Data Sheet

Customer:	
Product:	**Molding E-Beam Welded Metal Strip Resistor — WMP Series**
Sizes.:	**2817**
Issued Date:	**29-Apr-25**
Edition:	**REV.A5**

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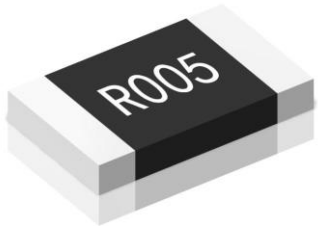
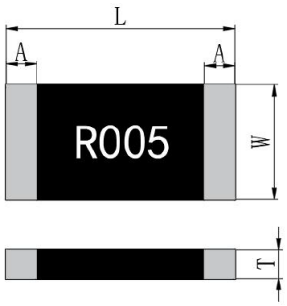
Molding E-Beam Welded Metal Strip Resistor



■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 ; EMV (0-100℃) : <1 μV/°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

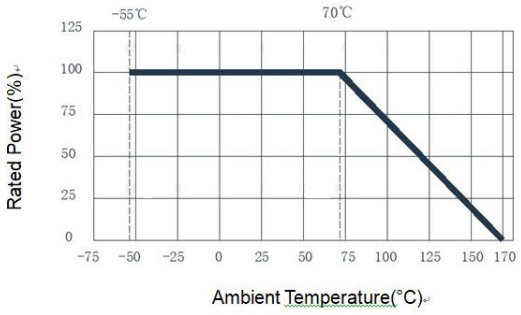
Type	Size (Inch)	Resistance (mΩ)	Material	L	W	T	A
WMP17	2817	1 - 3	Manganin	7.10±0.20	4.30±0.20	1.00±0.15	1.20±0.20
		4 - 100	Kamar				

■Part Numbering

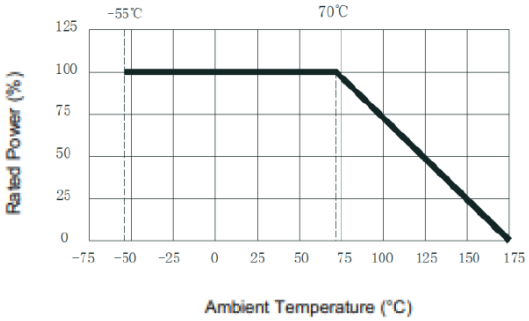
WMP	17	F	T	W	E	R001	M
Product Type	Dimensions	Resistance Tolerance	Packaging Code	TCR (PPM/℃)	Power Rating	Resistance	Material Code
	17: 2817	F: ±1% J: ±5% D:±0.5%	T: Taping Reel	D: ±50 W: ±75	R: 3W H: 4W D: 5W E: 7W	R001: 0.001Ω R010: 0.01Ω R100: 0.1Ω	M: Manganin K: Kamar

■Derating Curve

Standard Derating Curve



High Power Derating Curve



■Standard Electrical Specifications

Type	Power Rating	Material	Resistance Range(mΩ)		TCR (PPM/°C)
			±1%	±5%	
WMP17 (2817)	5W	Manganin	1 - 3		±75
		Kamar	4 - 50		±50
	3W	Kamar	51 - 100		±50

■Operating Temperature: -55 ~ +170℃

■High Power Rating Electrical Specifications

Type	Power Rating	Material	Resistance Range(mΩ)			TCR (PPM/°C)
			±0.5%	±1%	±5%	
WMP17 (2817)	7W	Manganin	1 - 3			±75
		Kamar	4 - 50			±50
	4W	Kamar	51 - 100			±50

■Operating Temperature: -55 ~ +175℃

■Environmental Characteristics

Item	Requirement	Test Method
Temperature Coefficient of Resistance (T.C.R.)	Within the specified value	**IEC60115-1 4.8** Standard: Measured value 20℃ and +130℃, reference value +20℃ High Power: Measured value -55℃ and +130℃, reference value +20℃
Solderability	No visible damage, weldable area 95% minimum	I**EC60115-1 4.17** 245°C for 3 seconds
Short time overload	No visible damage, ΔR±1.0% maximum	**IEC60115-1 4.13** Standard: 5 times rated voltage, 5 sec High Power: 2.5 times rated voltage, 5 sec
Resistance to solder heat	No visible damage, Standard: ΔR±0.5% Maximum High Power: ΔR±1.0% maximum	**IEC60115-1 4.18** Standard: 260℃ for 10 sec High Power: 270℃ 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, Minimum	**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** Standard: IPA, 23±5℃ , 5±0.5min High Power: IPA, 23℃ , 10 hrs

