

SMD E-Beam Welding Alloy Resistor

- Electron-beam welded alloy resistor with pure copper electrodes, an ideal solution for current sensing applications.
- Excellent product consistency, high reliability & stability, and superb pulse load capability.
- Special welding process, full metal structure, heat-resistant epoxy resin molding encapsulation, and strong weather resistance.
- Ultra-low thermal EMF.
- Ultra-low parasitic inductance, fast response speed, suitable for high-frequency AC current detection.
- RoHS compliant & AEC-Q200 compliant



GENERAL SPECIFICATIONS

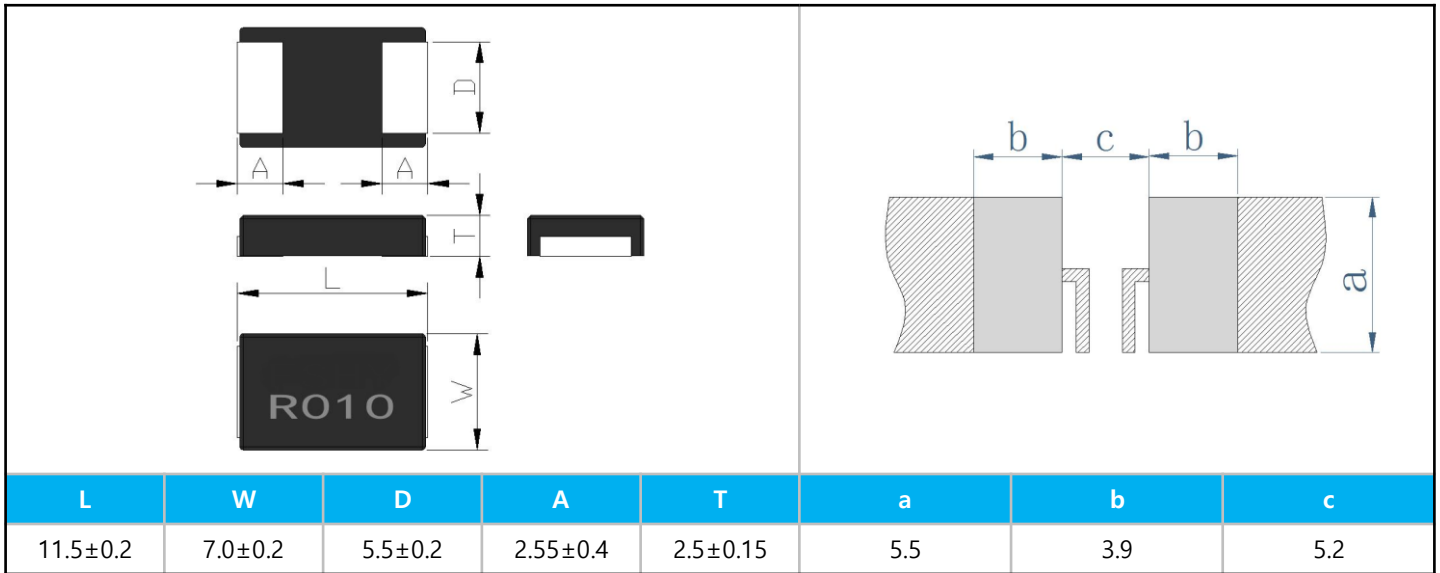
Model	Rated Power (70°C)	Resistance Value (mΩ)	Material	Tolerance	T.C.R (ppm/°C)	Inductance	Thermal EMF (0-100°C)	Temp. Range
RSMD 4527	6W	0.5~1	M	±1%(F)	±100	< 5nH	< 1μV/°C	-55°C ~+170°C
		2~50	K	±5%(J)	±50			

