

WELLCOMP TECHNOLOGY CO., LTD

APPROVAL SHEET

Model Name	Metal Film Current Sensing Resistor
Part Number	WTCS R000 Series
Customer Name	
Customer P/N	
Issued Date	

Customer		Maker		
Approved	Checked	Inspector	Checked	Prepared



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Features

- ◆ Chip size from 0402 to 2512
- ◆ Ultra low resistance-0.5mΩ max.
- ◆ Compatible with large currents (15.8A to 63.2A)
- ◆ Lead free, RoHS compliant for global applications and halogen free

Application

- ◆ Mobile electronic equipment-Smart phone, NB Tablet
- ◆ Power management equipment.
- ◆ Digital consumer- PC, GPS, DSC, HDD

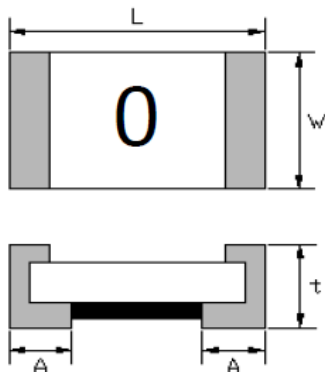
Part Numbering System

WTCS 1206 R000 0 T A

(1) (2) (3) (4) (5) (6)

- (1) Series Code
- (2) Size (EIA): Length x Width
- (3) Resistance: R000=0mΩ
- (4) Tolerance: 0(R<0.5mΩ)
- (5) Packaging: T- Embossed paper tape, 7" reel
 E-Embossed plastic tape, 7" reel
- (6) Factory Code, A=Taiwan Factory

Dimension

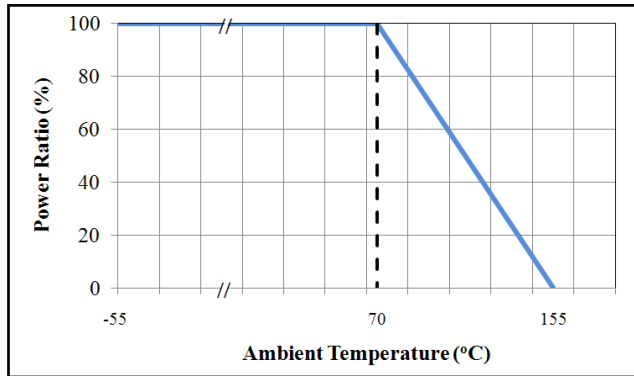


Chip Size (inch)	Dimensions (Unit : mm)			
	L	W	t	A
0402	1.00±0.10	0.50±0.05	0.40±0.05	0.30±0.10
0603	1.55±0.10	0.80±0.10	0.55±0.10	0.35±0.20
0805	2.1±0.15	1.35±0.15	0.70±0.10	0.55±0.20
1206	3.10±0.20	1.55±0.10	0.70±0.10	0.80±0.20
2512	6.50±0.20	3.20±0.20	0.75±0.10	0.85±0.25

Electrical Specification

Type	Rating Current(A)	Max Resistance (mΩ)	Operation Temp. Range	Max overload Current(A)
0402	6.5	0.5	-55~+155°C	14.2
0603	22.4			56
0805	31.6			79
1206	38.7			96.7
2512	63.2			158

Derating Curve



Performances

Environmental Performance

No.	Item	Test Condition	Specification
1	Short Time Overload	2.5X rated current for 5 sec , (JIS-C5202-5.5)	0402: Max 3mΩ 0603~2512: Max 0.5mΩ
2	Damp Heat with Load	The specimens shall be placed in a chamber and subjected to a relative humidity of 90~95% percent and a temperature of 40° ±2°C for the period of 1000 hrs. (MIL-STD-202, Method 103)	0402: Max 3mΩ 0603~2512: Max 0.5mΩ
3	High Temperature Exposure	The ship (mounted on board) is exposed in the heat chamber 125±3°C for 1000 hrs. (JIS-C5202-7.2)	0402: Max 3mΩ 0603~2512: Max 0.5mΩ
4	Load Life	Apply rated power at 70±2°C for 1000 hours with 1.5 hours ON and 0.5 hour OFF. (JIS-C5202-7.10)	0402: Max 3mΩ 0603~2512: Max 0.5mΩ
5	Rapid change of temperature	<p>The chip (mounted on board) is exposed, -55±3°C (30min.)/+155±2°C (30min.) for 5 cycles. The following conditions as the following figure. (JIS-C5202-7.4)</p> <p>Ambient temperature</p> <p>30 min. 30 min.</p> <p>+125(±2)°C</p> <p>+25(±2)°C</p> <p>-55(±3)°C</p> <p>2~3min.</p> <p>1 cycle</p>	0402: Max 3mΩ 0603~2512: Max 0.5mΩ

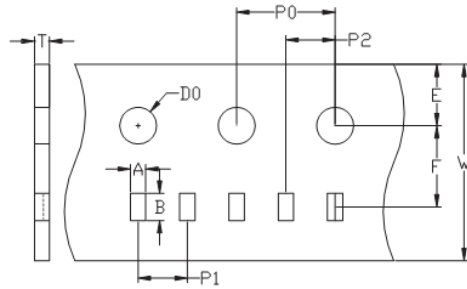
Note: Test Board surface temperature shall not exceed 100 °C when applying rated current.

