

# OPEN-AIR LOW VALUE CURRENT SHUNT RESISTORS

0.001Ω to 0.15Ω, 1 WATT to 5 WATT

## OA SERIES



Term.W is Pb-free and RoHS compliant



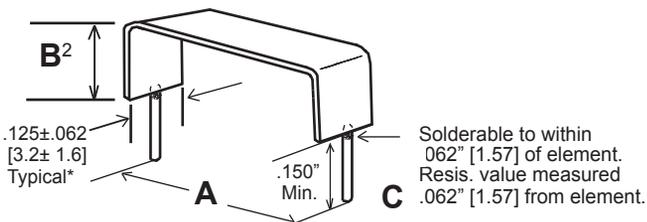
RESISTORS • CAPACITORS • COILS • DELAY LINES



← New narrow profile design offers significant space savings!

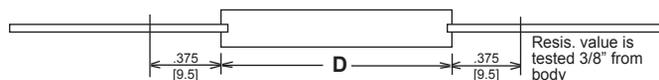
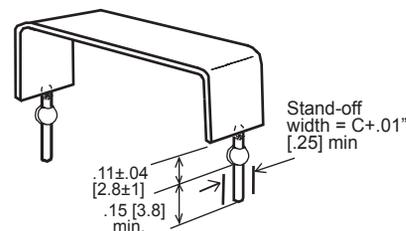
- Industry's widest range and lowest cost!
- Tolerances to ±0.5%, TC's to ±20ppm
- Available on exclusive **SWIFT™** delivery program!
- Option S: Axial lead (unformed element)
- Option E: Low Thermal EMF
- Option A: Stand-offs formed into lead wires
- Optional pin diameters and pin spacing

RCD's OA series offers cost-effective performance for a wide range of current shunt/sense applications<sup>3</sup>. The non-insulated open-air design features non-inductive performance and excellent stability/overload capacity. Numerous design modifications and custom styles are available... current ratings up to 100A, surface mount designs, military screening/burn-in, marking, insulation, intermediate values, etc. Custom shunts have been an RCD specialty over 30 years! Contact factory for assistance.



Typical shape depicted--actual shape may vary within envelope given. Overall length not to exceed Dim.A + .12" [3]. Dimensions in inches [mm]. \* Most values are .125 [3.2] wide, lowest 2W-5W are .187 [4.75] wide, highest 1W-2W values are .062 [1.6] wide

**Option 'A' Stand-offs:**  
For stand-off, specify Opt. A (e.g. OA2BA, OA5AA). Resis. value is measured at bottom of stand-off.



**Option 'S' Straight Axial Lead Design** (lead length = 1.25" [31.8] mm)

### SPECIFICATIONS

RCD Type	Power Rating <sup>1</sup>	Current Rating <sup>1</sup>		Resistance Range	A (lead spacing) ±.040 [1]			B Max. <sup>2</sup>	C (lead diameter)		D Max.
		With Std. Lead	With Opt. Lead		Standard	Option 80	Option 27		Standard	Optional	
OA1A	1W	14A	17A	.001Ω-.08Ω	.40 [10.5]	.2 [5]	.275 [7]	.35 [8.9] <sup>2</sup>	20AWG	18AWG (Opt. 18)	1.20 [30.5]
OA1B	1W	17A	14A	.001Ω-.08Ω	.45 [11.4]	.2 [5]	.275 [7]	.30 [7.6] <sup>2</sup>	18AWG	20AWG (Opt. 20)	1.20 [30.5]
OA2A	2W	22A	24A	.001Ω-.1Ω	.40 [10.5]	.2 [5]	.275 [7]	.70 [17.8] <sup>2</sup>	20AWG	18AWG (Opt. 18)	1.95 [49.5]
OA2B	2W	24A	22A	.001Ω-.1Ω	.60 [15.2]	.2 [5]	.275 [7]	.60 [15.2] <sup>2</sup>	18AWG	20AWG (Opt. 20)	1.95 [49.5]
OA3A	3W	26A	24A	.001Ω-.12Ω	.60 [15.2]	.2 [5]	.275 [7]	.90 [22.9] <sup>2</sup>	18AWG	20AWG (Opt. 20)	2.50 [63.5]
OA5A	5W	32A	40A	.0025Ω-.15Ω	.80 [20.3]	.2 [5]	.275 [7]	1.0 [25.4] <sup>2</sup>	18AWG	16AWG (Opt. 16)	2.94 [74.7]

<sup>1</sup>Units not to exceed wattage or current rating, whichever is less. Current rating is based on standard lead diameter, increased ratings available.

<sup>2</sup>Dim.B applies only to parts formed to the standard lead spacing (increase accordingly for options 80 & 27). Custom pin spacings are available.

<sup>3</sup>OA series not recommended for use in high vibration environments (encased designs such as LOR and ULV are preferable).

### STANDARD RESISTANCE VALUES AND CODES

Intermediate values available, most popular values listed in bold:  
 .001Ω (R001), .0015Ω (R0015), .002Ω (R002), .0025Ω (R0025), .003Ω (R003),  
**.005Ω (R005)**, .0068Ω (R0068), .0075Ω (R0075), .0082Ω (R0082), **.01Ω (R010)** if  
 ≤1%, R01 ≥2%), .012Ω (R012), **.015Ω (R015)**, **.02Ω (R020)** if ≤1%, R02 ≥2%), .022Ω  
 (R022), **.025Ω (R025)**, **.03Ω (R030)** if ≤1%, R03 ≥2%), .033Ω (R033), **.04Ω (R040)**  
 if ≤1%, R04 ≥2%), **.05Ω (R050)** if ≤1%, R05 ≥2%), .068Ω (R068), **.07Ω (R070)** if ≤1%,  
 R07 ≥2%), .075Ω (R075), **.08Ω (R080)** if ≤1%, R08 ≥2%), **.1Ω (R100)** if ≤1%, R10  
 ≥2%).

### TOLERANCE AND T.C. OPTIONS

Resistance Range	Tol. Range	Temp. Coef. (ppm/°C)	
		Typical	Best Avail.*
.001 to .0049Ω (OA5A=.0025 to .005Ω)	3% to 10%	900ppm	200ppm
.005 to .0099Ω (OA5A=.006 to .015Ω)	1% to 10%	600ppm	100ppm
.010 to .024Ω (OA5A=.016 to .025Ω)	1% to 10%	200ppm	50ppm
.025 to .049Ω	1% to 10%	100ppm	30ppm
.05 to .10Ω	1% to 10%	50ppm	20ppm

\* TC options vary depending on size and value (consult factory for availability)

### TYPICAL OPERATING CHARACTERISTICS:

TEMPERATURE RANGE: -55 to +275°C  
 DERATING: derate power & current rating by 0.4%/°C above 25°C  
 OVERLOAD: 5 x rated power for 5 seconds  
 LOAD LIFE @ 25°C (1000 hrs): 1% ΔR  
 MOISTURE No Load (1000 hrs): 1% ΔR  
 INDUCTANCE: 10 to 25nH  
 TEMP. CYCLING -40°C to +125°C (1000 cycles): 1% ΔR

### P/N DESIGNATION: OA2A □ □ - R001 - J B □ W

