

A-PLUS POWER TECHNOLOGY CO., LTD.

RoHS & Halogen Free & REACH Compliance.

SPECIFICATION FOR APPROVAL

Customer : _____
Customer P/N: _____
Drawing No : _____
Quantity : 0 Pcs. Date : 2015/02/10
A-PLUS P/N : TFL0603T-Series-S

SPECIFICATION ACCEPTED BY:	
COMPONENT ENGINEER	
ELECTRICAL ENGINEER	
MECHANICAL ENGINEER	
APPROVED	
REJECTED	

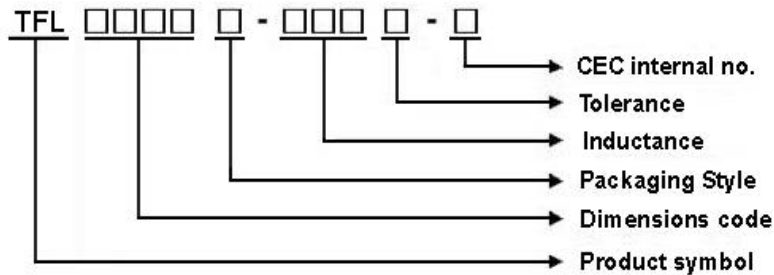
Drawn by karen.yang	Checked by ling	Approved by jacky.chung
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TFL0603T Series Specification

1 Scope: This specification applies to Thin Film chip inductors

2 Part Numbering:



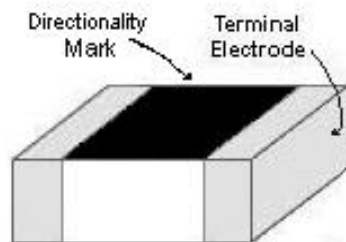
3 Rating:

Operating Temperature: $-5.5^{\circ}\text{C} \sim 125^{\circ}\text{C}$ (Including self - temperature rise)

Storage Temperature: $-5.5^{\circ}\text{C} \sim 125^{\circ}\text{C}$ (after PCB)

$-5^{\circ}\text{C} \sim 40^{\circ}\text{C}$, Humidity 40% ~ 70% (before PCB)

4 Marking:



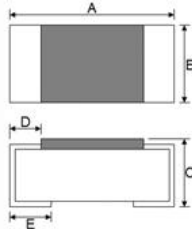
5 Standard Testing Condition

	Unless otherwise specified	In case of doubt
Temperature	Ordinary Temperature(15 to 35°C)	20±2°C
Humidity	Ordinary Humidity(25 to 85% RH)	60 to 70 % RH

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6 Configuration and Dimensions:



