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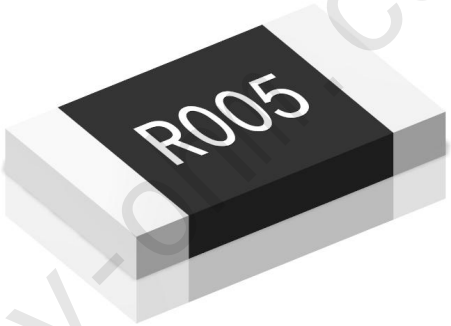
SMD Chip E-beam Welding Alloy Resistor

Epoxy SMD Chip E-Beam Welding Alloy Resistor

current sensing，ultra-low resistance value,excellent stability，AEC-Q200 compliant



Features:

- Electron-beam welding craf，pure copper electrode，Ideal solution for current detection applications
- high reliability and stability ,superb pulse load capability
- Coating with heat-resistant epoxy resin, excellent weather resistance
- Ultra-low thermal EMF
- Ultra-low parasitic inductance，fast response, suitable for high frequency AC current detection
- RoHS compliant
- customization

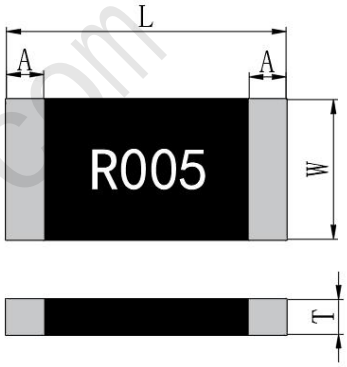
parameter:	
resistance value	1～100mΩ
tolerance	±1%(F),±5%(J)
TCR	Min.±50ppm/℃
temperature range	-55℃~+170℃
inductance	<3nH
thermal EMF (0-100°C)	<1 μV/℃
power ($P_{70℃}$)	Max. 5W

Type Designation: example WSM2817KR005FT0 WSM2817 Karma 5mohm 1% package with tape and reel

W	S	M	2	8	1	7	K	R	0	0	5	F	T	0

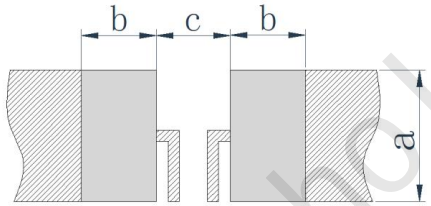
- WSM: epoxy SMD chip alloy resistor
- Size: 2817
- Material: K: Karma; M: Manganese copper
- resistance value: R001 = 1mΩ; R005 = 5mΩ; R100=100mΩ
- tolerance: F=±1%; J=±5%
- code: T0: package with tape and reel; B0: without tape and reel; Tx: special code(x: 0~9)

Dimensions(mm):



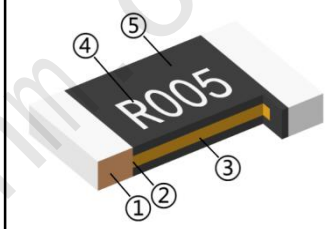
series	power	resistance value	material	TCR	tolerance	L (mm)	W (mm)	T (mm)	A (mm)
WSM2817	5W	1mΩ ~ 3mΩ	M	±75ppm	±1%(F) ±5%(J)	7.1±0.2	4.3±0.2	1.0±0.15	1.2±0.2
		4mΩ ~ 50mΩ	K	±50ppm					
	3W	51mΩ ~ 100mΩ	K	±50ppm					

Recommended pad and size(mm):



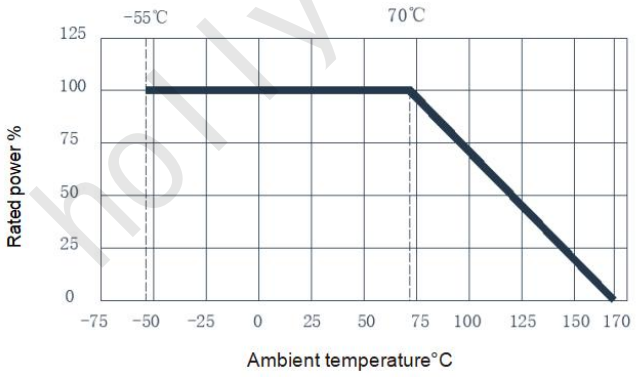
series	resistance value	a (mm)	b (mm)	c (mm)
WSM2817	1mΩ ~ 100mΩ	5.2	2.75	3.5

construction:



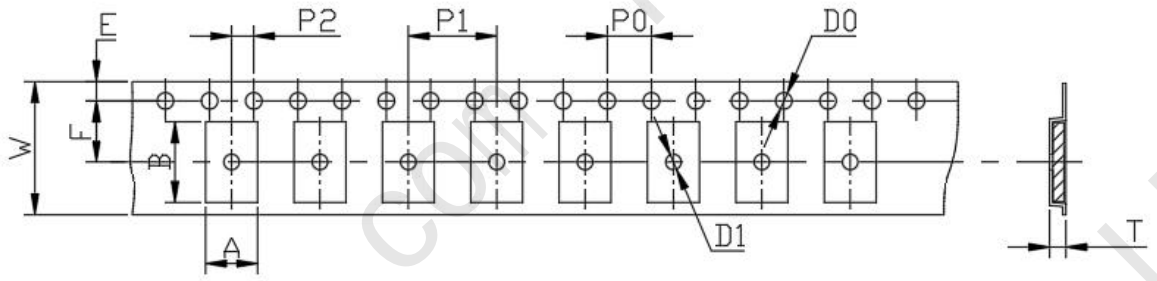
1.Ni and Sn plating on the surface of red copper
2.electron-beam welding
3.Manganese copper/Karma
4.Silk-screen marking
5.epoxy resin