Function Performance

No.	Item	Test Condition	Specification
1	Bending Strength	<p>Mount the chip to test substrate. Apply pressure in direction of arrow unit band width reaches 3mm(+0.2/-0mm) illustrated in the figure below and hold for 10±1 sec. (JIS-C5202-6.1)</p> <p style="text-align: right;">Unit: mm</p>	<p>0402: Max 3mΩ 0603~2512: Max 0.5mΩ</p>
2	Resistance to solder Heat	<p>The specimen chip shall be immersed into the flux specified in the solder bath 260±5°C for 10±1 sec. (MIL-STD-202, Method 210)</p>	<p>0402: Max 3mΩ 0603~2512: Max 0.5mΩ</p>
3	Solderability	<p>The specimen chip shall be immersed into the flux specified in the solder bath 235±5°C for 2±0.5 sec. It shall be immersed to a point 10mm from its root. (Sn96.5/Ag3.0/Cu0.5) (JIS-C5 202-6.11)</p>	<p>Solder shall be covered 95% or more of the electrode area.</p>

Tape Packaging Specifications

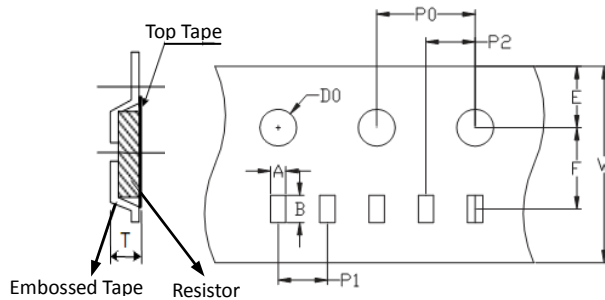
◆ Paper Tape Specification



Unit : mm

Type	Carrier Dimensions									
	A	B	E	F	W	P0	P1	P2	D0	T
0402	0.7±0.05	1.2±0.05	1.75±0.1	3.5±0.05	8.0±0.2	4.0±0.1	2.0±0.1	2.0±0.05	1.55±0.05	0.45±0.1
0603	1.1±0.1	1.9±0.1	1.75±0.1	3.5±0.05	8.0±0.2	4.0±0.1	4.0±0.1	2.0±0.05	1.55±0.05	0.64±0.1
0805	1.6±0.1	2.4±0.1	1.75±0.1	3.5±0.05	8.0±0.2	4.0±0.1	4.0±0.1	2.0±0.05	1.55±0.05	0.97±0.1
1206	2.0±0.1	3.6±0.1	1.75±0.1	3.5±0.05	8.0±0.2	4.0±0.1	4.0±0.1	2.0±0.05	1.55±0.05	0.97±0.1

◆ Embossed Plastic Tape Specifications



Unit : mm

Type	Carrier Dimensions									
	A	B	E	F	W	P0	P1	P2	D0	T
2512	3.5±0.1	6.8±0.1	1.75±0.1	5.5±0.05	12.0±0.2	4.0±0.05	4.0±0.1	2.0±0.05	1.5±0.1	1.0±0.2

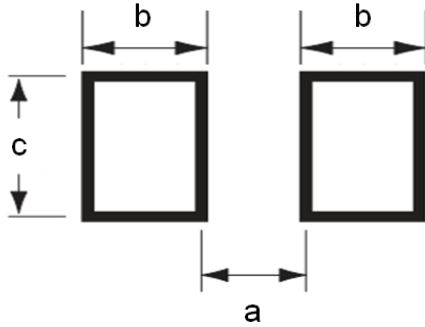
◆ Packaging

Size EIA (EIAJ)	0402	0603/0805/1206	2512
Standard Packing Quantity (pcs /reel)	10,000	5,000	4,000

Storage Conditions

Temperature : 5~35°C, Humidity : 40~75%

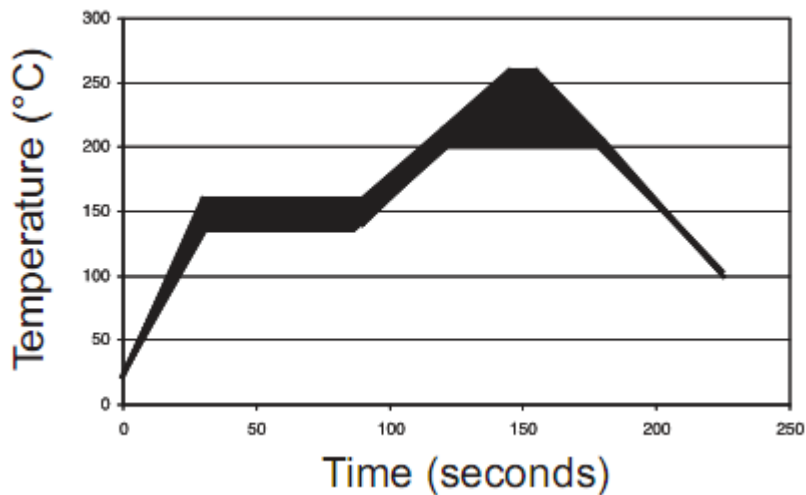
Recommended Solder Pad Layout



Type	Pad Layout Dimension (mm)		
	a	b	c
0402	0.60	0.50	0.60
0603	0.90	0.70	1.00
0805	1.20	1.20	1.40
1206	2.00	1.30	1.80
2512	3.80	2.10	3.40

Soldering Recommendations

- ◆ Peak reflow temperatures and durations :
 - IR Reflow Peak = 260°C max for 10 sec
 - Wave Solder = 260°C max for 10 sec
- ◆ Compatible with lead and lead-free solder reflow processes
- ◆ Recommended IR Reflow Profile :



ECN

Engineering Change Notice : The customer will be informed with ECN if there is significant modification on the characteristics and materials described in Approval Sheet.



WTCS R000 Series

Thin Film Zero-Ohm Resistor

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Issued Date: 2018/9/14

Version: A03

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