Dimensions in mm

TYPE	TFL0603
A	0.61±0.05
B	0.31±0.05
C	0.30±0.05
D	0.10±0.05
E	0.15±0.05

7 Electrical Characteristics:

Part No.	Inductance (nH)	L,Q Test Freq.	Q Min.	SRF (MHz)Typ.	RDC (Ω)Max.	Rated Current (mA)Max.	Tolerance
TFL0603T-0N6□-S	0.6	500 MHz,500 mV	14	6000	0.1	900	B,C
TFL0603T-0N7□-S	0.7	500 MHz,500 mV	14	6000	0.1	850	B,C
TFL0603T-0N8□-S	0.8	500 MHz,500 mV	14	6000	0.1	850	B,C
TFL0603T-0N9□-S	0.9	500 MHz,500 mV	14	6000	0.1	800	B,C
TFL0603T-1N0□-S	1	500 MHz,500 mV	14	6000	0.1	800	B,C
TFL0603T-1N1□-S	1.1	500 MHz,500 mV	14	6000	0.1	800	B,C
TFL0603T-1N2□-S	1.2	500 MHz,500 mV	14	6000	0.1	800	B,C
TFL0603T-1N3□-S	1.3	500 MHz,500 mV	14	6000	0.12	650	B,C
TFL0603T-1N4□-S	1.4	500 MHz,500 mV	14	6000	0.13	650	B,C
TFL0603T-1N5□-S	1.5	500 MHz,500 mV	14	6000	0.16	650	B,C
TFL0603T-1N6□-S	1.6	500 MHz,500 mV	14	6000	0.16	650	B,C
TFL0603T-1N7□-S	1.7	500 MHz,500 mV	14	6000	0.2	650	B,C
TFL0603T-1N8□-S	1.8	500 MHz,500 mV	14	6000	0.2	650	B,C
TFL0603T-1N9□-S	1.9	500 MHz,500 mV	14	6000	0.2	620	B,C
TFL0603T-2N0□-S	2	500 MHz,500 mV	14	6000	0.2	620	B,C
TFL0603T-2N1□-S	2.1	500 MHz,500 mV	14	6000	0.2	620	B,C
TFL0603T-2N2□-S	2.2	500 MHz,500 mV	14	6000	0.2	620	B,C
TFL0603T-2N3□-S	2.3	500 MHz,500 mV	14	6000	0.2	500	B,C
TFL0603T-2N4□-S	2.4	500 MHz,500 mV	14	6000	0.2	500	B,C
TFL0603T-2N5□-S	2.5	500 MHz,500 mV	14	6000	0.2	500	B,C
TFL0603T-2N6□-S	2.6	500 MHz,500 mV	14	6000	0.2	500	B,C
TFL0603T-2N7□-S	2.7	500 MHz,500 mV	14	6000	0.23	500	B,C
TFL0603T-2N8□-S	2.8	500 MHz,500 mV	14	6000	0.25	500	B,C
TFL0603T-2N9□-S	2.9	500 MHz,500 mV	14	6000	0.25	500	B,C
TFL0603T-3N0□-S	3	500 MHz,500 mV	14	6000	0.3	450	B,C

NOTE: □-tolerance B=±0.1nH / C=±0.2nH / H=±3% / J=5%

1.Operating temperature range — 5 5 °C ~ 1 2 5 °C(Including self - temperature rise)

2.Rate Current : Applied the current to coils, the temperature rise shall not be more than 25°C

