

Features:

- Metal element resistors
- Tinned copper leads
- Low temperature coefficient
- Molded bodies
- TMR – Kelvin Bridge Test
- MRS high stability version
- Cut and formed product is available on selected sizes - contact Stackpole for details
- 100% RoHS compliant and lead free without exemption
- Halogen free
- REACH compliant



Electrical Specifications					
Type/Code	Power Rating (W) @ 70°C	Short Time Overload	Dielectric Strength	TCR (ppm/°C)	Ohmic Range (Ω) and Tolerance
					1%, 5%
MR1 ⁽²⁾	1	5 seconds at 5 X rated power	500 VAC	± 50 to ± 400 ⁽¹⁾	0.01 - 0.1
MR3 ⁽³⁾	3				0.005 - 0.2
MR5 ⁽⁴⁾	5				0.005 - 0.3
MR10 ⁽⁵⁾	10				0.01 - 0.5
TMR3	3			± 40	0.005 - 0.2
TMR5	5	0.005 - 0.3			

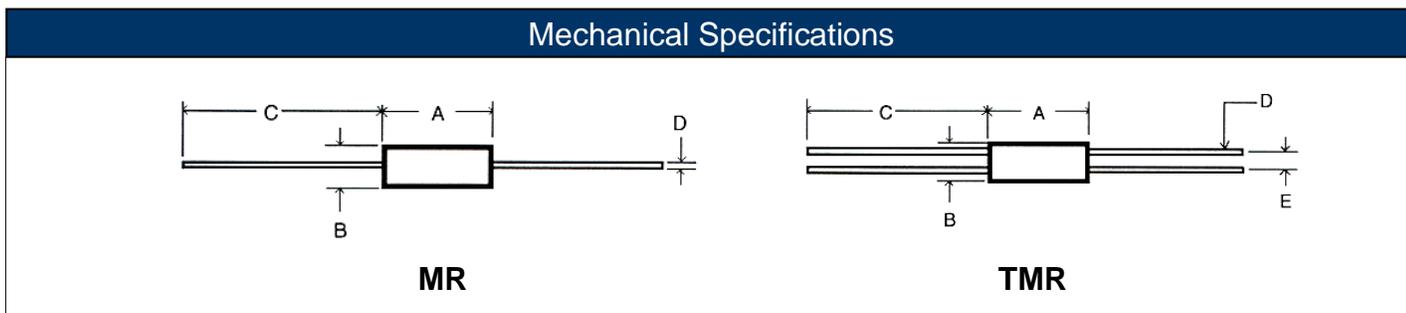
(1) TCR is value dependent. Contact Stackpole for specific data.

(2) MR1 values 0.05Ω and below are non-magnetic and non-inductive. MR1 values ≥ 0.06Ω are ribbon element wound on ceramic core.

(3) MR3 values 0.1Ω and below are non-magnetic and non-inductive. MR3 values ≥ 0.15Ω are ribbon element wound on ceramic core.

(4) MR5 values 0.15Ω and below are non-magnetic and non-inductive. MR5 values ≥ 0.15Ω are ribbon element wound on ceramic core.

(5) MR10 all values are ribbon element wound on ceramic core.



