

Data Sheet

Customer:

Product: Molding E-Beam Welded Metal Strip Resistor — WMP Series

Sizes.: 2512

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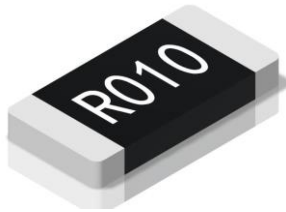
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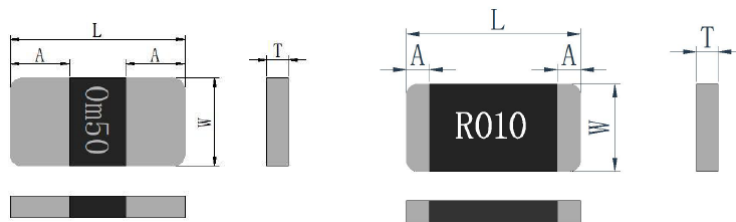
Molding E-Beam Welded Metal Strip Resistor



Features

- E-beam welded metal strip resistors, pure copper Electrodes are the ideal solution for current sensing applications
- Excellent reliability, stability, Anti-pulse capability
- Special welding process, all-metal construction, Supports low resistance , High temperature resistant resin molded encapsulation, strong weather resistance
- Low thermal EMF(<1 $\mu\text{V}/^\circ\text{C}$)
- Ultra-low parasitic inductance < 3nH , fast response, can be used for high frequency AC current detection.
- AEC-Q200 Reliability Testing passed
- RoHS compliant

Dimensions



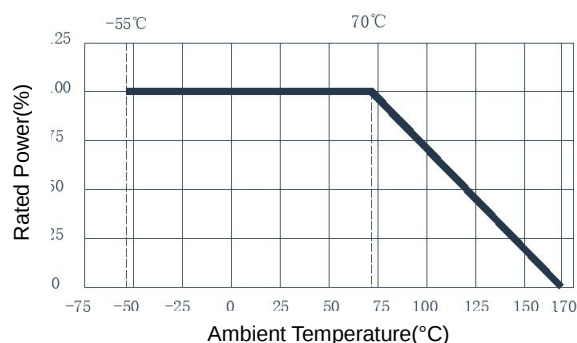
Unit: mm

Type	Size (Inch)	Resistance (m Ω)	Material	L	W	T	A
WMP12	2512	0.5	Manganin	6.40 $\pm$ 0.20	3.20 $\pm$ 0.20	0.80 $\pm$ 0.15	2.30 $\pm$ 0.20
		1 - 2	Manganin				1.50 $\pm$ 0.20
		3 - 4	FeCrAl				1.50 $\pm$ 0.20
		3 - 4	Kamar				1.50 $\pm$ 0.20
		5 - 50	FeCrAl				0.85 $\pm$ 0.20
		5 - 50	Kamar				0.85 $\pm$ 0.20

Part Numbering

WMP	12	F	T	D	R	R003	F
Product Type	Dimensions	Resistance Tolerance	Packaging Code	TCR (PPM/ $^\circ\text{C}$)	Power Rating	Resistance	Material Code
	12: 2512	D: $\pm$ 0.5% F: $\pm$ 1% J: $\pm$ 5%	T: Taping Reel	C: $\pm$ 25 D: $\pm$ 50 E: $\pm$ 100 K: $\pm$ 150	R: 3W	R001: 0.001 Ω R010: 0.01 Ω 0M50: 0.0005 Ω	M: Manganin K: Kamar F: FeCrAl

Derating Curve



Standard Electrical Specifications

Type	Power Rating	Material	Resistance Range(mΩ)			TCR (PPM/°C)
			±0.5%	±1%	±5%	
WMP12 (2512)	3W	Manganin	0.5			±150
		Manganin	1 - 2			±100
		FeCrAl	3 - 4			±50
		Kamar	3 - 4			±50
		FeCrAl	5 - 50			±25
		Kamar	5 - 50			±50