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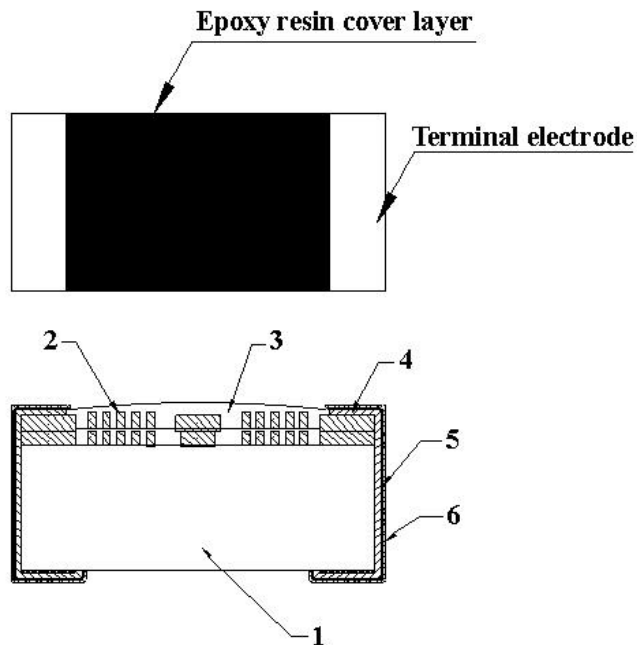
Part No.	Inductance (nH)	L,Q Test Freq.	Q Min.	SRF (MHz)Typ.	RDC (Ω)Max.	Rated Current (mA)Max.	Tolerance
TFL0603T-3N1□-S	3.1	500 MHz,500 mV	14	6000	0.3	450	B,C
TFL0603T-3N2□-S	3.2	500 MHz,500 mV	14	6000	0.3	450	B,C
TFL0603T-3N3□-S	3.3	500 MHz,500 mV	14	6000	0.3	450	B,C
TFL0603T-3N4□-S	3.4	500 MHz,500 mV	14	6000	0.32	450	B,C
TFL0603T-3N5□-S	3.5	500 MHz,500 mV	14	6000	0.32	450	B,C
TFL0603T-3N6□-S	3.6	500 MHz,500 mV	14	6000	0.32	400	B,C
TFL0603T-3N7□-S	3.7	500 MHz,500 mV	14	6000	0.4	400	B,C
TFL0603T-3N8□-S	3.8	500 MHz,500 mV	14	6000	0.4	350	B,C
TFL0603T-3N9□-S	3.9	500 MHz,500 mV	14	5700	0.4	350	B,C
TFL0603T-4N3□-S	4.3	500 MHz,500 mV	14	5300	0.4	300	H,J
TFL0603T-4N7□-S	4.7	500 MHz,500 mV	14	4400	0.45	280	H,J
TFL0603T-5N1□-S	5.1	500 MHz,500 mV	14	4200	0.5	270	H,J
TFL0603T-5N6□-S	5.6	500 MHz,500 mV	14	4000	0.55	260	H,J
TFL0603T-6N2□-S	6.2	500 MHz,500 mV	14	4000	0.6	250	H,J
TFL0603T-6N8□-S	6.8	500 MHz,500 mV	14	3900	0.7	230	H,J
TFL0603T-7N5□-S	7.5	500 MHz,500 mV	12	3700	1.1	180	H,J
TFL0603T-8N2□-S	8.2	500 MHz,500 mV	12	3600	1.2	180	H,J
TFL0603T-9N1□-S	9.1	500 MHz,500 mV	12	3300	1.2	180	H,J
TFL0603T-10N□-S	10	500 MHz,500 mV	12	3200	1.3	180	H,J
TFL0603T-12N□-S	12	500 MHz,500 mV	12	2900	1.3	180	H,J
TFL0603T-15N□-S	15	500 MHz,500 mV	12	2600	1.5	180	H,J
TFL0603T-18N□-S	18	500 MHz,500 mV	12	2200	1.7	160	H,J
TFL0603T-22N□-S	22	500 MHz,500 mV	12	2200	2.55	120	H,J

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TFL0603T Series Specification

8 TFL0603T Series

8.1 Construction:



8.2 Material List:

NO	Part	Material
1	Alumina substrate	Al ₂ O ₃
2	Coil	Cu
3	Insulation / Protection layer	Epoxy resin
4	Cu plating	Cu
5	Ni plating	Ni
6	Sn plating	Sn

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TFL0603T Series Specification