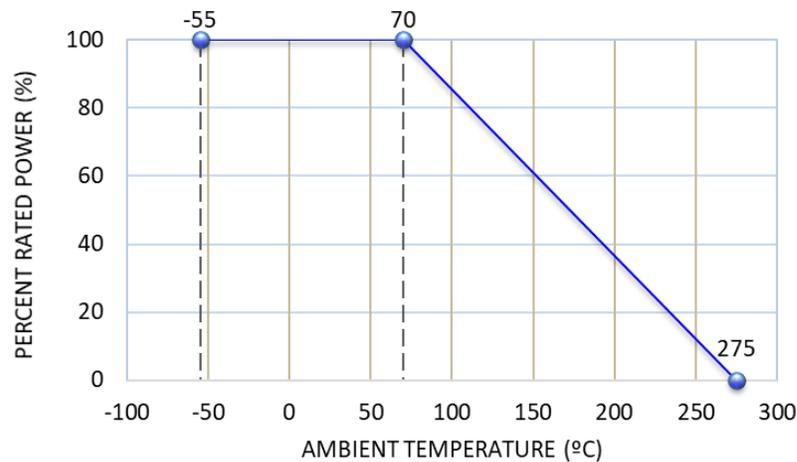
Type/Code	A Body Length	B Body Diameter	C Lead Length (Bulk) ⁽¹⁾	D Lead Diameter	E Lead Spacing (Ref.)	Unit
MR1	0.385 ± 0.015	0.135 ± 0.015	1.375 ± 0.125	0.032 ± 0.002	-	inches
	9.78 ± 0.38	3.43 ± 0.38	34.93 ± 3.18	0.81 ± 0.05		mm
MR3	0.560 ± 0.015	0.205 ± 0.015	1.375 ± 0.125	0.032 ± 0.002		inches
	14.22 ± 0.38	5.21 ± 0.38	34.93 ± 3.18	0.81 ± 0.05		mm
MR5	0.925 ± 0.015	0.330 ± 0.015	1.375 ± 0.125	0.036 ± 0.002		inches
	23.50 ± 0.38	8.38 ± 0.38	34.93 ± 3.18	0.91 ± 0.05	mm	
MR10	1.925 ± 0.015	0.475 ± 0.015	1.375 ± 0.125	0.036 ± 0.002	inches	
	48.90 ± 0.38	12.07 ± 0.38	34.93 ± 3.18	0.91 ± 0.05	mm	
TMR3	0.625 ± 0.015	0.205 ± 0.015	1.375 ± 0.125	0.032 ± 0.002	0.125	inches
	15.88 ± 0.38	5.21 ± 0.38	34.93 ± 3.18	0.81 ± 0.05	3.18	mm
TMR5	0.940 ± 0.015	0.330 ± 0.015	1.375 ± 0.125	0.036 ± 0.002	0.200	inches
	23.88 ± 0.38	8.38 ± 0.38	34.93 ± 3.18	0.91 ± 0.05	5.08	mm

(1) See Packaging Specification for lead length dimension for tape and reel packaged product.

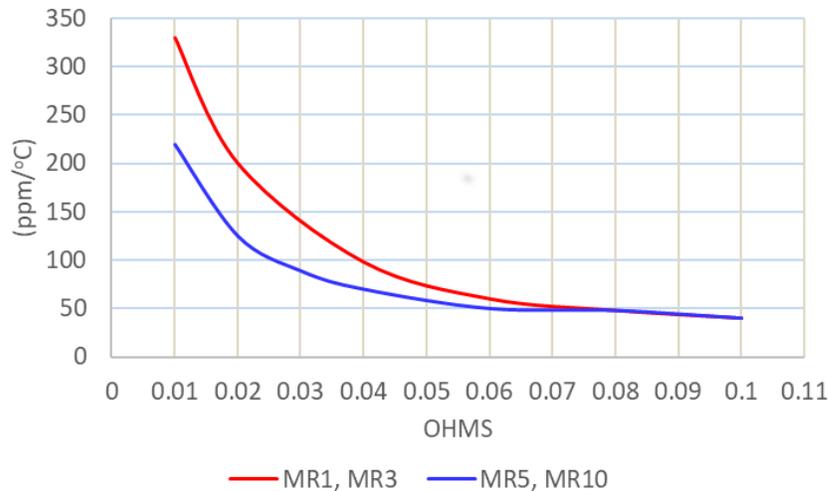
Performance Characteristics	
Test	Test Results
Moisture Resistance	± 5%
Thermal Shock	± 2%
Load Life @ 70°C - 1000 hours	± 5%
Resistance to Soldering Heat	± 2%
Short Time Overload	± 2%
Dielectric Withstanding Voltage	± 2%

Operating Temperature Range: -55°C to +275°C

Power Derating Curve:



