60 @ 500MHz	1350	0.32	500	82N
SWI0805CT R10 □-□□	100 @ 150MHz	K, J, G	60 @ 500MHz	1200	0.43	500	R10
SWI0805CT R12 □-□□	120 @ 150MHz	K, J, G	50 @ 250MHz	1100	0.48	500	R12
SWI0805CT R15 □-□□	150 @ 100MHz	K, J, G	50 @ 250MHz	950	0.56	400	R15
SWI0805CT R18 □-□□	180 @ 100MHz	K, J, G	50 @ 250MHz	900	0.78	400	R18
SWI0805CT R22 □-□□	220 @ 100MHz	K, J, G	50 @ 250MHz	860	1.00	400	R22
SWI0805CT R27 □-□□	270 @ 100MHz	K, J, G	45 @ 250MHz	850	1.46	350	R27
SWI0805CT R33 □-□□	330 @ 100MHz	K, J, G	45 @ 250MHz	800	1.65	300	R33
SWI0805CT R39 □-□□	390 @ 100MHz	K, J, G	45 @ 250MHz	780	2.20	210	R39

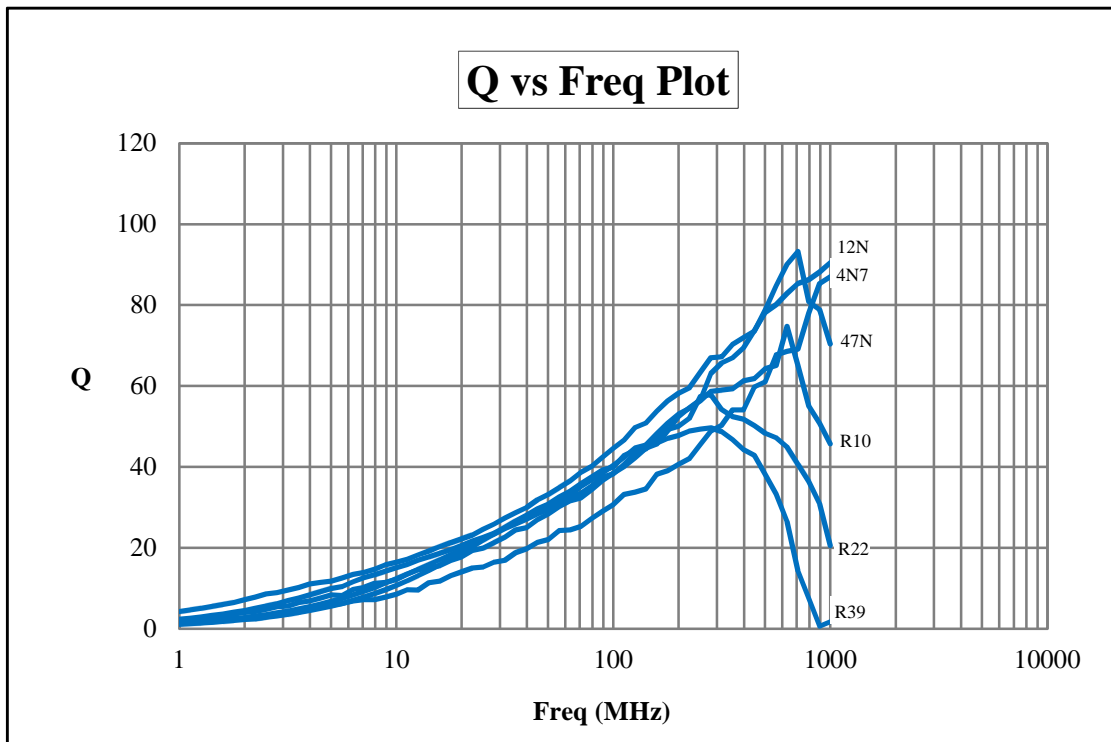
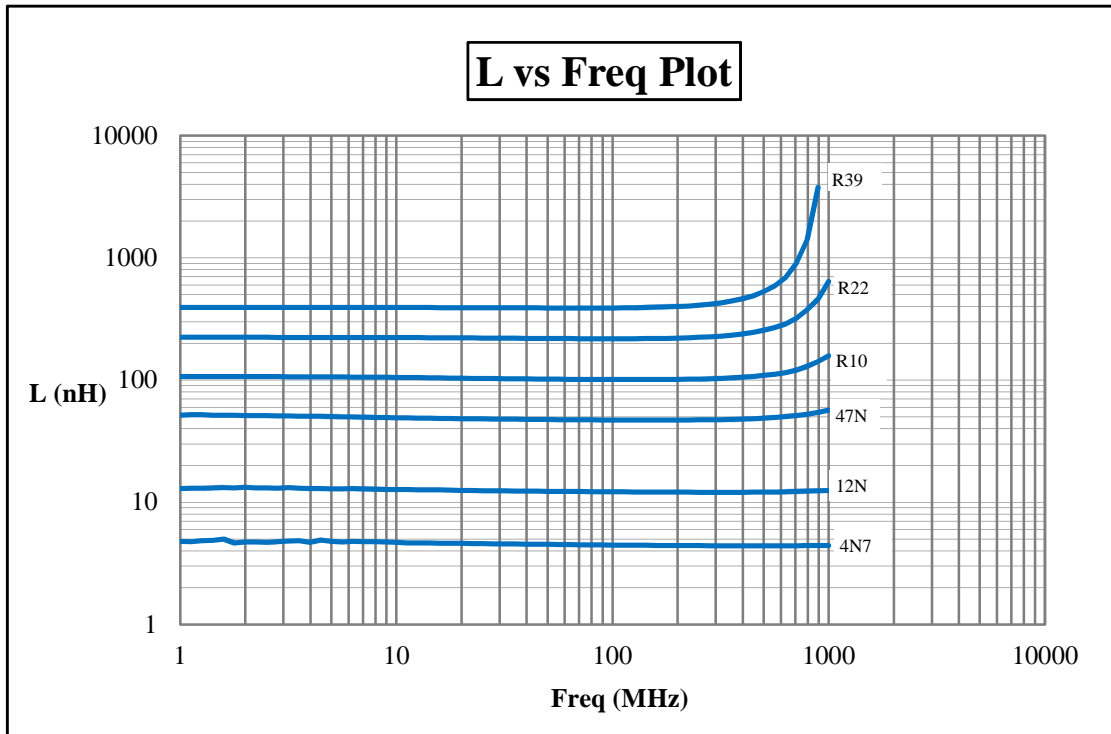
1. Inductance is measured in HP-4287A RF LCR meter with HP-16193 fixture.
2. Q is measured in HP-4287A RF LCR meter with HP-16193 fixture.
3. SRF is measured in ENA E5071B network analyzer or equivalent.