Operating Temperature: -55 ~ +170°C

Environmental Characteristics

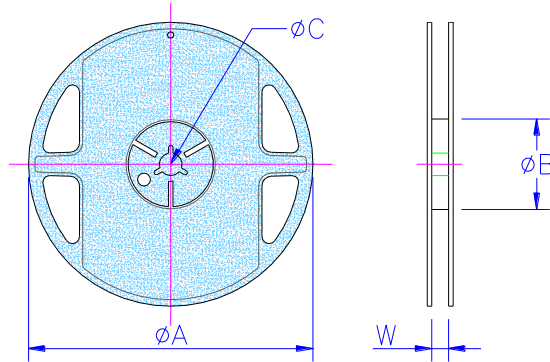
Item	Requirement	Test Method
Temperature Coefficient of Resistance (T.C.R.)	Within the specified value	IEC60115-1 4.8 Measured value 20°C and +130°C, reference value +20°C
Solderability	No visible damage, weldable area 95% minimum	IEC60115-1 4.17 245°C for 3 seconds
Short time overload	No visible damage, 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°C 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 100VDC for 1 minute
Dielectric Withstand Voltage	No breakdown or arcing	IEC60115-1 4.7 Apply 100VAC for 1 minute
Resistance to solvents	Marking Unsmeared	IEC60115-1 4.29 IPA, 23±5°C, 5±0.5 minute
Biased Humidity	No visible damage, ΔR±1.0% maximum	AEC-Q200 Test 7 MIL-SRD-202 Method 103 Temperature 85°C, 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°C, without load
Low temperature load	No visible damage, ΔR±0.5% maximum	IEC60115-1 4.36 -55°C, No load for 1.5 hour, rated voltage load for 45 min, no load for 15 min
Temperature cycling	No visible damage, ΔR±1.0% maximum	IEC60115-1 4.19 -55°C @ 30 min ~ room temperature @ <5 min ~ +155°C @ 30 min, 1000 cycles
Load life	No visible damage, ΔR±1.0% maximum	IEC60115-1 4.25.1 1000 h @ 70±2°C, rated voltage, 90 min on, 30 min off

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

Shelf life: 1 years Max

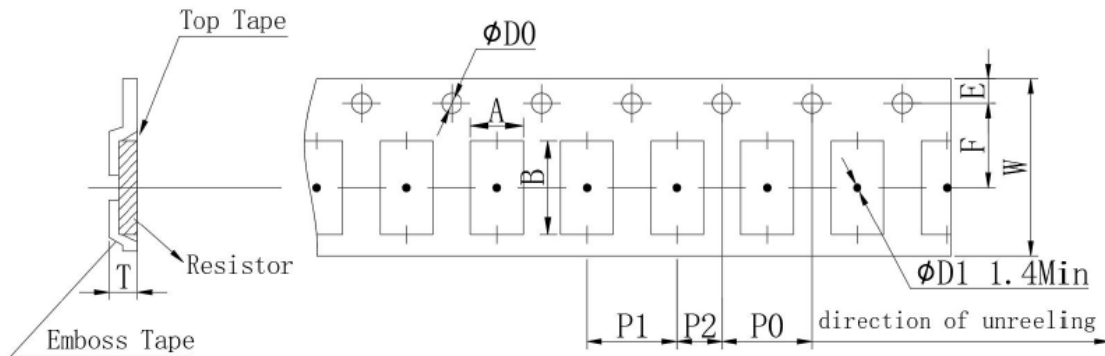
■Packaging

Reel Specifications & Packaging Quantity



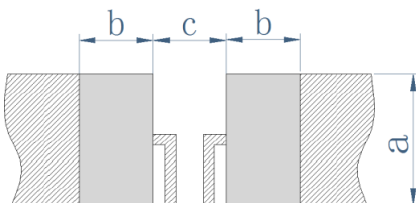
Type	Packaging Quantity	Tape Width	Reel Diameter	ΦA (mm)	ΦB (mm)	ΦC (mm)	W (mm)
WMP12	Embossed 4K	12mm	7 inch	178.0±2.0	60.0±1.0	13.5±0.5	12.3±0.5

Embossed Plastic Tape Specifications



Type	A (mm)	B (mm)	W (mm)	E (mm)	F (mm)	P ₀ (mm)	P ₁ (mm)	P ₂ (mm)	ΦD ₀ (mm)	T (mm)
WMP12	3.50	6.80	12.00	1.75	5.50	4.00	4.00	2.00	1.50	1.20

■Recommend Land Pattern



Type	Resistance Range	a (mm)	b (mm)	c (mm)
WMP12	0.5mΩ	3.7	3.0	1.3
	1mΩ - 4mΩ	3.7	2.3	2.8
	5mΩ - 50mΩ	3.7	1.9	3.6

REVISION HISTORY

<u>REVISION</u>	<u>DATE</u>	<u>CHANGE NOTIFICATION</u>	<u>DESCRIPTION</u>
Version A2	Apr 01,2025		-Add Storage conditions and Shelf life.