9 Reliability Of Thin Filmr Chip Inductor For High Freq.

1-1.Mechanical Performance

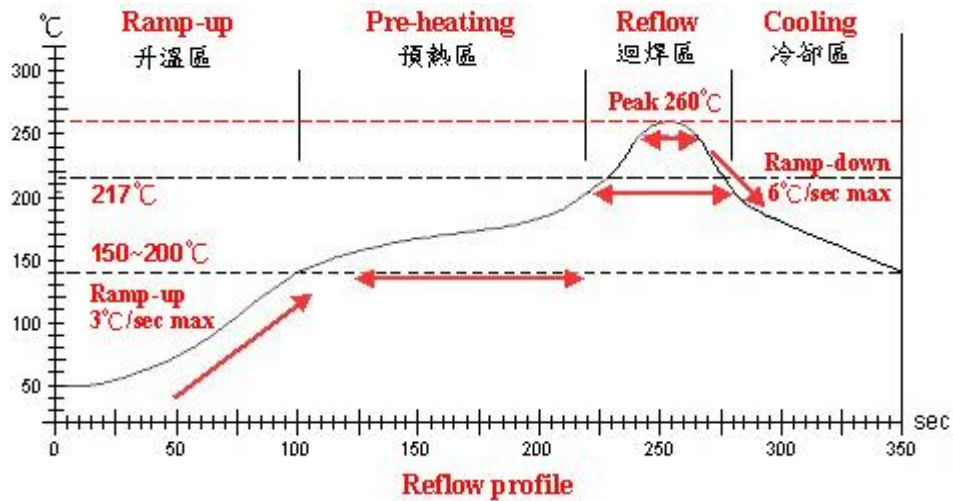
No	Item	Specification	Test Method
1-1-1	Flexure Strength	The forces applied on the right conditions must not damage the terminal electrode and the ferrite	Test device shall be soldered on the substrate Substrate Dimension: 100x40x1.6mm Deflection: 2.0mm Keeping Time: 30sec *For 100505, substrate dimension is 100x40x0.8mm
1-1-2	Vibration		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
1-1-3	Resistance to Soldering Heat	Appearance: No damage	Pre-heating: 150°C, 1min Solder Composition: Sn/Ag3.0/Cu0.5(Pb-Free) Solder Temperature: 260±5°C Immersion Time: 10±1sec
1-1-4	Solder ability	The electrodes shall be at least 95% covered with new solder coating	Pre-heating: 150°C, 1min Solder Composition: Sn/Ag3.0/Cu0.5(Pb-Free) Solder Temperature: 245±5°C (Pb-Free) Immersion Time: 4±1sec

1-2.Environmental Performance

No	Item	Specification	Test Method		
1-2-1	Temperature Cycle	Appearance: No damage Inductance: within±10% of initial value Q change: within±30% of initial value	One cycle:		
			Step	Temperature (°C)	Time (min)
			1	-55±3	30
			2	25±2	3
3	125±3	30			
4	25±2	3			
			Total: 100cycles Measured after exposure in the room condition for 24hrs		
1-2-2	Humidity Resistance		Temperature: 40±2°C Relative Humidity: 90 ~ 95% Time: 1000hrs Measured after exposure in the room condition for 24hrs		
1-2-3	High Temperature Resistance		Temperature: 125±3°C Relative Humidity: 20% Applied Current: Rated Current / Time: 1000hrs Measured after exposure in the room condition for 24hrs		
1-2-4	Low Temperature Resistance		Temperature: -55±3°C Relative Humidity: 0% / Time: 1000hrs Measured after exposure in the room condition for 24hrs		

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Lead-Free(LF) 標準溫度分析範圍

Refer to J-STD-020C

管制項目 Item.	升温區 Ramp-up	預熱區 Pre-heating	迴焊區 Reflow	Peak Temp	冷卻區 Cooling
溫度範圍 Temp. scope	R.T. ~ 150°C	150°C ~ 200°C	217°C	260±5°C	Peak Temp. ~ 150°C
標準時間 Time spec.	—	60 ~ 180 sec	60 ~ 150sec	20 ~ 40 sec	—
實際時間 Time result	—	75 ~ 100 sec	90 ~ 120sec	20 ~ 35 sec	—

NOTE :

1. Re-flow possible times : within 2 times
2. Nitrogen adopted is recommended while in re-flow

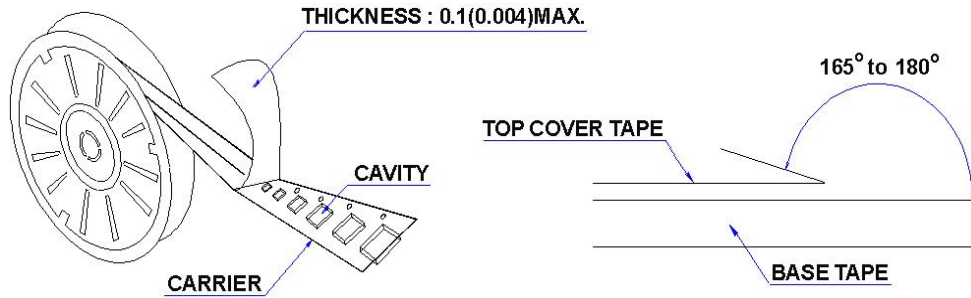
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11 Packaging:

