

Sulfur-Resistant, Pulse-Proof, High Power Thick Film Chip Resistors



KEY BENEFITS

- Superior resistance against sulfur-containing atmospheres, according to ASTM B809-95
- Excellent pulse load capability
- Enhanced power rating
- Double-sided printed resistor element
- AEC-Q200 qualified

APPLICATIONS

- Automotive
- Industrial
 - Applications requiring high power / pulse and sulfur resistance

RESOURCES

- Datasheet: RCA-HP - www.vishay.com/doc?20067
- For technical questions contact thickfilmchip@vishay.com
- Material categorization: For definitions please see www.vishay.com/doc?99912



**THICK FILM CHIP RESISTORS**

RCA-HP e3

**Sulfur-Resistant, Pulse-Proof,
High Power Thick Film Chip Resistors**

TECHNICAL SPECIFICATIONS								
DESCRIPTION	RCA0402-HP e3	RCA0603-HP e3	RCA0805-HP e3	RCA1206-HP e3	RCA1210-HP e3	RCA1218-HP e3	RCA2010-HP e3	RCA2512-HP e3
Imperial size	0402	0603	0805	1206	1210	1218	2010	2512
Metric size code	RR1005M	RR1608M	RR2012M	RR3216M	RR3225M	RR3246M	RR5025M	RR6332M
Resistance range	1 Ω to 1 M Ω							
Resistance tolerance	$\pm 5\%$; $\pm 1\%$							
Temperature coefficient	± 200 ppm/K; ± 100 ppm/K							
Rated dissipation, P_{70} ⁽¹⁾	0.2 W ⁽²⁾	0.25 W	0.5 W	0.75 W ⁽³⁾	0.75 W	1.5 W	1.0 W	1.5 W
Operating voltage, $U_{max. AC_{RMS}/DC}$	50 V	75 V	150 V	200 V	200 V	200 V	400 V	500 V
Permissible film temperature, $\theta_{F max.}$ ⁽¹⁾	155 $^{\circ}$ C							
Operating temperature range	-55 $^{\circ}$ C to +155 $^{\circ}$ C							
Max. resistance change at P_{70} for resistance range, $ \Delta R/R $ after:								
1000 h	$\leq 2.0\%$							
8000 h	$\leq 4.0\%$							
Permissible voltage against ambient (insulation):								
1 min, U_{ins}	75 V	100 V	200 V	300 V	300 V	300 V	300 V	300 V

Notes

- (1) Please refer to APPLICATION INFORMATION below.
(2) RCA0402-HP resistors feature a single side printed resistive layer only.
(3) Specified power rating requires a thermal resistance of $R_{th} = 110$ K/W.

APPLICATION INFORMATION

When the resistor dissipates power, a temperature rise above the ambient temperature occurs, dependent on the thermal resistance of the assembled resistor together with the printed circuit board. The rated dissipation applies only if the permitted film temperature is not exceeded.

These resistors do not feature a limited lifetime when operated within the permissible limits. However, resistance value drift increasing over operating time may result in exceeding a limit acceptable to the specific application, thereby establishing a functional lifetime.

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