CUSTOMER :

SPEC NO.:	**D-0601-079-K**
DATE :	**Aug.07, 2025**

RoHS Compliant

SPECIFICATIONS

Product Description : Wire Wound Chip Inductor

Part Number : SWI0402CTxxxx-A1 SERIES

Customer Part Number :

[For Customer Approval Only]

Date :

Approved By	Verified By	Rechecked By	Checked By

Approved By	Verified By	Prepared By
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WIRE WOUND CHIP INDUCTOR SWI0402CT-A1 SERIES

Introduction

The SWI series are wire wound chip inductors widely used in the communication applications.
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

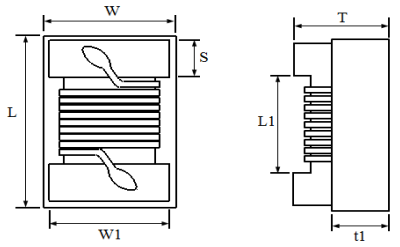
* Operating temperature -40 to +125°C.
* Excellent solderability and resistance to soldering heat.
* Suitable for reflow soldering.
* High reliability and easy surface mount assembly.
* Wide range of inductance values are available for flexible needs.
* AEC-Q200 Grade 1.

Part Number Code

SWI	**0402**	**C**	**T**	**3N3**	**J**	**-**	**A1**
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	(t_1) (Ref.) mm
SWI 0402 1005	(0.039 ± 0.004) 1.00 ± 0.10	(0.022 ± 0.004) 0.55 ± 0.10	(0.020 ± 0.004) 0.50 ± 0.10	(0.008 ± 0.004) 0.20 ± 0.10	0.60	0.48	0.25

3 Material Type C : Ceramic material

4 Inductance Value 3N3 = 3.3nH 33N = 33nH

5 Tolerance B = ±0.20nH S = ±0.30nH G = ±2% J = ±5% K = ±10%

6 Internal Code A1 = Automotive standard

CHIP INDUCTOR SPECIFICATIONS

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

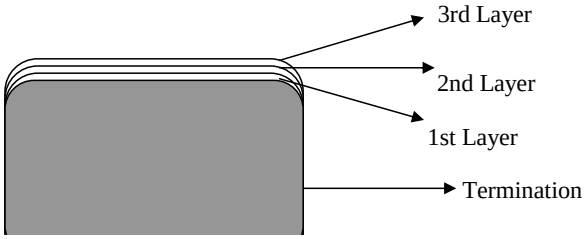
Configuration & Dimension	:	Please refer to the attached figures and tables.
Terminals	:	The terminals shall consist of MoMn or Ag alloy followed by Nickel, then Au for easier soldering.