TCR X Resistance:



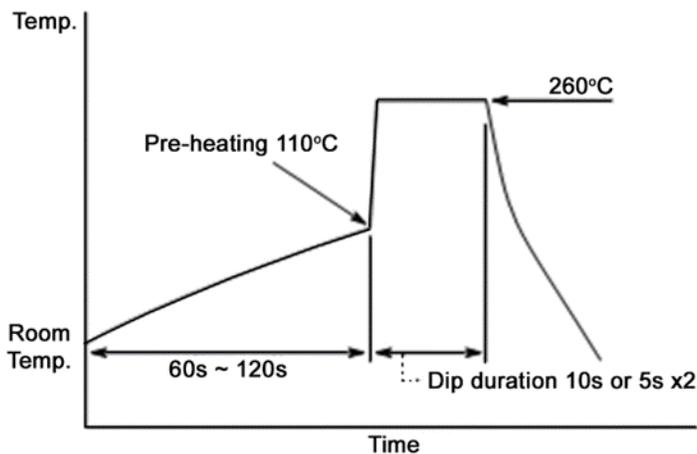
Recommended Soldering Condition

Flow Soldering:

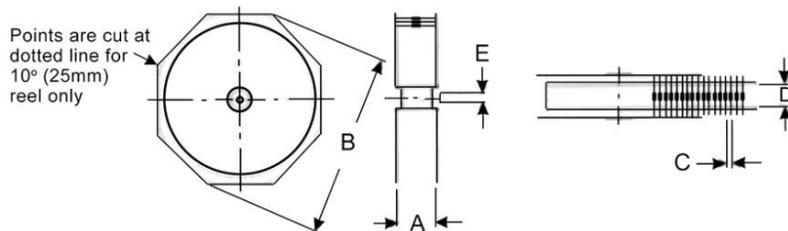
- Pre-heating: 110°C MAX
- Peak temperature/duration: 260°C within 10 seconds (1st, 2nd wave total)
- Temperature profile (see chart on the right)

Iron Soldering:

- 380°C, 5 seconds, once/terminal



Packaging Specifications



Series	Code	A max ⁽¹⁾	B max	C	D ⁽²⁾	Tape	Unit
MR	1	3.311	13.504	0.197 ± 0.020	2.063 ± 0.079	0.250	inches
		84.10	343.00	5.00 ± 0.50	52.40 ± 2.00	6.35	mm
	3	3.484	13.504	0.394 ± 0.020	2.063 ± 0.079	0.250	inches
		88.50	343.00	10.00 ± 0.50	52.40 ± 2.00	6.35	mm
	5	3.850	13.504	0.394 ± 0.020	2.875 ± 0.079	0.250	inches
		97.80	343.00	10.00 ± 0.50	73.03 ± 2.00	6.35	mm
	10	4.764	13.504	0.600 ± 0.020	4.375 ± 0.079	0.250	inches
		121.00	343.00	15.24 ± 0.50	111.13 ± 2.00	6.35	mm

Dimension "E": This is a non-critical dimension that does not have a tolerance in the standard. Range of diameters is from 0.547 inches (13.90 mm) to 1.500 inches (38.10 mm).

- (1) Reference value only. The "A" dimension shall be governed by the overall length of the taped component. The distance between flanges shall be 0.059 inches (1.50 mm) to 0.315 (8.00 mm) greater than the overall component.
- (2) The given dimension "D" expresses the standard width spacing. A 26 mm narrow spacing is available as option "N" packaging code.

RoHS Compliance

Stackpole Electronics has joined the worldwide effort to reduce the amount of lead in electronic components and to meet the various regulatory requirements now prevalent, such as the European Union's directive regarding "Restrictions on Hazardous Substances" (RoHS 3). As part of this ongoing program, we periodically update this document with the status regarding the availability of our compliant components. All our standard part numbers are compliant to EU Directive 2011/65/EU of the European Parliament as amended by Directive (EU) 2015/863/EU as regards the list of restricted substances.