CHARACTERISTICS

Test Item	Standard	Test method
T.C.R	Within specified value	IEC60115-1 4.8 ; Measurement points:20°C +130°C; Reference point: +25°C
Solderability	Minimum 95%	IEC60115-1 4.17; 245°C solder bath, held for 3s
Short time overload	$\Delta R \pm 1\%$	IEC60115-1 4.13; 5 times rated power for 5s
Solder heat resistance	$\Delta R \pm 0.5\%$	IEC60115-1 4.18; 260°C solder bath, held for 10s
Substrate bending test	Within specified value	IEC60115-1 4.33 , 2mm deflection; Holding time: 60+5s
Flammability	Not fully burned ; Thin packing paper not ignited ; Pine board not charred	UL-94 V-0 or V-1 acceptable; No electrical test required
Insulation resistance	Minimum 1000MΩ	IEC60115-1 4.6; Apply 100V DC voltage between electrode and substrate, hold for 60s, then measure insulation resistance
Withstand voltage	No breakdown or arcing	IEC60115-1 4.7; Apply AC voltage (effective value equal to maximum rated voltage) at a rate of approximately 100V/s between electrode and substrate, hold for 60±5s
High temperature & Humidity	$\Delta R \pm 1\%$	MIL-STD-202 Method 103; Apply 10% rated power (current) or component maximum current (whichever is smaller) under 85°C and 85% humidity for 1000 hours
High temperature storage	$\Delta R \pm 1\%$	IEC60115-1 4.25.3 , 1000 hours @ 170°C, no load applied
Low temperature with load	$\Delta R \pm 0.5\%$	IEC60115-1 Clause 4.36: Cool from room temperature to -55°C, hold for 1.5 hours with no load applied; apply rated power for 45 minutes, then cool for another 15 minutes, and test after returning to room temperature
Temperature cycling	$\Delta R \pm 1\%$	IEC60115-1 4.19 , -55°C @ 30 min ~+155°C @ 30 min; 1000 cycles
Load life	$\Delta R \pm 1\%$	IEC 60115-1 4.25.1 , 1000 hours at 70°C±2°C; Rated current or component maximum current (whichever is smaller); 1.5 hours on / 0.5 hours off

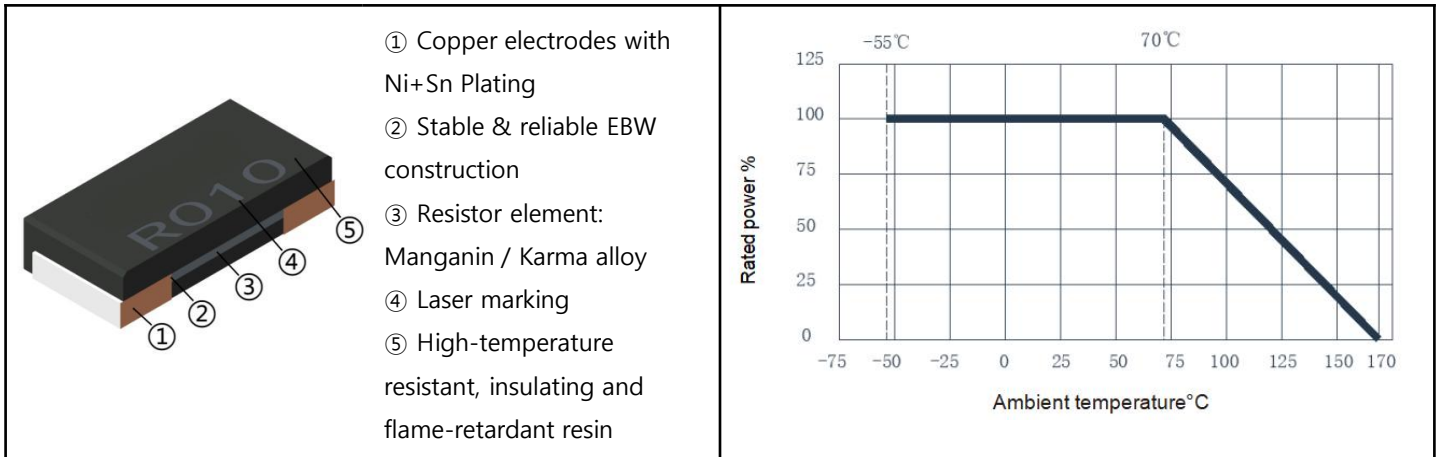
DIMENSIONS[mm]