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	:	-40°C to +125°C

4. Ingredient of terminals electrode



a) 1st layer	:	Mo/Mn or Ag
b) 2nd layer	:	Nickel
c) 3rd layer	:	Gold

5. Characteristics

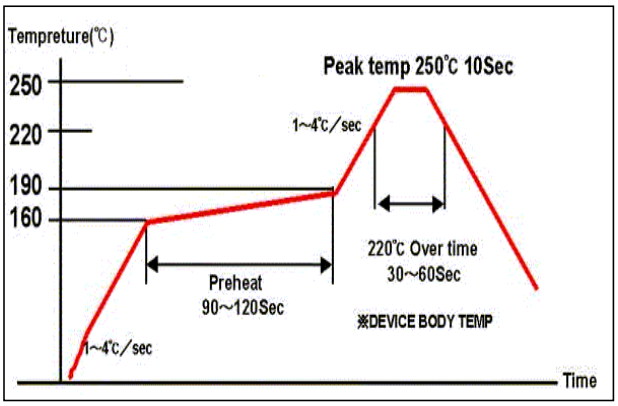
Standard Atmospheric Conditions

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	:	86 kPa to 106 kPa

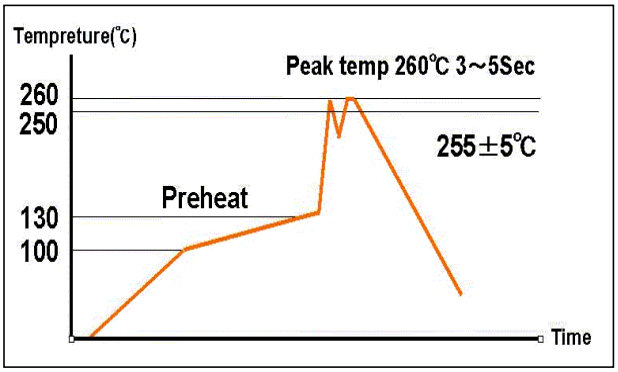
Temperature profile

a. Reflow temperature profile
(Temperature of the mounted parts surface on the printed circuit board)



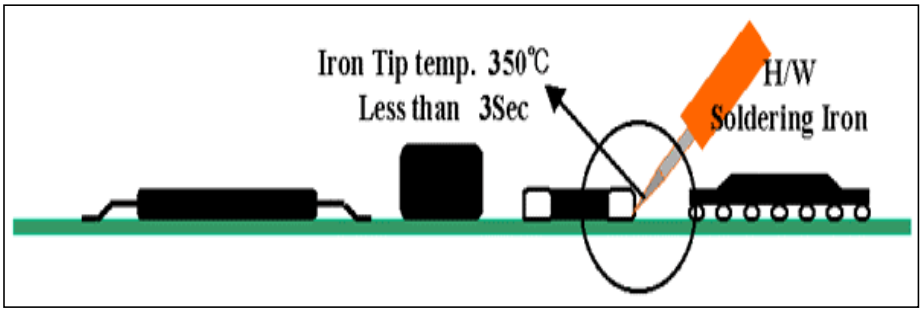
Recommended Peak Temperature： 250°C Max
250°C up /within 10secs
Max. Reflow temperature : 260°C.
Gradient of temperature rise： av 1-4°C/sec
Preheat： 160-190°C/within 90-120secs
220°C up /within 30-60secs
Composition of solder Sn-3Ag-0.5Cu

