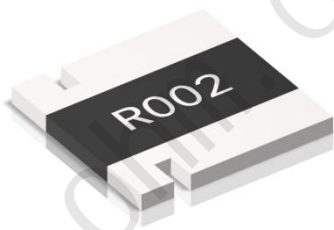


### 4-Terminal Epoxy SMD Chip Precision Alloy Resistor

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

**Features:**

- 4-terminal Kelvin sampling , pure copper electrode, Ideal solution for current detection applications
- high reliability and stability ,superb pulse load capability
- vacuum electron-beam welding craft, full metal structure, 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

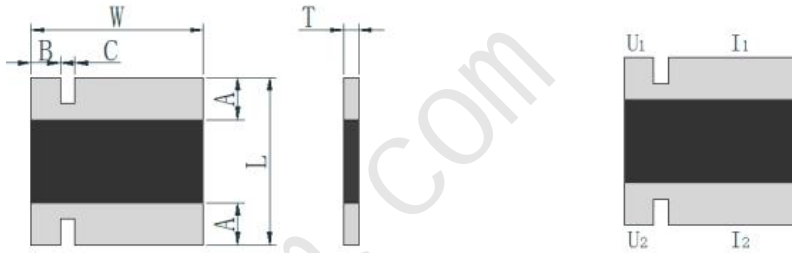


parameter:	
resistance value	0.2 ~ 30mΩ
tolerance	±0.5%(D), ±1%(F), ±5%(J)
TCR	Min.25ppm/°C
temperature range	-55°C ~ +170°C
inductance	0.5nH~5nH
thermal EMF (0-100°C)	<1 μV/°C
power (P <sub>70°C</sub> )	Max.5W

Type Designation: WSKM3637MR002FT0 WSKM3637 manganese copper 2mohm 1% package with tape and reel

W	S	K	M	3	6	3	7	M	R	0	0	2	F	T	0
WSKM E-beam alloy resistor with 4-terminal		size 3637		material M:manganese copper K:Karma F:Fe-Cr-Al		resistance value L200 = 0.2mΩ R002 = 2mΩ R030=30mΩ		tolerance D=±0.5% F=±1% J=±5%		code T0: package with tape and reel B0: without tape and reel Tx: special code(x: 0~9)					

**Dimensions(mm):**

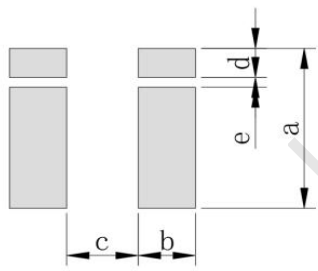


Remark:  
U1 and U2: Voltage-sensing connection  
I1 and I2: current connection

series	resistance value	material	TCR	tolerance	L (mm)	W (mm)	T (mm)	B(mm)	C(mm)	A (mm)
WSKM3637	0.2mΩ	M	±75ppm	±1%(F) ±5%(J)	9.1±0.25	9.4±0.25	0.8±0.25	1.6±0.25	0.82±0.25	3.5±0.25
	0.3mΩ	M	±75ppm							3.2±0.25
	1mΩ	M	±75ppm							2.4±0.25
	2mΩ ~ 30mΩ	K	±25ppm							2.4±0.25
	1mΩ ~ 30mΩ	F	±50ppm							2.4±0.25

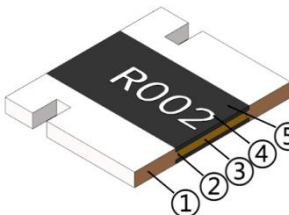
notice: word code marking as silk-screen. In the word code " L " indicate mΩ and " m " also show the position of decimal point, eg: 0m20=0.2mΩ. " R " indicate Ω and also show the position of decimal point. eg: R001 = 1mΩ

**Recommended pad and size(mm):**

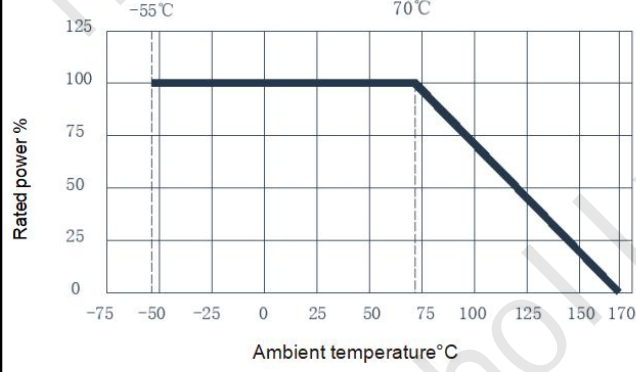


series	resistance value	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)
WSKM3637	0.2mΩ-0.3mΩ	9.9	4.2	1.8	1.8	0.6
	1mΩ ~ 30mΩ	9.9	3.2	4	1.8	0.6