Recommended pad and size[mm]

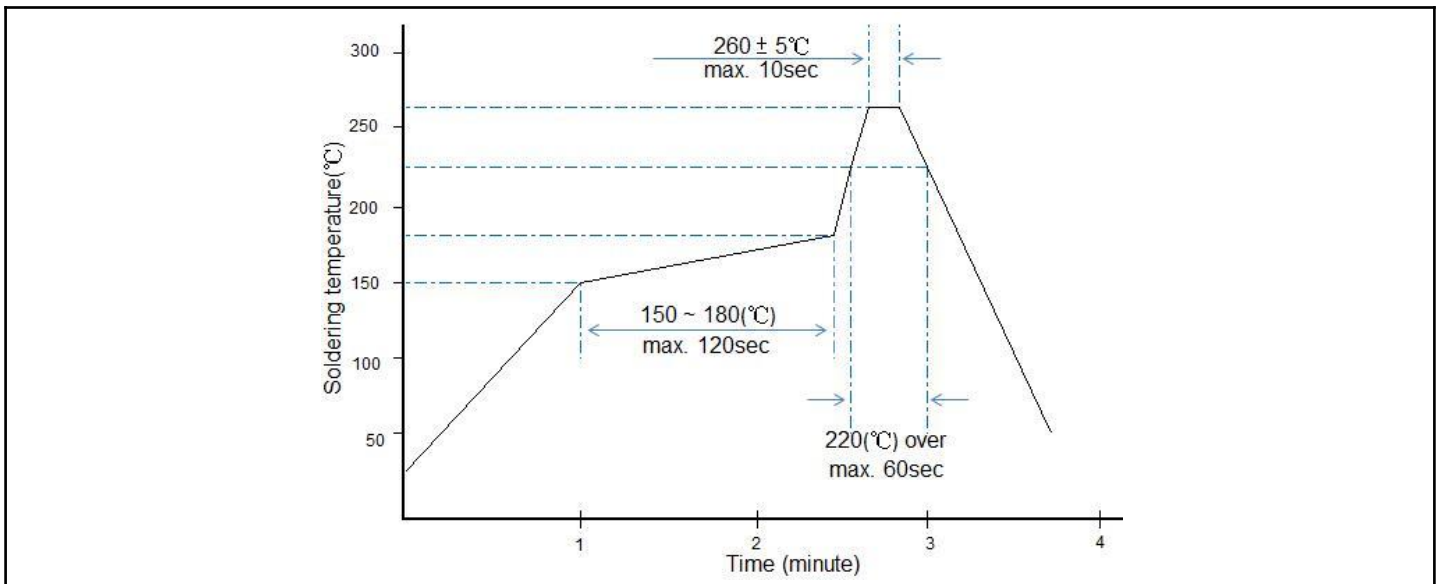


Construction

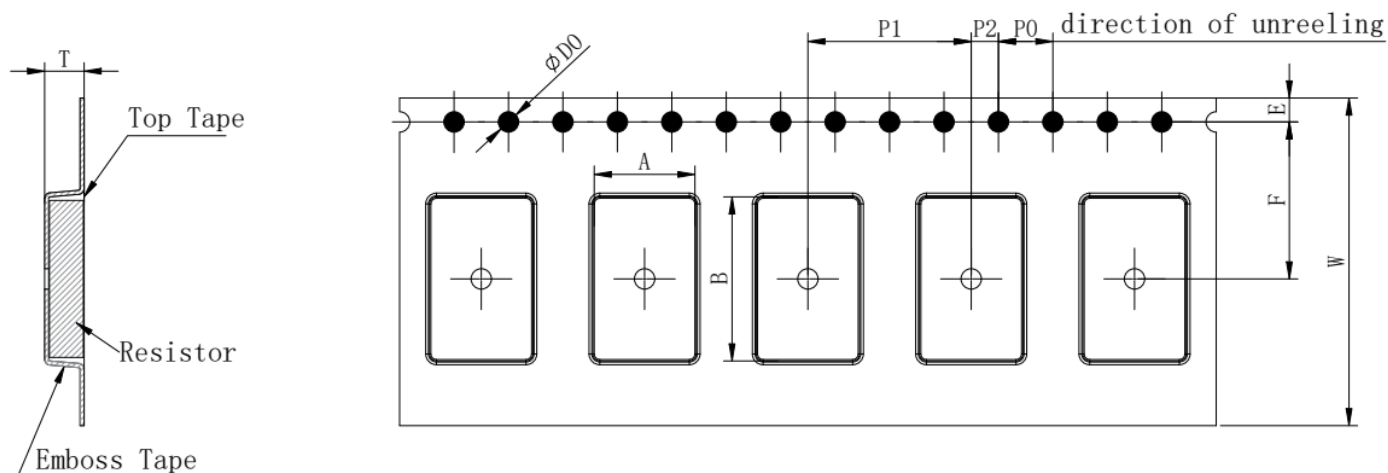
Derating curve



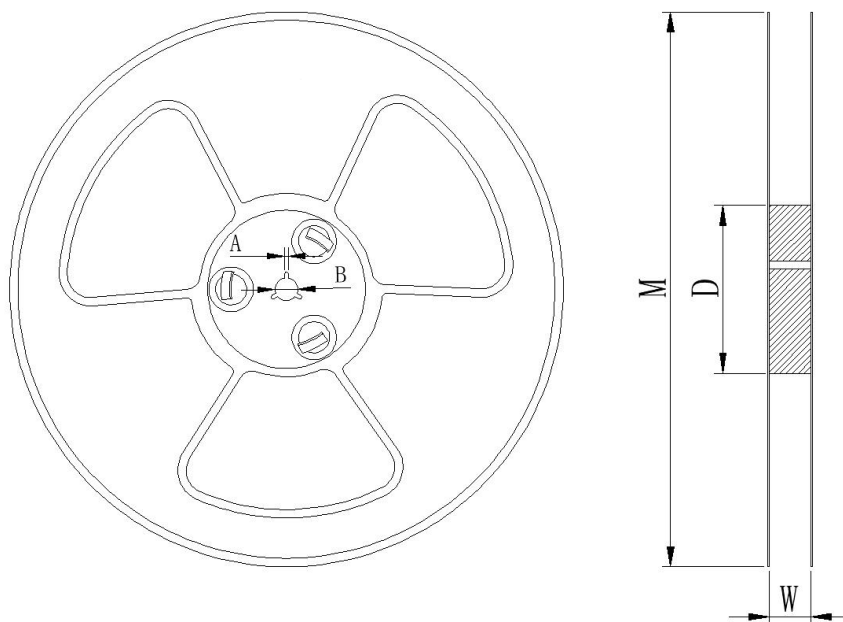
Reflow Soldering Profile



Packing specifications and size [mm]



A	B	W	E	F	P0	P1	P2	ØD0	T	Qty
7.4	12	24	1.75	11.5	4	12	2	1.5	2.9	2,000



Reel Type	W	M	A	B	D
13" reel for 25mm tape	25±0.5	Ø330±2.0	2.0±0.5	Ø13.5±0.5	Ø99.0±1.0

ORDERING PROCEFURE EXAMPLE

Model#	Material	Resistance value	Tolerance	Packing code
RSMD4527	K : Karma M : Manganin	R002 = 2mΩ R010 = 10mΩ R050 = 50mΩ	F = ±1% J = ±5%	T0 : Tape & Reel standard B0 : Bulk packaging