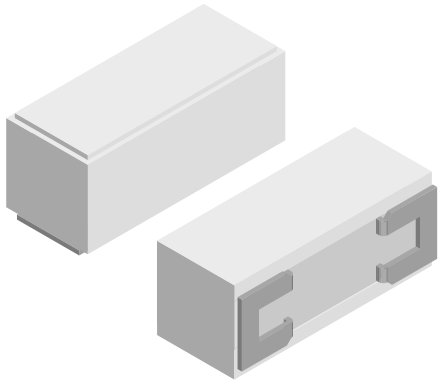
Wirewound Resistors, Commercial Power, Surface Mount



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
- Compliant to RoHS Directive 2002/95/EC

Pb-free Available

e3

RoHS* COMPLIANT

GREEN (5-2008)** Available

Notes

* Pb containing terminations are not RoHS compliant, exemptions may apply

** Please see document "Vishay Material Category Policy": www.vishay.com/doc?99902

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	HISTORICAL MODEL	POWER RATING $P_{40\,°C}$ W	RESISTANCE RANGE Ω	TOLERANCE ± %	WEIGHT (typical) g
CPSM03	CPSM-3	3	0.1 to 1K	5, 10	5.5
CPSM05	CPSM-5	5	0.1 to 1K	5, 10	6.5

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	CPSM RESISTOR CHARACTERISTICS
Temperature Coefficient	ppm/°C	± 300 for 1.0 Ω and above; ± 600 below 1.0 Ω
Short Time Overload	-	5 x rated power for 5 s
Operating Temperature	°C	- 65 to + 275
Dielectric Withstanding Voltage	V_{AC}	1000
Maximum Working Voltage	V	$(P \times R)^{1/2}$

GLOBAL PART NUMBER INFORMATION

Global Part Numbering example: CPSM0315R00JB31

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

GLOBAL MODEL	VALUE	TOLERANCE	PACKAGING	SPECIAL
CPSM03 **CPSM05**	**R** = Decimal **K** = Thousand **R1500** = 0.15 Ω **100R0** = 100 Ω **1K000** = 1 kΩ	**H** = ± 3.0 % **J** = ± 5.0 % **K** = ± 10 %	**E31** = Lead(Pb)-free, 4 layer bulk **B31** =Tin/lead, 4 layer bulk	(Dash number) (Up to 3 digits) From **1 to 999** as applicable

Historical Part Numbering example: CPSM-3 15 Ω 5 % B31

CPSM-3	15 Ω	5 %	B31
HISTORICAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING

For technical questions, contact: ww2aresistors@vishay.com
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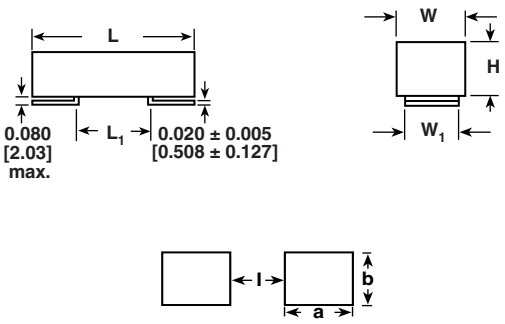
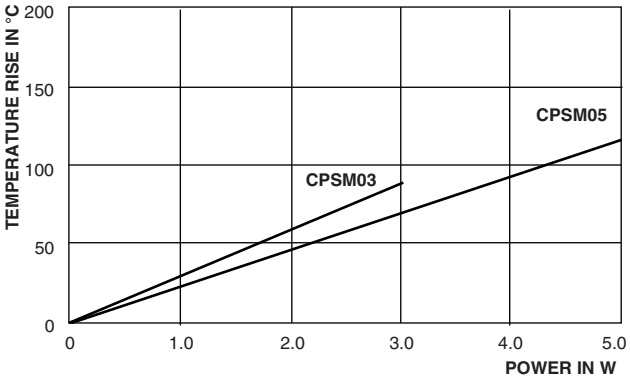
DIMENSIONS



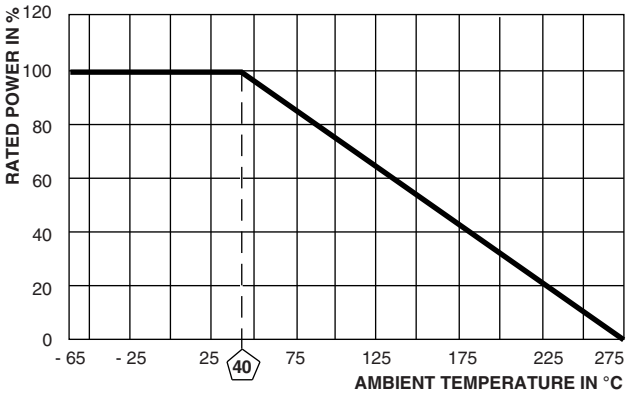
MODEL	DIMENSIONS in inches [millimeters]				
	L ± 0.032 [0.813]	W ± 0.031 [0.787]	L_1 ± 0.062 [1.57]	W_1 + 0.032 [0.813] - 0.012 [0.305]	H ± 0.031 [0.787]
CPSM03	0.906 [23.01]	0.374 [9.50]	0.480 [12.19]	0.287 [7.29]	0.374 [9.50]
CPSM05	1.060 [26.92]	0.374 [9.50]	0.590 [14.99]	0.287 [7.29]	0.374 [9.50]

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	Copper-nickel alloy or nickel-chrome alloy, depending on resistance value
Core	Woven fiberglass
Body	Steatite ceramic case with inorganic potting compound
Terminals	Tin/lead plated steel (lead (Pb)-free version will be 100 % tin)
Part Marking	DALE, model, wattage, value, tolerance, date code

PERFORMANCE		
TEST	CONDITIONS OF TEST	TEST LIMITS (EIA RS-344)
Thermal shock	- 55 °C to + 165 °C, 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 one 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
Resistance to solder heat	+ 260 °C solder, 10 s to 12 s dwell, 25 mm/s emergence	± (4.0 % + 0.05 Ω) ΔR

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