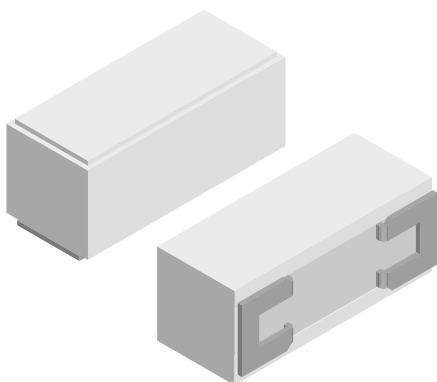


## Wirewound Resistors, Commercial Power, Surface Mount



### 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



**RoHS\***  
COMPLIANT  
**GREEN**  
(5-2008)\*\*  
Available

### STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	HISTORICAL MODEL	POWER RATING $P_{40^{\circ}\text{C}}$ W	RESISTANCE RANGE $\Omega$ $\pm 5\%, \pm 10\%$
CPSM03	CPSM-3	3	0.1 to 1K
CPSM05	CPSM-5	5	0.1 to 1K

### TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	CPSM RESISTOR CHARACTERISTICS
Temperature coefficient	ppm/ $^{\circ}\text{C}$	$\pm 600$ below $1.0\ \Omega$ , $\pm 300$ $1.0\ \Omega$ and above
Short time overload	-	5 x rated power for 5 s
Operating temperature	$^{\circ}\text{C}$	- 65/+ 275
Dielectric withstanding voltage	$V_{AC}$	1000
Maximum working voltage	V	$(P \times R)^{1/2}$
Weight (typical)	g	CPSM03 = 5.5; CPSM05 = 6.5

### GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: CPSM0315R00JE31 (preferred part numbering format)

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 $\Omega$ 100R0 = 100 $\Omega$ 1K000 = 1 k $\Omega$				H = $\pm 3.0\%$ J = $\pm 5.0\%$ K = $\pm 10\%$			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			

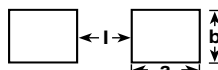
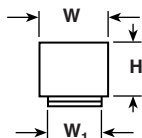
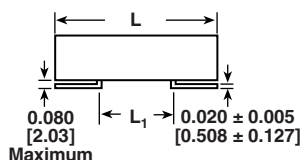
Historical Part Number Example: CPSM-3 15  $\Omega$  5% B31 (will continue to be accepted for tin/lead product only)

CPSM-3	15 $\Omega$	5%	B31
HISTORICAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING

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

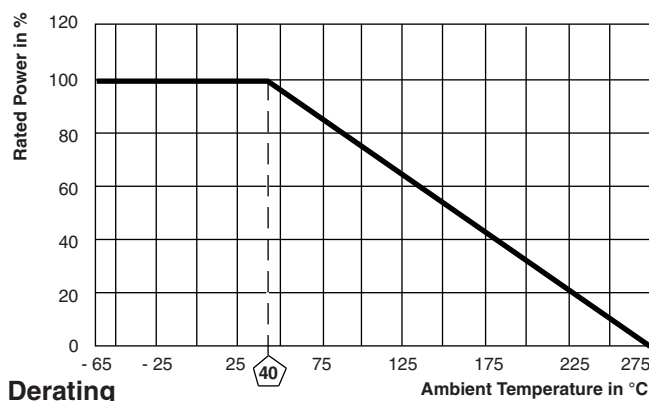
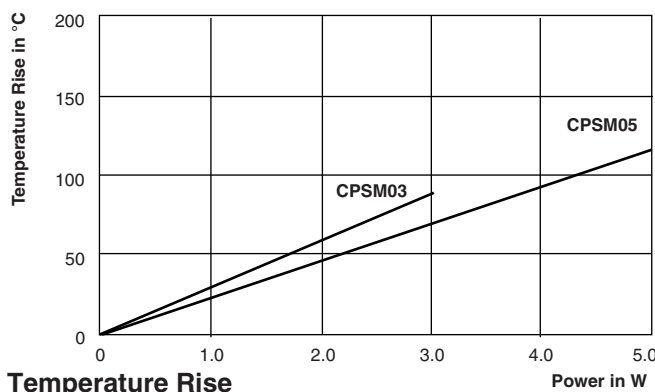
\*\* Please see document "Vishay Material Category Policy": [www.vishay.com/doc?99902](http://www.vishay.com/doc?99902)

## DIMENSIONS



MODEL	DIMENSIONS in inches (millimeters)				
	L ± 0.032 (0.813)	W ± 0.031 (0.787)	L <sub>1</sub> ± 0.062 (1.57)	W <sub>1</sub> + 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)



## 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 <sub>RMS</sub> 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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