b. 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

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



CHIP INDUCTOR
WIRE WOUND TYPE

SWI0402CT-A1 SERIES

Specification

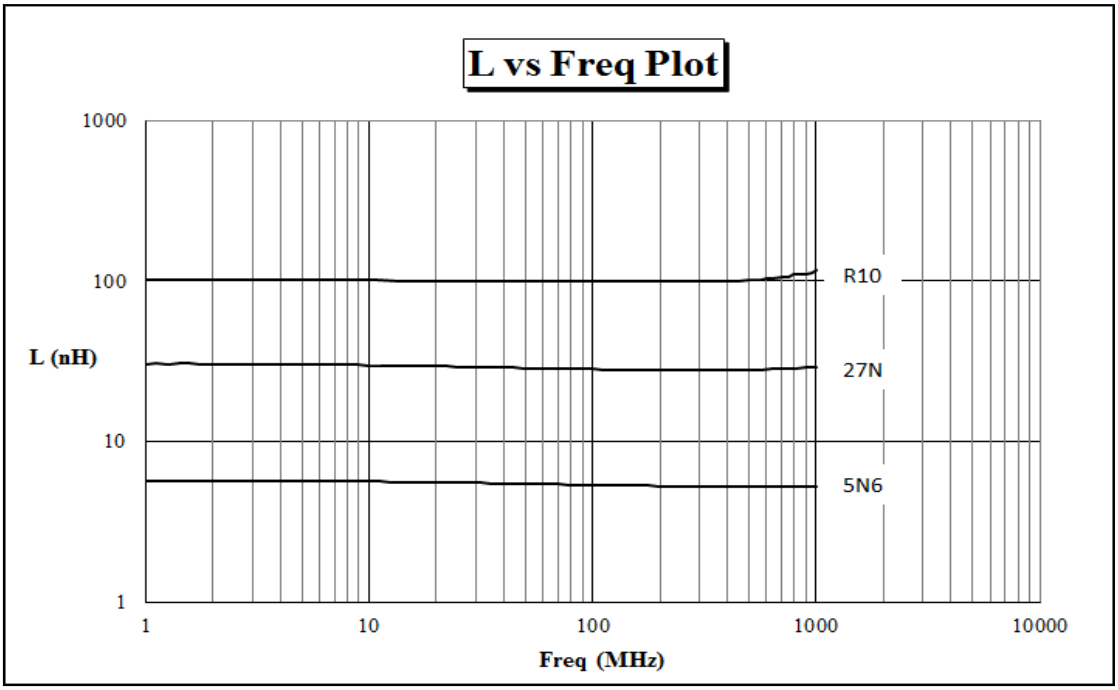
Part No.	Inductance [1] (nH) KEY	Percent Tolerance	Q [2] Min	S.R.F. [3] Min (MHz)	RDC [4] Max (Ω)	IDC [5] Max (mA)
SWI0402CT 1N0 □-A1	1.0 @ 250MHz	B, S	13 @ 250MHz	6000	0.045	1360
SWI0402CT 1N5 □-A1	1.5 @ 250MHz	B, S	16 @ 250MHz	6000	0.070	1040
SWI0402CT 1N8 □-A1	1.8 @ 250MHz	B, S	16 @ 250MHz	6000	0.070	1040
SWI0402CT 1N9 □-A1	1.9 @ 250MHz	B, S	16 @ 250MHz	6000	0.070	1040
SWI0402CT 2N0 □-A1	2.0 @ 250MHz	B, S	16 @ 250MHz	6000	0.070	1040
SWI0402CT 2N2 □-A1	2.2 @ 250MHz	B, S	18 @ 250MHz	6000	0.070	960
SWI0402CT 2N4 □-A1	2.4 @ 250MHz	B, S	16 @ 250MHz	6000	0.068	790
SWI0402CT 2N7 □-A1	2.7 @ 250MHz	B, S	16 @ 250MHz	6000	0.120	860
SWI0402CT 3N2 □-A1	3.2 @ 250MHz	B, S	20 @ 250MHz	6000	0.066	840
SWI0402CT 3N3 □-A1	3.3 @ 250MHz	K, J, B	20 @ 250MHz	6000	0.066	840
SWI0402CT 3N6 □-A1	3.6 @ 250MHz	K, J, B	20 @ 250MHz	6000	0.066	840
SWI0402CT 3N9 □-A1	3.9 @ 250MHz	K, J, B	20 @ 250MHz	5800	0.066	840
SWI0402CT 4N3 □-A1	4.3 @ 250MHz	K, J, B	18 @ 250MHz	6000	0.091	700
SWI0402CT 4N7 □-A1	4.7 @ 250MHz	K, J, B	15 @ 250MHz	4775	0.130	640
SWI0402CT 5N1 □-A1	5.1 @ 250MHz	K, J, B	23 @ 250MHz	5800	0.083	800
SWI0402CT 5N6 □-A1	5.6 @ 250MHz	K, J, B	23 @ 250MHz	5800	0.083	760
SWI0402CT 6N2 □-A1	6.2 @ 250MHz	K, J, B	23 @ 250MHz	5800	0.083	760
SWI0402CT 6N8 □-A1	6.8 @ 250MHz	K, J, B	20 @ 250MHz	4800	0.083	680
SWI0402CT 7N5 □-A1	7.5 @ 250MHz	K, J, B	25 @ 250MHz	5800	0.104	680
SWI0402CT 8N2 □-A1	8.2 @ 250MHz	K, J, B	25 @ 250MHz	4400	0.104	680
SWI0402CT 8N7 □-A1	8.7 @ 250MHz	K, J, B	18 @ 250MHz	4100	0.200	480
SWI0402CT 9N0 □-A1	9.0 @ 250MHz	K, J, B	25 @ 250MHz	4160	0.104	680
SWI0402CT 9N5 □-A1	9.5 @ 250MHz	K, J, B	18 @ 250MHz	4000	0.200	680