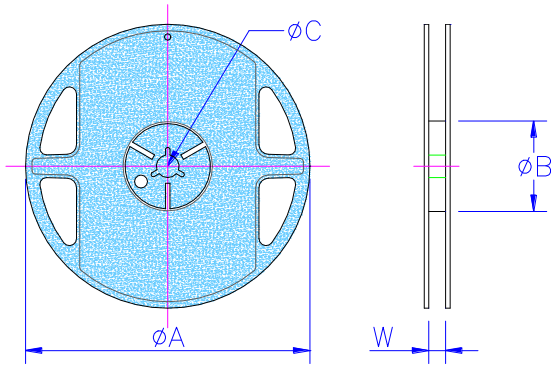
Item	Requirement	Test Method
Biased Humidity	No visible damage, ΔR±1.0% maximum	**AEC-Q200 Test 7** **MIL-SRD-202 Method 103** Temperature 85℃, humidity 85% of the conditions applied 10% of the rated power (current) or component limit current (whichever is less), for 1000 hours
High temperature storage	No visible damage, ΔR±1.0% maximum	**IEC60115-1 4.25.3** 1000 hrs @ 170℃, without load
Low temperature load	No visible damage, Standard: ΔR±0.5% Maximum High Power: ΔR±1.0% maximum	**IEC60115-1 4.36** Standard: -55℃, No load for 1.5 hour, rated voltage load for 45 min, no load for 15 min High Power: -55℃, No load for 1 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** Standard: -55℃ @ 30 min ~ +155℃ @ 30 min, 1000 cycles High Power: -55℃ @ 30 min ~ room temperature @ <5 min ~ +125℃ @ 30 min, 500 cycles
Load life	No visible damage, ΔR±1.0% maximum	**IEC60115-1 4.25.1** 1000 h @ 70±2℃, rated voltage, 90 min on, 30 min off

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

■**Shelf life: 1 years Max**

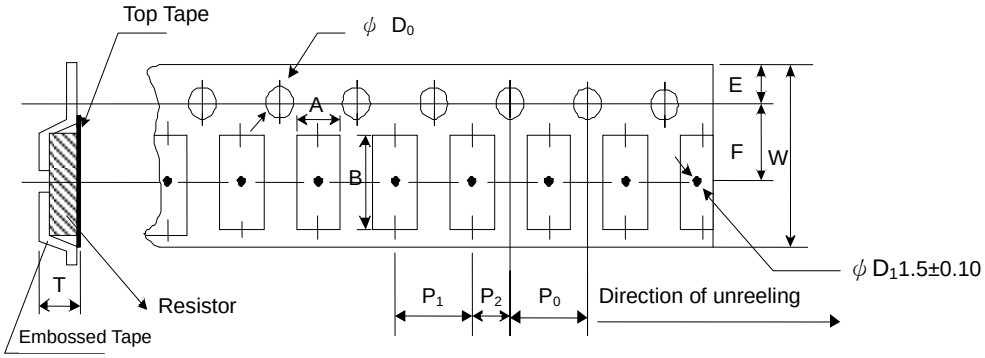
■Packaging

Reel Specifications & Packaging Quantity



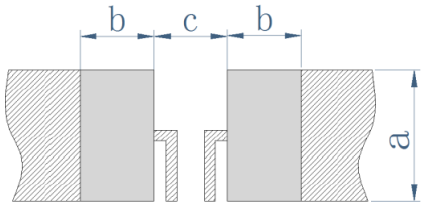
Type	Packaging Quantity		Tape Width	Reel Diameter	ΦA (mm)	ΦB (mm)	ΦC (mm)	W (mm)
WMP17	Embossed	1K	12mm	7 inch	178.0±2.0	60.0±1.0	13.5±0.5	12.3±0.5

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)
WMP17	4.70	7.25	12.00	1.75	5.50	4.00	8.00	2.00	1.50	1.50

■Recommend Land Pattern



Type	a (mm)	b (mm)	c (mm)
WMP17	5.20	2.75	3.50

REVISION HISTORY

REVISION	DATE	CHANGE NOTIFICATION	DESCRIPTION
Version A4	Apr 01 ,2025		-Add Storage conditions and Shelf life. -Add Standard 1-50mΩ specifications. -Modify Standard 51-100mΩ Power Rating 4W→3W
Version A5	Apr 29 ,2025		-Add High Power 51-100mΩ specifications. -Add High Power ±0.5% Tolerance. -Modify Environmental Characteristics.