Data Sheet

Customer:	
Product:	**Molding E-Beam Welded Metal Strip Resistor — WMB Series**
Sizes.:	**4527**
Issued Date:	**01-Apr-25**
Edition:	**REV.A4**

RoHS Compliant

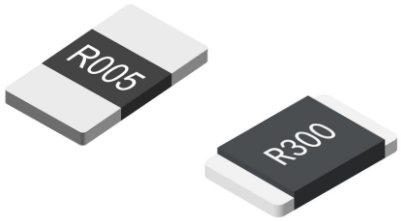
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01-Apr-25	01-Apr-25	01-Apr-25	01-Apr-25	
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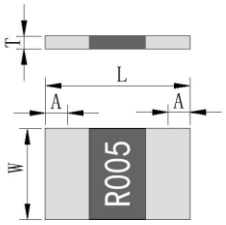
Molding E-Beam Welded Metal Strip Resistor



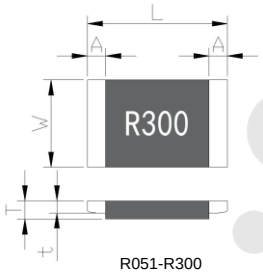
■Features

- E-beam welded metal strip resistors, pure copper Electrodes are the ideal solution for current sensing applications
- Excellent reliability, stability, Auti-pulse capability
- Special welding process, all-metal construction, Supports low resistance , High temperature resistant resin molded encapsulation, strong weather resistance
- Low thermal EMF(<1 μV/°C)
- Ultra-low parasitic inductance(< 5nH) , fast response, can be used for high frequency AC current detection.
- AEC-Q200 Reliability Testing passed
- RoHS compliant

■Dimensions



R0.50-R050



R051-R300

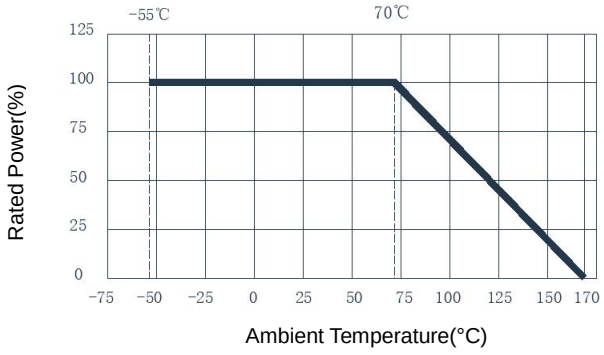
Unit: mm

Type	Size (Inch)	Resistance (mΩ)	Material	L	W	A	T	t
WMB27	4527	0.5	Manganin	11.50±0.20	7.20±0.20	4.10±0.20	1.00±0.15	-
		1	Manganin			3.50±0.20		-
		2 - 50	Kamar			3.50±0.20		-
		51-300	Kamar			1.50±0.20	1.50±0.15	1.00±0.15

■Part Numbering

WMB	27	F	T	D	I	R050	K
Product Type	Dimensions	Resistance Tolerance	Packaging Code	TCR (PPM/°C)	Power Rating	Resistance	Material Code
	27: 4527	F: ±1% J: ±5%	T: Taping Reel	D: ±50 K : ±150	H: 4W I: 6W	0M50: 0.0005Ω R002: 0.002Ω R050: 0.05Ω R100: 0.1Ω R300: 0.3Ω	M: Manganin K: Kamar

■Derating Curve



Molding E-Beam Welded Metal Strip Resistor

■Standard Electrical Specifications

Type	Power Rating	Material	Resistance Range(mΩ)		TCR (PPM/°C)
			±1%	±5%	
WMB27 (4527)	6W	Manganin	0.5		±150
		Manganin	1.0		±150
		Kamar	2 -50		±50
	4W	Kamar	51 -300		±50