SWI0402CT 10N □-A1	10 @ 250MHz	K, J, G	23 @ 250MHz	3900	0.195	480
SWI0402CT 11N □-A1	11 @ 250MHz	K, J, G	26 @ 250MHz	3680	0.120	640
SWI0402CT 12N □-A1	12 @ 250MHz	K, J, G	26 @ 250MHz	3600	0.120	640
SWI0402CT 13N □-A1	13 @ 250MHz	K, J, G	24 @ 250MHz	3450	0.210	560
SWI0402CT 15N □-A1	15 @ 250MHz	K, J, G	26 @ 250MHz	3280	0.172	560
SWI0402CT 16N □-A1	16 @ 250MHz	K, J, G	24 @ 250MHz	3100	0.220	560
SWI0402CT 18N □-A1	18 @ 250MHz	K, J, G	25 @ 250MHz	3100	0.230	520
SWI0402CT 19N □-A1	19 @ 250MHz	K, J, G	26 @ 250MHz	3040	0.202	480
SWI0402CT 20N □-A1	20 @ 250MHz	K, J, G	25 @ 250MHz	3000	0.250	420
SWI0402CT 22N □-A1	22 @ 250MHz	K, J, G	25 @ 250MHz	2800	0.300	400
SWI0402CT 23N □-A1	23 @ 250MHz	K, J, G	26 @ 250MHz	2720	0.214	400
SWI0402CT 24N □-A1	24 @ 250MHz	K, J, G	25 @ 250MHz	2700	0.300	400
SWI0402CT 27N □-A1	27 @ 250MHz	K, J, G	26 @ 250MHz	2480	0.298	400
SWI0402CT 30N □-A1	30 @ 250MHz	K, J, G	25 @ 250MHz	2350	0.300	400
SWI0402CT 33N □-A1	33 @ 250MHz	K, J, G	24 @ 250MHz	2350	0.350	400
SWI0402CT 36N □-A1	36 @ 250MHz	K, J, G	26 @ 250MHz	2320	0.403	320
SWI0402CT 39N □-A1	39 @ 250MHz	K, J, G	25 @ 250MHz	2100	0.550	320
SWI0402CT 40N □-A1	40 @ 250MHz	K, J, G	26 @ 250MHz	2240	0.438	320
SWI0402CT 43N □-A1	43 @ 250MHz	K, J, G	25 @ 250MHz	2030	0.810	240
SWI0402CT 47N □-A1	47 @ 200MHz	K, J, G	26 @ 200MHz	2100	0.830	210
SWI0402CT 51N □-A1	51 @ 200MHz	K, J	25 @ 200MHz	1750	0.820	210
SWI0402CT 56N □-A1	56 @ 200MHz	K, J	22 @ 200MHz	1760	0.970	200
SWI0402CT 62N □-A1	62 @ 200MHz	K, J	22 @ 200MHz	1670	1.050	190
SWI0402CT 68N □-A1	68 @ 200MHz	K, J	22 @ 200MHz	1620	1.120	180
SWI0402CT 72N □-A1	72 @ 150MHz	K, J, G	20 @ 150MHz	1600	1.130	175
SWI0402CT 82N □-A1	82 @ 150MHz	K, J	20 @ 150MHz	1500	1.250	150
SWI0402CT 91N □-A1	91 @ 150MHz	K, J	20 @ 150MHz	1350	2.300	120
SWI0402CT R10 □-A1	100 @ 150MHz	K, J	20 @ 150MHz	1300	2.520	120
SWI0402CT R12 □-A1	120 @ 150MHz	K, J	20 @ 150MHz	1100	2.660	110

