



# State of the Art, Inc.

## 0303 Thin Film Chip Resistor

### Standard Grade, Surface Mount

PROTECTIVE  
ENCAPSULANT



99.6% ALUMINA CHIP

PRECISION  
THIN FILM  
RESISTOR

## FEATURES

- Tolerances to  $\pm 0.1\%$
- Operating temperature range :  
-55° C to +150° C
- For high-density hybrid circuits  
where space is at a premium
- TCR's to  $\pm 25$  ppm
- Made with the same materials and  
process as our MIL-PRF-55342 "S"  
level qualified chips
- Delivers greater power handling capability  
with lighter weight construction

## PERFORMANCE CHARACTERISTICS

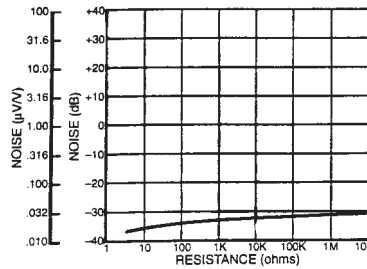
Resistance Range  $5\Omega - 100K\Omega$   
 Tolerances 0.1%, 0.25%, 0.5%, 1%, 2%, 5%, 10%  
 Maximum Power 50 mW  
 Maximum Voltage 30 Volts

### ENVIRONMENTAL PERFORMANCE (1)

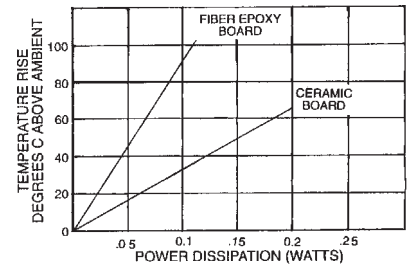
TCR (-55 to +125 °C in ppm/°C) < 25 ppm  
 Thermal Shock  $\pm 0.02\%$   
 Low Temperature Operation  $\pm 0.02\%$   
 Short-time Overload  $\pm 0.02\%$   
 Resistance to Bonding Exposure  $\pm 0.02\%$   
 Moisture Resistance  $\pm 0.03\%$   
 High Temperature Exposure  $\pm 0.03\%$   
 Life See Chart

(1) Typical resistance change, the maximum is the same as MIL-PRF-55342. Test methods are per MIL-PRF-55342.

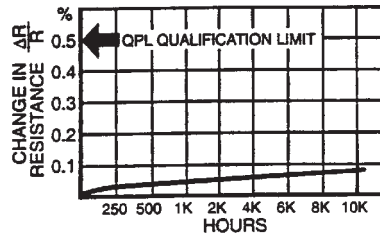
### CURRENT NOISE



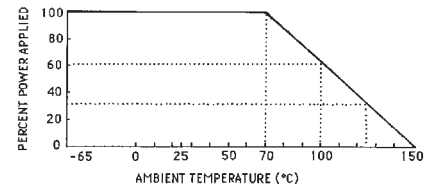
### POWER DISSIPATION



### TYPICAL LIFE TEST PERFORMANCE



### POWER DERATING



## PART NUMBERING

**S0303AA 150 J H W**

Termination Material  
 W: Gold B: Pretinned Solder over Nickel  
 TCR  
 E:  $\pm 25$  ppm H:  $\pm 50$  ppm K:  $\pm 100$  ppm  
 TOLERANCES  
 B: 0.1% C: 0.25% D: 0.5% F: 1% G: 2% J: 5% K: 10% M: 20%  
 RESISTANCE VALUE  
 Three or four digits are used with all leading digits significant. Four digits are used for 1% tolerance or lower, otherwise three digits are used. The last digit specifies the number of zeros to add. The letter "R" is used to represent the decimal for fractional ohmic values. Example: 5R6 is 5.6 ohms.  
 Substrate Material A: Alumina Ceramic  
 Termination Style A: Top sided with Bottom Isolated C: Wraparound

## MECHANICAL

	INCHES	MM
Length	.030 (+.002/- .002)	.76 (+.05/- .05)
Width	.030 (+.002/- .002)	.76 (+.05/- .05)
Thickness	.009 - .011	.23 - .27
Top Term.	.004 - .006	.10 - .15

Approx. Weight .00073 grams

All product is tested IAW Mil-Std-202, method 208, including 8 hour steam aging.

## PACKAGING

Two packaging options are available:

- Bulk Packaging - (5000 per Bag Max.)
- Waffle Pack - (400 per Tray Max.)

## OPTIONS

SOTA offers a full line of component parts in the 0303 size including High-Reliability (customer specified testing). Available options are epoxy bondable and wire bondable terminations, and custom part marking.

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Where Quality Isn't a Goal...It's Our Tradition