4. RDC is measured in HP-4338B milliohmmeter or equivalent.

5. For 15 °C Rise.

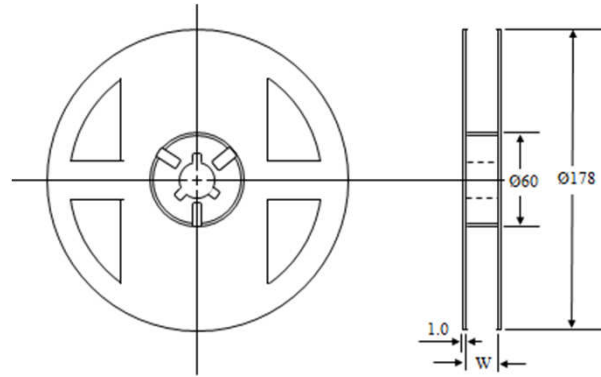
Remarks :

Unit weight = 0.0084g (for ref.)

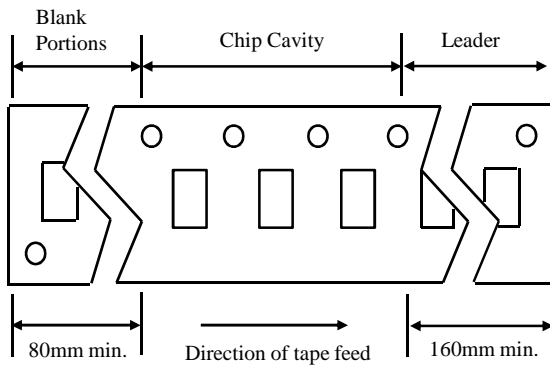
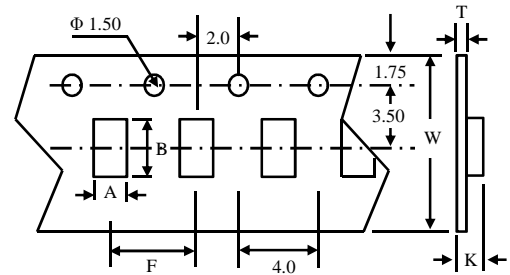