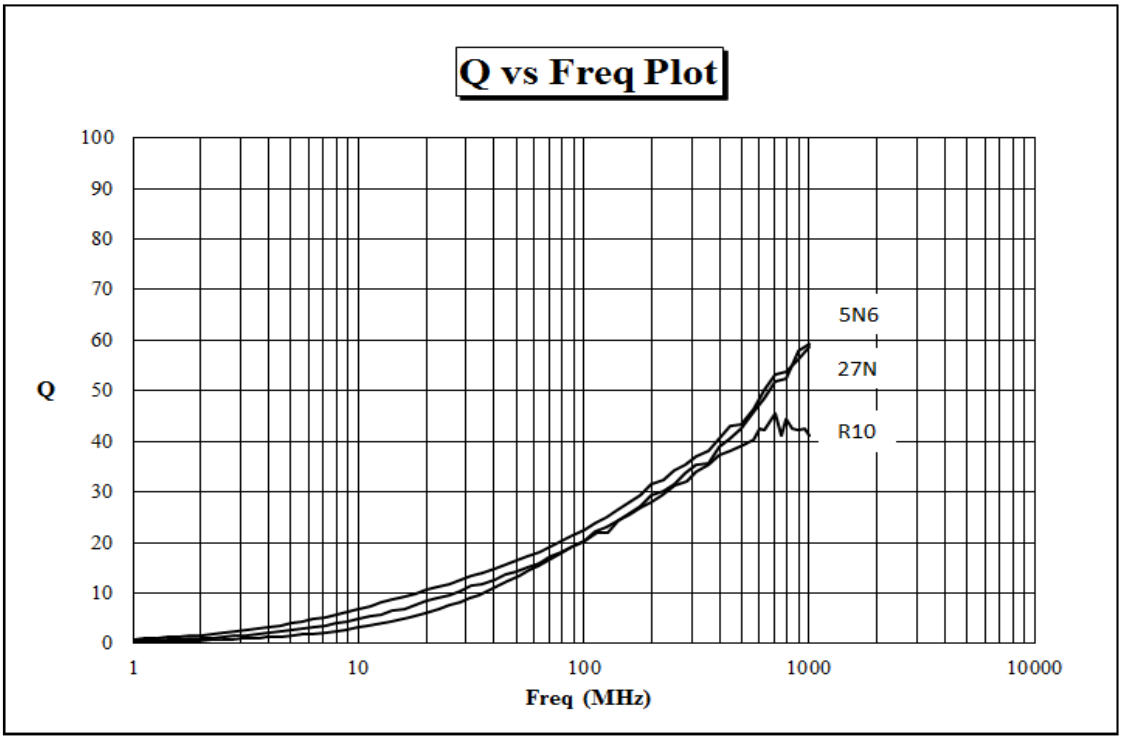
1. Inductance is measured in HP-4287A RF LCR meter with HP-16193 fixture.
2. Q is measured in HP-4287A RF LCR meter with HP-16193 fixture.
3. SRF is measured in ENA E5071B network analyzer or equivalent.
4. RDC is measured in HP-4338B milliohm meter or equivalent.
5. For 15 °C Rise.