11.1 Packaging -Cover Tape

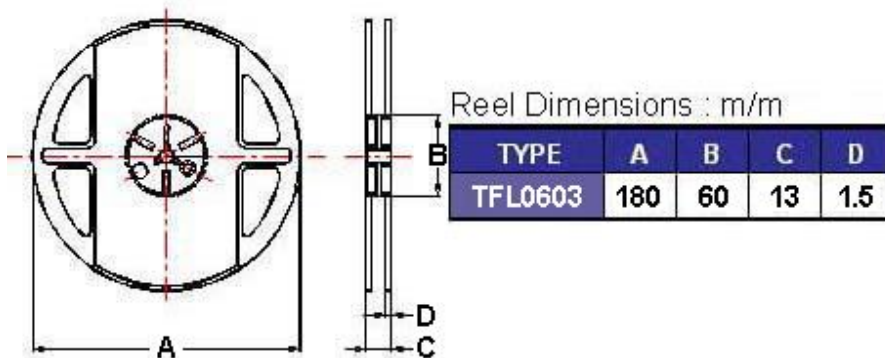
The force for tearing off cover tape is 10 to 100 grams in the arrow direction.



11.2 Packaging Quantity

TYPE	BULK	PCS/REEL
TFL0603	✓	15000

11.3 Reel Dimensions

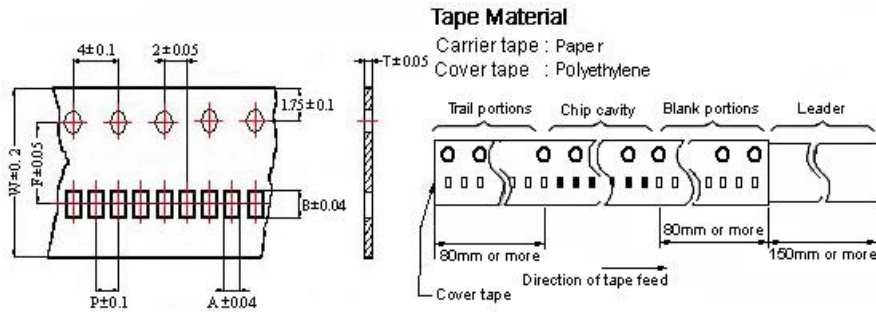


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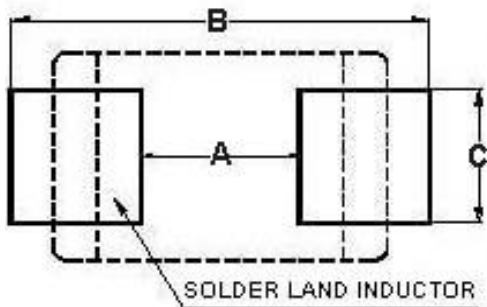
11 Packaging:

11.4 Tape Dimensions in mm



TYPE	A	B	T	W	P	F
TFL0603	0.37	0.67	0.42	8	2	3.5

12 Recommended Land Pattern:



Dimensions in mm

TYPE	A	B	C
TFL0603	0.3	0.75~1.05	0.3

13 Note:

1. Please make sure that your product has been evaluated and confirmed against your specifications when our product is mounted to your product.
2. Do not knock nor drop.
3. All the items and parameters in this product specification have been prescribed on the premise that our product is used for the purpose, under the condition and in the environment agreed upon between you and us. You are requested not to use our product deviating from such agreement.
4. Please keep the distance between transformer/coil and other components (refer to the standard IEC 950)