



## Wirewound Resistors, Industrial Power, Tubular, Metal Case, MCRL



### FEATURES

- High power to size ratio
- Flameproof inorganic compound
- All welded construction
- Heat sink mountable to steel panel at least 10" x 10" x 0.04" (254 mm x 254 mm x 1.02 mm)
- Heat transfer increased by use of thermally conductive grease or epoxy
- Wirewound
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

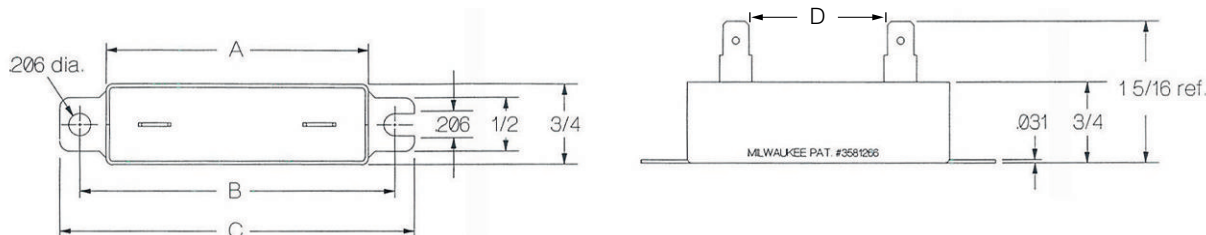


**RoHS**  
COMPLIANT

### STANDARD ELECTRICAL SPECIFICATIONS

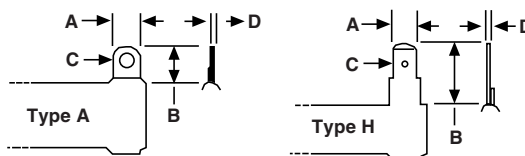
GLOBAL MODEL	HISTORICAL MODEL	POWER RATING WITH HEAT SINK W	POWER RATING WITHOUT HEAT SINK W	RESISTANCE RANGE $\Omega$	TOLERANCE $\pm$ %	TERMINAL STYLE
MCRL0045	12M16	45	20	1.1 to 2750	5, 10	A
MCRL0070	12M40	70	40	0.2 to 22K	5, 10	H
MCRL0100	12M59	100	50	0.2 to 66K	5, 10	H
MCRL0125	12M89	125	65	0.25 to 76K	5, 10	H

### DIMENSIONS in inches (millimeters)



GLOBAL MODEL	A	B	C	D DISTANCE BETWEEN TERMINAL (REF.)		WEIGHT (TYP.) g
MCRL0045	1 (25.4)	1.438 (36.513)	1.875 (47.625)	5/16	0.312	33
MCRL0070	2.5 (63.5)	3 (76.2)	3.375 (85.725)	1 1/4	1.25	77
MCRL0100	3.688 (93.675)	4.125 (104.775)	4.563 (115.90)	2 7/16	2.44	108
MCRL0125	5.562 (141.275)	6 (152.4)	6.438 (163.525)	4 1/8	4.12	185

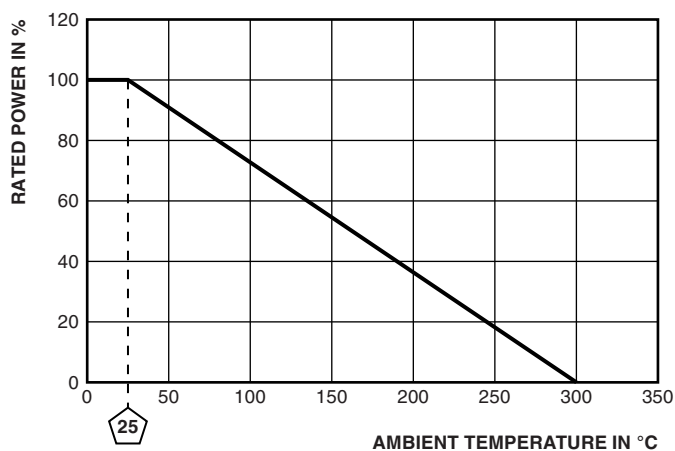
### TERMINAL STYLE in inches (millimeters)