CHIP INDUCTOR
WIRE WOUND TYPE

SWI0402CT-A1 SERIES

Specification





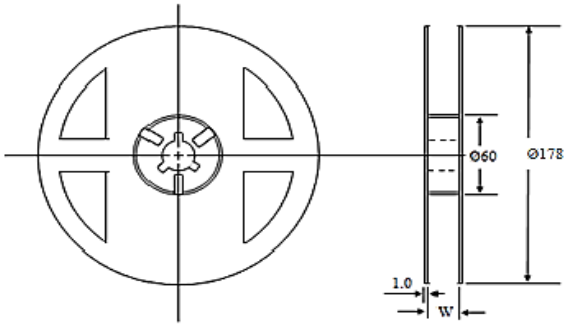
RELIABILITY TEST

Item	Reference documents	Test Condition	Test Specification
1. High Temperature Exposure	MIL-STD-202 Method 108	1. Temperature : 125°C 2. Time : 1000 hours	1. No mechanical or electrical damage. 2. Inductance shall not change more than ±10%.
2. Temperature Cycling	JESD22 Method JA-104	1. Temperature : -40°C~125°C 2. Number of cycle : 1000 cycle 3. Dwell time : 30 minutes	1. No mechanical or electrical damage. 2. Inductance shall not change more than ±10%.
3. Biased Humidity Test	MIL-STD-202 Method 103	1. Temperature : 85±5°C 2. Time : 1000 hours 3. Humidity : 85±5% RH	1. No mechanical or electrical damage. 2. Inductance shall not change more than ±10%.
4. Operational Life	MIL-PRF-27-3.26/4.7.23 & User spec.	1. Temperature : 125°C (Temp. rise included) 2. Time : 1000 hours 3. Rated current.	1. No mechanical or electrical damage. 2. Inductance shall not change more than ±10%.
5. External Visual	MIL-STD-883 Method 2009	Inspect product constructions and workmanship.	1. No pollution on the surface of products. 2. No crack
6. Physical Dimensions	JESD22 Method JB-100	Verify physical dimensions to the applicable product detail specification.	Per product specification standard.
7. Resistance to solvents	MIL-STD-202 Method 215	Immerse into solvent for 3±0.5 minutes & brush 10 times for 3 cycles.	1. No body deformation change in appearance or obliteration of marking. 2. Inductance shall not change more than ±10%.
8. Mechanical Shock	MIL-STD-202 Method 213	1. Peak acceleration 100g's 2. Duration of pulse : 6ms 3. Waveform : Half-sine 4. Velocity change : 12.3ft/sec 5. Direction : ±X. ±Y, ±Z (3 times/axis)	1. No mechanical or electrical damage. 2. Inductance shall not change more than ±10%.
9. Vibration Test	MIL-STD-202 Method 204	1. Frequency and Amplitude: 10-2000-10 Hz 2. Sweep time : 20 min 3. Acceleration : 5g 4. Direction : X, Y, Z 5. Number of sweep : 12 time/axis	1. No mechanical or electrical damage. 2. Inductance shall not change more than ±10%.
10. Resistance To Soldering Heat Test	MIL-STD-202 Method 210 & J-STD020	1. Highest temperature : 260±5°C 2. Time (temp.≥217°C) : 60~150 second 3. Reflow times : 3 times	1. No mechanical or electrical damage. 2. Inductance shall not change more than ±10%.
11. ESD	AEC-Q200-002 or ISO/DIS 10605	1. ESD voltage : 15kV 2. Mode 1 : 150pF / 330Ω 3. Mode 2 : 150pF / 2000Ω 4. Discharge times and polarity : 3 times pos. / 3 times eng. for each condition	1. No mechanical or electrical damage. 2. Inductance shall not change more than ±10%.
12. Solderability Test	J-STD-002	1. Baking in pre-testing: 150±5°C/16hours± 30min. 2. Peak temperature : 240±5°C 3. Time (temp. ≥217°C) : 60~150 second 4. Reflow times : 1 time	More than 95% soldering coverage min. on terminations.
13. Electrical Characterization	MIL-STD-202 Method 304 & User Spec.	1. Operating temperature : -40°C~125°C 2. Room temperature : 25°C	1. No mechanical or electrical damage. 2. Inductance shall not change more than ±10%.
14. Flammability			
15. Board Flex	AEC-Q200-005	1. Deflection speed : 1mm/sec 2. Amount of deflection : 2 mm 3. Span : 90 mm 4. Direction for test : Bottom of PCB 5. Holding time : 60 sec	1. No mechanical or electrical damage. 2. Inductance shall not change more than ±10%.
16. Terminal Strength Test	AEC-Q200-006	1. Apply push force to samples mounted on PCB. 2. Force of 0.45kg for 60±1 seconds.	After test, inductors shall be no mechanical damage.

PACKING INFORMATION

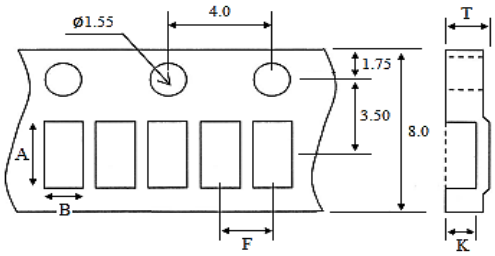
Packing Quantity

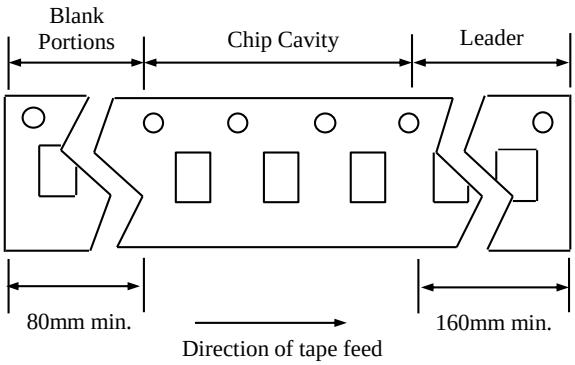
Type	Pcs / Reel
SWI0402	10,000



Dimensions (unit : mm)