**construction:** **Derating Curve:**



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



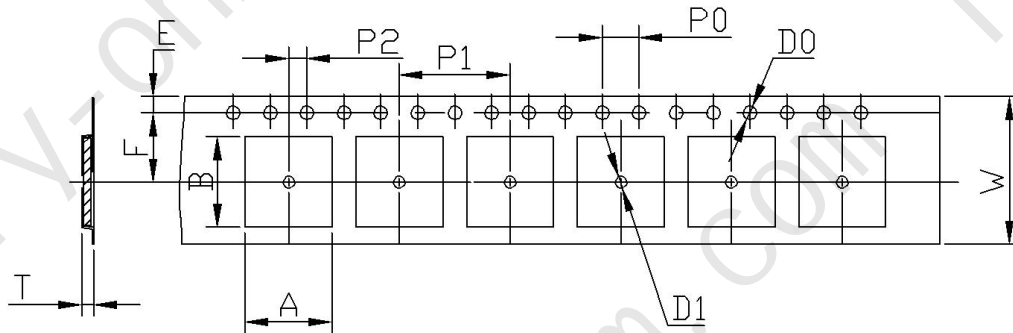
The graph shows the rated power percentage of the resistor as a function of ambient temperature. The power is constant at 100% from -55°C to 70°C. Above 70°C, the power decreases linearly to 0% at 170°C.

Ambient temperature (°C)	Rated power (%)
-55	100
70	100
170	0

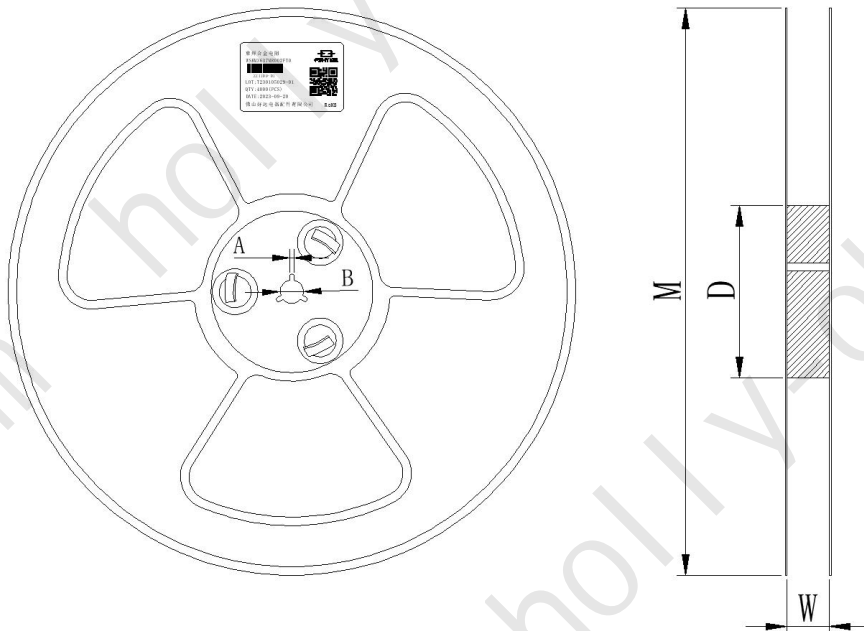
performance indicators:		
Test Item	standard	Test method
TCR	Within specified TCR	IEC60115-1 4.8, measured point 20°C ~ +130°C, reference point +20°C
Solderability	No visible damage 95%covered Minimum	IEC60115-1 4.17, 245°C tin bath, 3s
Short-time overload	No visible damage ΔR±1% Maximum	IEC60115-1 4.13, five times rated power, 5s
Resistance to soldering heat	No visible damage ΔR±0.5% Maximum	IEC60115-1 4.18, 260°C tin bath, maintaining 10s
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-1 is 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 4.29, IPA , temperature of a solvent: 23±5°C, maintaining 5±0.5min
High temp. & high humidity	No visible damage ΔR±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 ΔR±0.5% Maximum	IEC60115-1 4.25.3 , 1000hours@170°C , without loading current and voltage
Low temperature load	No visible damage ΔR±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 $\Delta R \pm 1\%$ Maximum	IEC60115-1 4.19, -55°C@30mins ~ +155°C@30mins; 1000 cycles
load life	No visible damage $\Delta R \pm 1.0\%$ Maximum	IEC 60115-1 4.25.1, 1000hrs., 70 °C ± 2 °C, 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
3637	9.4	9.8	16	1.75	7.5	4	12	2	1.5	1.3	4000



Reel Type	W	M	A	B	D
13" reel for 16mm tape	16.3±0.5	Φ330±2.0	2.0±0.5	Φ13.5±0.5	Φ99.0±1.0

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## version update record

Version NO.	update record	person in charge	Issue date
A0	Updated specification version	Qingke Zeng	22Sep2022
A1	Updated performance metrics	Qingke Zeng	24Oct2023