ITEM		CONDITION	SPECIFICATION
Electrical Characteristics	Inductance and Tolerance	Measuring Frequency : As shown in Product Table	Within Specified Tolerance
	Quality Factor	Measuring Temperature : +25°C	
	Insulation Resistance	Measured at 100V DC between inductor terminals and center of case.	1000 mega ohms minimum
	Dielectric Withstanding Voltage	Measured at 500V AC between inductor terminals and center of case for a maximum of 1 minute.	No damage occurs when the test voltage is applied.
	Temperature Coefficient of Inductance (TCL)	Over -40°C to +85°C at frequency specified in Product Table.	+25 to 500 ppm/°C $TCL = \frac{L1 - L2}{L1(T1 - T2)} \times 10^6$ (ppm /°C)
Mechanical Characteristics	Component Adhesion (Push Test)	The component shall be reflow soldered onto a P.C. Board (240°C ± 5°C for 20 seconds). Then a dynamometer force gauge shall be applied to any side of the component.	0402 series - 350g 0603 series - 1.0Kg Other series - 0805 ~ 1210 Minimum 1Kg for Ag termination and 2Kg for Mo/Mn termination.
	Drop Test	The inductor shall be dropped two times on the concrete floor or the vinyl tile from 1M naturally.	Change In Inductance: No more than 5%
	Thermal Shock Test	Each cycle shall consist of 30 minutes at -40°C followed by 30 minutes at +85°C with a 5 minutes transition time between temperature extremes. Test duration is 10 cycles.	Change In Q: No more than 10% Change In Appearance: Without distinct damage
Endurance Characteristics	Solderability	Dip pads in flux and dip in solder pot containing lead free solder at 240°C ± 5°C for 5 seconds.	A minimum of 80% of the metalized area must be covered with solder.
	Resistance to Soldering Heat	Dip the components into flux and dip into solder pot containing lead free solder at 260°C ± 5°C for 5 ± 2 seconds.	Change In Inductance: No more than 5% Change In Q: No more than 10% Change In Appearance: Without distinct damage
	Vibration (Random)	Inductors shall be randomly vibrated at amplitude of 1.5mm and frequency of 10-55Hz : 0.04G/Hz for a minimum of 15 minutes per axis for each of the three axes.	
	Cold Temperature Storage	Inductors shall be stored at temperature of -40°C ± 2°C for 1000hrs (+48 -0 hrs.) Then inductors shall be subjected to standard atmospheric conditions for 1 hour. After that, measurement shall be made.	
	High Temperature Storage	Inductors shall be stored at temperature of 85°C ± 2°C for 1000hrs (+48 -0 hrs.) Then inductors shall be subjected to standard atmospheric conditions for 1 hour. After that, measurement shall be made.	
	Moisture Resistance	Inductors shall be stored in the chamber at 45°C at 90-95 R.H. for 1000 hours. Then inductors are to be tested after 2 hours at room temperature.	Inductors shall not have a shorted or open winding.
	High Temperature with Loaded	Inductors shall be stored in the chamber at +85°C for 1000 hours with rated current applied. Inductors shall be tested at the beginning of test at 500 hours and 1000 hours. Then inductors are to be tested after 1 hour at room temperature.	

Type	Pcs/Reel
SWI0805	2,000

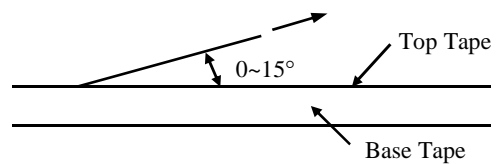


Type	Chip Cavity		Insert Pitch	Tape Thickness		
	A	B	F	K	T	W
SWI0805	1.42	2.26	4.00	1.30	0.23	8.00



Top Tape Strength

The top tape requires a peel-off force of 0.2 to 0.7N in the direction of the arrow as illustrated below.



Dimensions (unit : m/m)

Type	A	B	C
SWI0805	2.60	0.75	1.30

Recommended Pattern