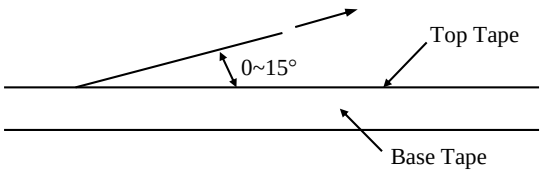
Type	Chip Cavity		Insert Pitch	Tape Thickness		
	A	B	F	K	T	W
SWI0402	0.74	1.23	2.00	0.60	0.70	8.00



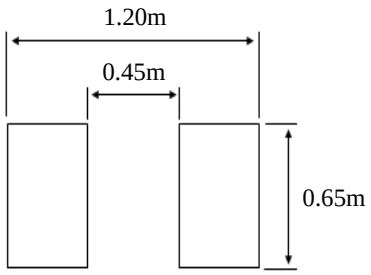


Top Tape Strength

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



Recommended Pattern



SAFETY NOTES & PRECAUTION

1. The risks of using the product are highly relevant to the field of application and need to be evaluated by both user and manufacturer. If the product is used for a purpose that directly affects personal safety or will cause significant impact or loss to the society, please be sure to contact us first for confirmation.

2. The storage period is less than 12 months. Ensure to follow the storage conditions (Temperature: 5 to 30°C, Humidity: 10 to 60% RH or less). If the storage period is exceeded the limit, the electrodes might be deteriorate/oxidized and affect soldering. Solderability should be checked if this period is exceeded.
Other storage precaution:
a) Products should be stored on the pallet for the prevention of the influence from humidity, dust and so on.
b) Products should be stored in the warehouse without heat shock, vibration, direct sunlight and so on.
c) Do not unpack the minimum package until immediately before use. After unpacking, re-seal promptly or store in deciccator with a desiccant.
d) Do not store product in bulk to prevent coils and parts being damaged.

3. Do not use or store in locations where there are corrosive gases (salt, acid, alkali, etc.).

4. Soldering condition for mounting should be within the specification range.
If overheated, a short circuit, performance deterioration, or lifespan shortening may occur.

5. When using, try to avoid excessive mechanical impact on the product such as collision / drop…etc.

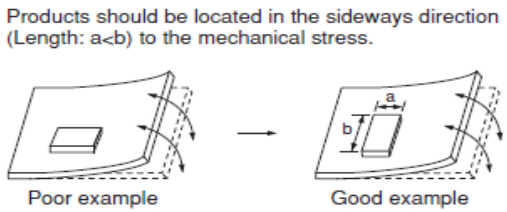
6. When assembling a printed circuit board with a new mounted chip, be careful to avoid assembly deformation of the circuit board that may cause the overall or partial distortion of the circuit board such as at screw tightening position.

7. Self heating (temperature increase) occurs when the power is turned ON, so the tolerance should be sufficient for the thermal design.

8. Do not expose the products to magnets or magnetic fields.

9. If you would like to use this products for more stringent safety or reliability of performance and/or quality requirements, or its failure, malfunction or trouble may cause serious damage to society, individuals or property, or you have special requirement beyond the specification or condition in the catalogue, please contact us.

10. PCB should be designed so that products are not subjected to the mechanical stress caused by warping of the board as shown below. Bending and twisting of PCB will cause excessive mechanical stress and lead to crack in the product as well.



11. Cleaning brush shall not touch the winding portion of the product to prevent the breaking of wire. Cleaning could cause failure and degradation of a product.

12. Care should be taken when transporting or handling product to avoid excessive vibration or mechanical shock. Product could be damaged by external mechanical pressure, stacked under heavy object, as well as strong shaking and drop.