DIMENSIONS	A (3/16" LUG)	H (1/4" SQC)
Width (A)	0.1875 (4.7625)	0.25 (6.35)
Height (B)	0.375 (9.525)	0.625 (15.875)
Diameter (C)	0.13 (3.302)	0.065 (1.651)
Thickness (D)	0.02 (0.508)	0.032 (0.8128)

**TECHNICAL SPECIFICATIONS**

PARAMETER	UNIT	RESISTOR CHARACTERISTICS
Power rating	W	20 to 125
Resistance range	$\Omega$	0.2 to 76K
Resistance tolerance	%	5 for above 1 $\Omega$ , 10 for below 1 $\Omega$
TCR	ppm/°C	$\pm 400$ , $\pm 180$ , $\pm 130$ , $\pm 20$ (varies by wattage and resistance)
Operating temperature	°C	-40 to +300
Temperature rise	°C	275 above an ambient of 25 °C
Maximum altitude	f.a.s.l. (m.a.s.l.)	derate above 4921 f.a.s.l. (1500 m.a.s.l.)
Short-term overload (surge)		10 x rated power for 5 s
Surge windings		available
Maximum working voltage		$(P \times R)^{1/2}$
Insulation resistance	$\Omega$	1M
Dielectric voltage	V <sub>RMS</sub>	up to 1500 (upon request)
Creepage	inch (mm)	0.50 (12.7) typical
Terminal sleeves		available for all sizes, increases creepage distance for 600 V applications
Inductance	$\mu$ H	0.2 to 800 (varies by wattage and resistance)
Non-inductive winding		available
Terminal strength	lb	n/a
Electrical or mechanical customization		available: <a href="http://www.vishay.com/doc?31859">www.vishay.com/doc?31859</a>

**DERATING CURVE****MATERIAL SPECIFICATIONS**

Element	copper-nickel, nickel-chrome, iron-chrome-aluminum
Core	electrical porcelain
Potting compound	electrical cement or special high temperature silicone
Standard terminals	stainless steel
Part marking	value, date code, MRC



### GLOBAL PART NUMBER INFORMATION

Global Part Numbering example: MCRL007022K00JHB00 (MCRL0070 22K 5 % 1/4SQC B)

<b>M</b>	<b>C</b>	<b>R</b>	<b>L</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>K</b>	<b>0</b>	<b>0</b>	<b>J</b>	<b>H</b>	<b>B</b>	<b>0</b>	<b>0</b>
MODEL (3 digits)			TYPE (1 digit)		SIZE (4 digits)		VALUE (5 digits)		TOLERANCE (1 digit)		TERMINAL (1 digit)		PACKAGING (1 digit)		SPECIAL (2 digits)		
<b>MCR</b>			<b>L</b> = Cement		<b>0045</b> = 45 W <b>0100</b> = 100 W  Available sizes: 0045 0070 0100 0125		<b>R</b> = Decimal <b>K</b> = Thousand <b>R1500</b> = 0.15 $\Omega$ <b>1K500</b> = 1.5 k $\Omega$  Check datasheet for available value range		<b>J</b> = $\pm 5.0$ % <b>K</b> = $\pm 10$ %		<b>A</b> = 3/16" lug (3/16L) <b>B</b> = A extended length (3/16XL) <b>H</b> = 1/4" single quick-connect (1/4SQC)		<b>B</b> = Bulk		<b>00</b> = Standard <b>NI</b> = Non-inductive <b>SW</b> = Surge winding		



## Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and/or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.

## Material Category Policy

**Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as RoHS-Compliant fulfill the definitions and restrictions defined under Directive 2011/65/EU of The European Parliament and of the Council of June 8, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EEE) - recast, unless otherwise specified as non-compliant.**

**Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.**

**Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as Halogen-Free follow Halogen-Free requirements as per JEDEC JS709A standards. Please note that some Vishay documentation may still make reference to the IEC 61249-2-21 definition. We confirm that all the products identified as being compliant to IEC 61249-2-21 conform to JEDEC JS709A standards.**