Derating Curve:

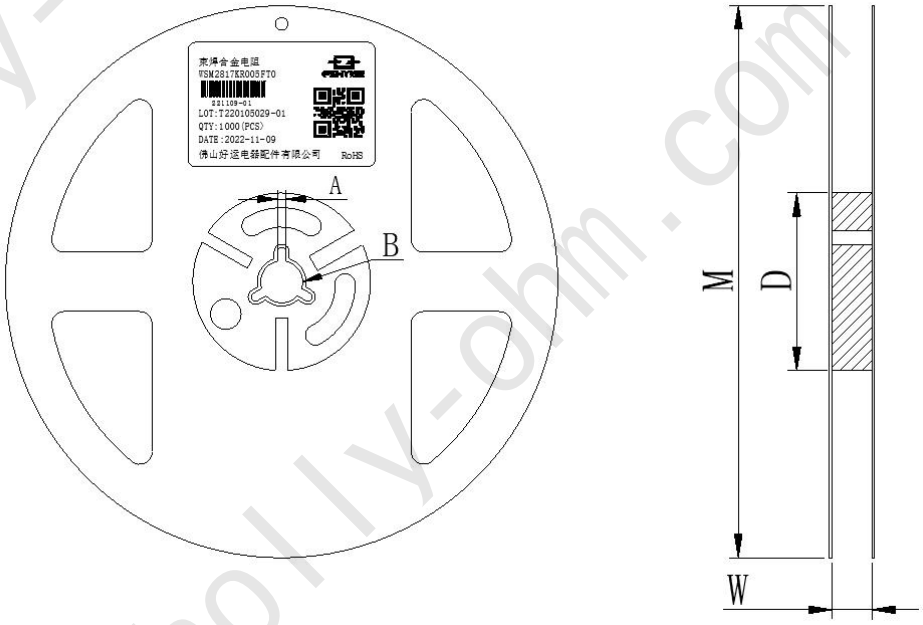


performance indicators:		
Test Item	**standard**	**Test method**
TCR	Within specified TCR	IEC60115-1 4.8，measured point 20°C～+130°C，reference point +20°C
Solderability	No visible damage 95%covered Minimum	IEC60115-1 4.17，245°C tin bath，3s
Short-time overload	No visible damage △R±1% Maximum	IEC60115-1 4.13，five times rated power，5s
Resistance to soldering heat	No visible damage △R±0.5% Maximum	IEC60115-1 4.18，260°C tin bath，maintaining10s
Base plate bending test	Within specified value	IEC60115-1 4.33，2mm，maintaining 60+5s
Flammability	Incomplete combustion, with the shim unignited and the pine wood board not charred	UL-94 V-0 or V- 1is acceptable，no need to do electrical test
Insulation resistance	1000MΩ, Minimum	IEC60115-1 4.6，Applying a direct current voltage of 100 V between the electrode and the substrate.，maintaining 60s，then test insulation resistance value
Withstand voltage	without breaking down or arc flash	IEC60115-1 4.7，Applying an AC VOLTS which the effective value is the maximum load voltage to the electrode and substrate at a rate of approximately 100 V/s, maintaining it for 60 ± 5 s.
Solvent resistance	signage intact	IEC60115-1之4.29，IPA，temperature of a solvent：23±5°C，maintaining 5±0.5min
High temp. & high humidity	No visible damage△R±1% Maximum	Applying 10% of the rated power (current) or the maximum current of the component (whichever is lower) for a duration of 1000 hours in a temperature of 85°C and a humidity of 85% according to MIL-STD-202 method 103
High temperature storage	No visible damage △R±0.5%Maximum	IEC60115-1 4.25.3，1000hours@170°C，without loading current and voltage
Low temperature load	No visible damage △R±0.5%Maximum	IEC60115-1 4.36，cooled from room temperature to -55°C ,no load for 1.5 hours,applying rated power,continuously flowing for 45 minutes,cool for 15 minutes，then recover to room temperature for testing again.
temperature cycle	No visible damage △R±1% Maximum	IEC60115-1 4.19，-55°C@30mins～+155°C@30mins；1000 cycles
load life	No visible damage △R±1.0% Maximum	IEC 60115-1 4.25.1，1000hrs.，70 ℃ ± 2 ℃，rated current, or the maximum current rating of the component (whichever is lower) is applied for 1.5 hours/0.5 hour interruption

Packing specifications and size (mm):



Type	A	B	W	E	F	P0	P1	P2	ΦD0	T	Quantity
2817	4.7	7.25	12	1.75	5.5	4	8	2	1.5	1.5	1000



Reel Type	W	M	A	B	D
7"reel for12mm tape	12.3±0.5	Φ178±2.0	2.0±0.5	Φ13.5±0.5	Φ60.0±1.0

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version update record

Version NO.	update record	person in charge	Issue date
A0	Updated specification version	Sheguang Zhu	18Jan2022
A1	Increase the upper limit of resistance to 100mΩ	Qingke Zeng	05Sep2023
A2	Updated performance metrics	Qingke Zeng	07Oct2023