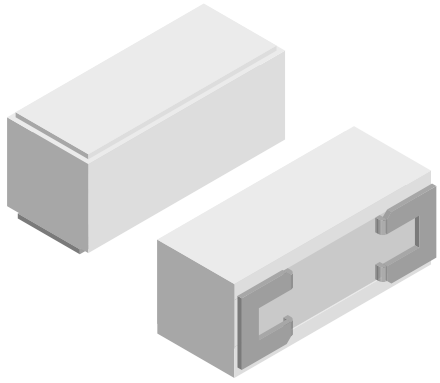
Wirewound/Metal Oxide Resistors, Commercial Power, Surface Mount



FEATURES

- Direct mounting on printed circuit board
- High wattage capabilities, low board temperatures
- Meets or exceeds EIA-RS-344 requirements
- Special inorganic potting compound and ceramic case provide high thermal conductivity in a fireproof package
- Superior surge capability
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb-free

e3

RoHS COMPLIANT

HALOGEN FREE GREEN (5-2008)

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	HISTORICAL MODEL	POWER RATING $P_{40\,°C}$ W	RESISTANCE RANGE Ω WIREWOUND	RESISTANCE RANGE Ω METAL OXIDE	TOLERANCE ± %	WEIGHT (typical) g
CPSM03	CPSM-3	3	0.1 to 100	-	5, 10	5.5
CPSM05	CPSM-5	5	0.1 to 100	110 to 33K	5, 10	6.5

Note

- E24 decade values are available, although others may be available upon request

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	CPSM RESISTOR CHARACTERISTICS
Temperature Coefficient	ppm/°C	± 400
Short Time Overload	-	5 x rated power for 5 s
Maximum Working Voltage	V	$(P \times R)^{1/2}$
Terminal Strength	lb	10 minimum
Operating Temperature Range	°C	-65 to +275 for wirewound, -65 to +225 for metal oxide

GLOBAL PART NUMBER INFORMATION

Global Part Numbering Example: CPSM0315R00JE31

C	P	S	M	0	3	1	5	R	0	0	J	E	3	1			

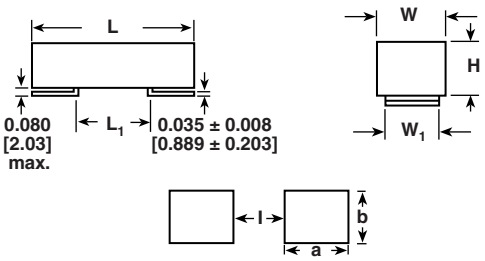
GLOBAL MODEL	VALUE	TOLERANCE	PACKAGING	SPECIAL
CPSM03 **CPSM05**	**R** = decimal **K** = thousand **R1500** = 0.15 Ω **100R0** = 100 Ω **1K000** = 1 kΩ	**J** = ± 5.0 % **K** = ± 10 %	**E31** = lead (Pb)-free, 4 layer bulk	(dash number) (up to 3 digits) from **1 to 999** as applicable

Historical Part Numbering Example: CPSM-3 15 Ω 5 % E31

CPSM-3	15 Ω	5 %	E31
HISTORICAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING

For technical questions, contact: ww2bresistors@vishay.com

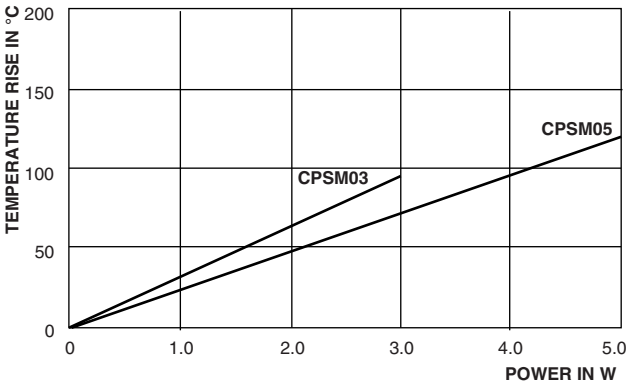
DIMENSIONS



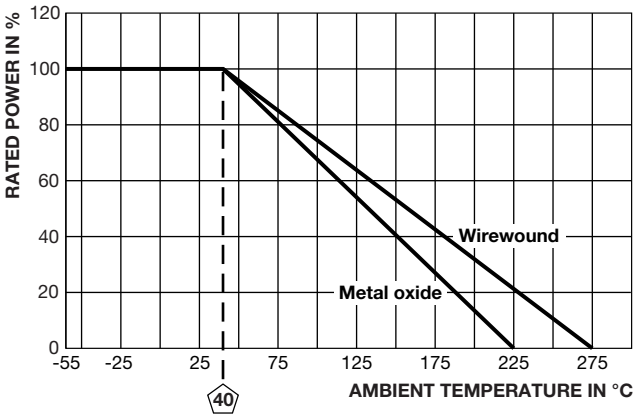
MODEL	DIMENSIONS in inches [millimeters]				
	L ± 0.059 [1.50]	W ± 0.039 [0.99]	L_1 ± 0.059 [1.50]	W_1 ± 0.016 [0.406]	H ± 0.039 [0.99]
CPSM03	0.944 [23.98]	0.354 [8.99]	0.492 [12.50]	0.287 [7.29]	0.354 [8.99]
CPSM05	1.10 [27.94]	0.394 [10.01]	0.590 [14.99]	0.287 [7.29]	0.394 [10.01]

MODEL	SOLDER PAD DIMENSIONS in inches [millimeters]		
	a	b	l
CPSM03	0.420 [10.67]	0.340 [8.64]	0.380 [9.65]
CPSM05	0.440 [11.18]	0.340 [8.64]	0.490 [12.45]

TEMPERATURE RISE



DERATING



MATERIAL SPECIFICATIONS	
Element	Wirewound = copper-nickel alloy or nickel-chrome alloy, depending on resistance value; metal oxide = high temperature fired metal oxide film
Core	Ceramic
Body	Steatite ceramic case with cement potting compound
Terminals	Tin plated steel
Part Marking	Dale, model, wattage, value, tolerance, date code

PERFORMANCE		
TEST	CONDITIONS OF TEST	TEST LIMITS
Thermal Shock	-55 °C to +275 °C (+225 °C for metal oxide), 5 cycles, 30 min dwell time	± (5.0 % + 0.05 Ω) ΔR
Short Time Overload	5 x rated power for 5 s	± (4.0 % + 0.05 Ω) ΔR
Dielectric Withstanding Voltage	1000 V_{RMS} for 1 min	± (2.0 % + 0.05 Ω) ΔR
Low Temperature Operation	-65 °C, full rated working voltage for 45 min	± (3.0 % + 0.05 Ω) ΔR
Humidity	75 °C, 90 % to 100 % RH, 240 h	± (5.0 % + 0.05 Ω) ΔR
Load Life	1000 h at rated power, +40 °C, 1.5 h “ON”, 0.5 h “OFF”	± (10.0 % + 0.05 Ω) ΔR
Terminal Strength	5 pounds for 30 s; body twisted about axis, 3 x 360° rotations	± (2.0 % + 0.05 Ω) ΔR
Resistance to Solder Heat	Terminal immersed 3.5 s in molten solder at 1/8" to 3/16" from body	± (4.0 % + 0.05 Ω) ΔR

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