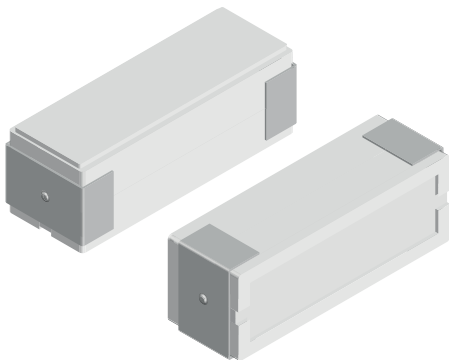




Wirewound Resistors, Commercial Power, Surface Mount



FEATURES

- High wattage in a SMD package
- Meets or performs better than EIA-RS-344 requirements
- Special inorganic potting compound and ceramic case provide high thermal conductivity in a fireproof package
- Superior surge capability
- Direct mounting on printed circuit board

Please reference the Vishay Dale closest equivalent: SM-5 (www.vishay.com/doc?31812).

Notes

- There may be slight differences between the CP002M product and the SM-5 product.
- See the cross-reference file for a complete list of differences and part number crosses:
www.vishay.net/files/Cross-Reference%20Data%20-%20PTN-DR-018-2015%20Rev%200.pdf.

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	HISTORICAL MODEL	POWER RATING $P_{40^{\circ}\text{C}}$ W	RESISTANCE RANGE Ω	TOLERANCE $\pm \%$	WEIGHT (typical) g
CP002M	CP-2M	4	0.1 to 2.74K	1, 3, 5, 10	1.6

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	CP002M RESISTOR CHARACTERISTICS
Temperature Coefficient	ppm/ $^{\circ}\text{C}$	± 50 1.0 Ω and above, ± 90 below 1.0 Ω
Short Time Overload	-	See Performance table
Dielectric Withstanding Voltage	V_{AC}	1000
Maximum Working Voltage	V	$(P \times R)^{1/2}$
Operating Temperature Range	$^{\circ}\text{C}$	-65 to +175

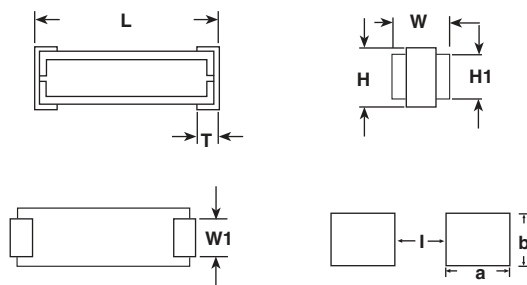
PART NUMBER AND PRODUCT DESCRIPTION

Global Part Number example: CP002M15R00JB37

C	P	0	0	2	M	1	5	R	0	0	J	B	3	7			
GLOBAL MODEL CP002M						VALUE R = decimal K = thousand R1500 = 0.15 Ω 1K500 = 1.5 k Ω			TOLERANCE F = $\pm 1.0 \%$ H = $\pm 3.0 \%$ J = $\pm 5.0 \%$ K = $\pm 10 \%$			PACKAGING B37 = tin/lead, bulk P07 = tin/lead, tube		SPECIAL (dash number) (up to 3 digits) from 1 to 999 as applicable			

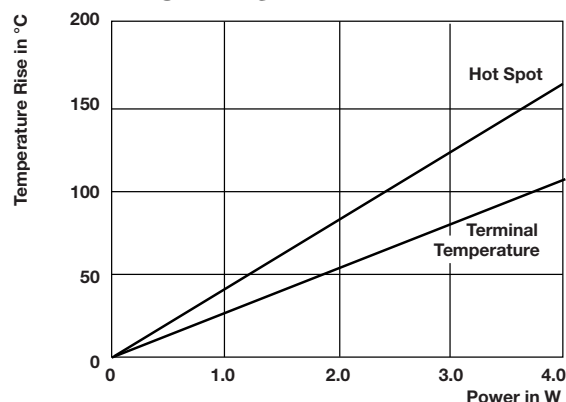
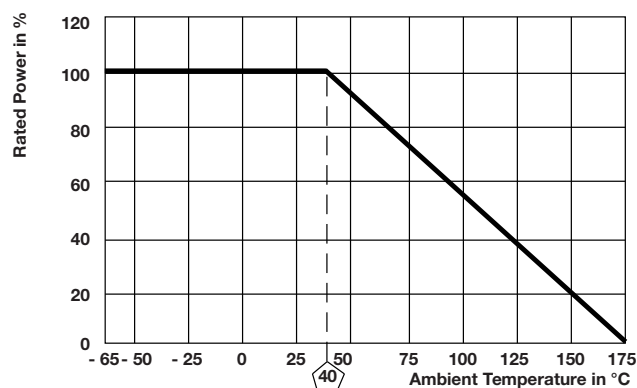
Historical Part Numbering example: CP-2M 15 Ω 5 % B37

CP-2M	15 Ω	5 %	B37
HISTORICAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING

**DIMENSIONS** in inches [millimeters]

MODEL	DIMENSIONS in inches [millimeters]					
	L ± 0.032 [0.813]	W ± 0.032 [0.813]	H ± 0.032 [0.813]	W ₁ ± 0.010 [0.254]	H ₁ ± 0.032 [0.813]	T ± 0.010 [0.254]
CP002M	0.712 [18.08]	0.250 [6.35]	0.262 [6.65]	0.170 [4.32]	0.250 [6.35]	0.100 [2.54]

MODEL	SOLDER PAD DIMENSIONS in inches [millimeters]		
	a	b	l
CP002M	0.280 [7.11]	0.200 [5.08]	0.460 [11.68]

TEMPERATURE RISE**DERATING****MATERIAL SPECIFICATIONS**

Element: copper-nickel alloy or nickel-chrome alloy depending on resistance value

Core: alumina ceramic

Body: steatite ceramic case with inorganic potting compound

Terminals: high temperature solder dipped copper

Part Marking: DALE, model, wattage, value, tolerance, date code

PERFORMANCE		
TEST	CONDITIONS OF TEST	TEST LIMITS
Thermal Shock	-55 °C to +150 °C, 5 cycles, 15 min at each extreme	± (0.2 % + 0.05 Ω) ΔR
Short Time Overload	3.5 x rated power for 5 s 5 x rated power for 5 s	± (0.5 % + 0.05 Ω) ΔR ± (4.0 % + 0.05 Ω) ΔR
Low Temperature Storage	-65 °C for 24 h	± (0.2 % + 0.05 Ω) ΔR
High Temperature Condition	1000 h at +175 °C	± (0.5 % + 0.05 Ω) ΔR
Insulation Resistance	MIL-STD-202, method 302, 100 V	1000 MΩ min.
Mechanical Shock	100 g's for 11 ms, 5 pulses	± (0.1 % + 0.05 Ω) ΔR
Vibration	Frequency varied 10 Hz to 500 Hz in one min, 3 directions, 9 h	± (0.1 % + 0.05 Ω) ΔR
Load Life	1000 h at rated power, +40 °C, 1.5 h "ON", 0.5 h "OFF"	± (1.0 % + 0.05 Ω) ΔR
Resistance to Solder Heat	+260 °C solder, 10 s to 12 s dwell, 25 mm/s emergence	± (0.5 % + 0.05 Ω) ΔR
Bias Humidity	+85 °C, 85 % RH, 10 % bias, 1000 h	± (1.0 % + 0.05 Ω) ΔR



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.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Vishay products are not designed for use in life-saving or life-sustaining applications or any application in which the failure of the Vishay product could result in personal injury or death unless specifically qualified in writing by Vishay. 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.