■Operating Temperature: -55 ~ +170℃

■Environmental Characteristics

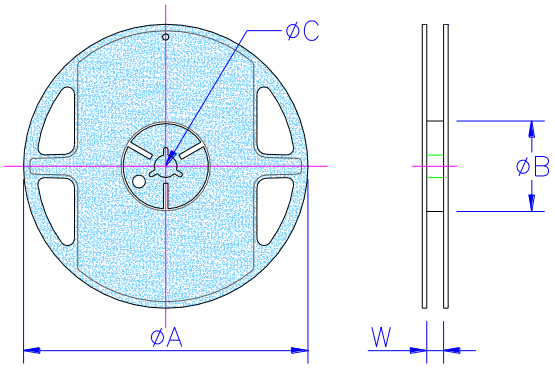
Item	Requirement	Test Method
Temperature Coefficient of Resistance (T.C.R.)	Within the specified value	**IEC60115-1 4.8** Measured value 20℃ and +130℃, reference value +20℃
Solderability	No visible damage, weldable area 95% minimum	**IEC60115-1 4.17** 245°C for 3 seconds
Short time overload	No visible damage, ΔR±1.0% maximum	**IEC60115-1 4.13** 5 times rated voltage, 5 sec
Resistance to solder heat	No visible damage, ΔR±0.5% maximum	**IEC60115-1 4.18** 260℃ for 10 sec
Bending Strength	Within the specified value	**IEC60115-1 4.33** Bending amplitude 2 mm for 60 seconds
Flammability	No ignition of the tissue paper or scorching or the pinewood board	**UL-94** V-0 or V-1 are acceptable. Electrical test not required
Insulation Resistance	>1000MΩ	**IEC60115-1 4.6** Apply a DC voltage of 100V between the electrode and the substrate, keep it for 60 seconds, and then measure the insulation resistance value
Dielectric Withstand Voltage	No breakdown or arcing	**IEC60115-1 4.7** Apply an AC voltage with an effective value of the maximum load voltage between the electrode and the substrate at a speed of about 100V/s, and keep it for 60 seconds
Resistance to solvents	Marking Unsmeared	**IEC60115-1 4.29** IPA, 23±5℃ , 5±0.5 min
Biased Humidity	No visible damage, ΔR±1.0% maximum	**MIL-SRD-202 Method 103** Temperature 85℃, humidity 85% of the conditions applied 10% of the rated power (current) or component limit current (whichever is less), for 1000 hours
High temperature storage	No visible damage, ΔR±1.0% maximum	**IEC60115-1 4.25.3** 1000 hrs @ 170℃, without load
Low temperature load	No visible damage, ΔR±0.5% maximum	**IEC60115-1 4.36** -55℃, No load for 1.5 hour, rated voltage load for 45 min, no load for 15 min
Temperature cycling	No visible damage, ΔR1.0% maximum	**IEC60115-1 4.19** -55℃ @ 30 min ~ room temperature @ <5 min ~ +155℃ @ 30 min, 1000 cycles
Load life	No visible damage, ΔR±1.0% maximum	**IEC60115-1 4.25.1** 1000 h @ 70±2℃, rated current or component limiting current (whichever is smaller), 90 min on, 30 min off

■Storage Temperature: 5°C~35°℃ ; Humidity: 40%~75% RH

■Shelf life: 1 years Max

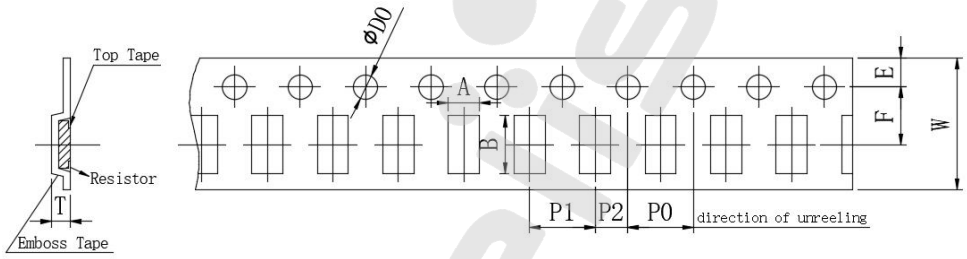
■Packaging

Reel Specifications & Packaging Quantity



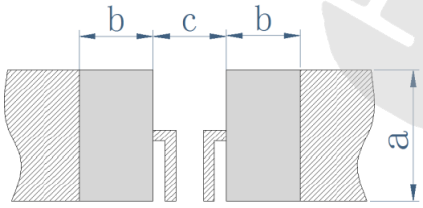
Type	Packaging Quantity		Tape Width	Reel Diameter	ΦA (mm)	ΦB (mm)	ΦC (mm)	W (mm)
WMB27 (R0.50-R050)	Embossed	1K	25mm	7 inch	178.0±2.0	60.0±1.0	13.5±0.5	25.0±0.5
(R051-R300)	Embossed	0.5K						

Embossed Plastic Tape Specifications



Type	A (mm)	B (mm)	W (mm)	E (mm)	F (mm)	P0 (mm)	P1 (mm)	P2 (mm)	ΦD0 (mm)	T (mm)
WMB27 (R0.50-R050)	7.50	11.80	24.00	1.75	11.5	4.00	12.00	2.00	1.50	1.30
(R051-R300)										2.30

■Recommend Land Pattern



Type	a (mm)	b (mm)	c (mm)
WMB27(R0.50)	8.70	5.20	3.00
WMB27(R001-R050)	8.70	5.00	3.50
WMB27(R051-R300)	8.70	3.00	7.50

REVISION HISTORY

REVISION	DATE	CHANGE NOTIFICATION	DESCRIPTION
Version A4	Apr 01,2025		-Add Storage conditions and Shelf life.