

# Coaxial Amplifier

## ZRON-8G+ ZRON-8GX+

50Ω Medium Power 2000 to 8000 MHz

### Features

- wideband, 2000 to 8000 MHz
- unconditionally stable
- high IP3, +30 dBm typ.

### Applications

- optical and spread-spectrum communications
- line-of-site transmit/receive
- wideband test instrumentation



ZRON-8G+



ZRON-8GX+

*Generic photo used for illustration purposes only*

CASE STYLE: AV243

| Connectors | Model     |
|------------|-----------|
| SMA        | ZRON-8G+  |
| SMA        | ZRON-8GX+ |

#### +RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

### Electrical Specifications

| MODEL NO.  | FREQUENCY (MHz) |       | GAIN (dB) |                            | MAXIMUM POWER (dBm)  |                   | DYNAMIC RANGE |                | VSWR (:1) Typ. |     | DC POWER      |                   |
|------------|-----------------|-------|-----------|----------------------------|----------------------|-------------------|---------------|----------------|----------------|-----|---------------|-------------------|
|            | $f_L$           | $f_U$ | Min.      | Flatness <sup>1</sup> Max. | Output (1 dB Compr.) | Input (no damage) | NF (dB) Typ.  | IP3 (dBm) Typ. | In             | Out | Volt (V) Nom. | Current (mA) Max. |
| ZRON-8G+   | 2000            | 8000  | 20        | ±1.5                       | +20                  | +10               | 6.0           | +30            | 2.0            | 2.0 | 15            | 310               |
| ZRON-8GX+* | 2000            | 8000  | 20        | ±1.5                       | +20                  | +10               | 6.0           | +30            | 2.0            | 2.0 | 15            | 310               |

\* Heat sink not included

<sup>1</sup> Measured at 25°C

Open load is not recommended, potentially can cause damage.  
With no load derate max input power by 20 dB

To order without heat sink, add suffix X to model number. Alternative heat sinking and heat removal must be provided by the user to limit maximum base-plate temperature to 71°C, in order to ensure proper performance. For reference, this requires thermal resistance of user's external heat sink to be 5°C/W Max.

### Maximum Ratings

Operating Temperature, case 0°C to 60°C

Storage Temperature -55°C to 125°C

DC Voltage +18V Max.

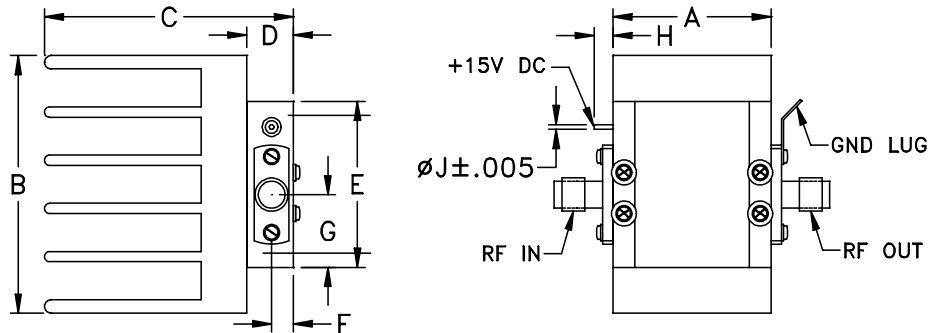
Permanent damage may occur if any of these limits are exceeded.

#### Notes

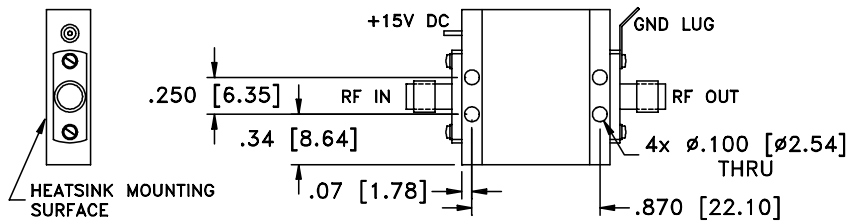
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## Outline Drawing



## MOUNTING INFORMATION FOR MODELS WITHOUT HEATSINK



## Outline Dimensions (inch mm)

| A     | B     | C     | D    | E     | F    | G     | H    | J    | wt     |
|-------|-------|-------|------|-------|------|-------|------|------|--------|
| 1.01  | 1.63  | 1.64  | .35  | 1.05  | .14  | .46   | .12  | .030 | grams* |
| 25.65 | 41.40 | 41.66 | 8.89 | 26.67 | 3.56 | 11.68 | 3.05 | 0.76 | 58     |

\*17 grams without heatsink

### Notes

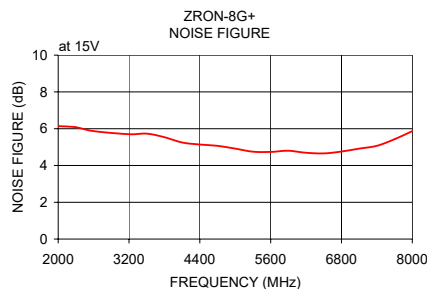
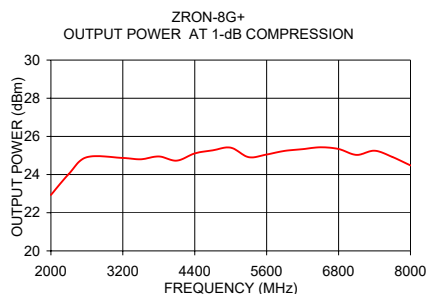
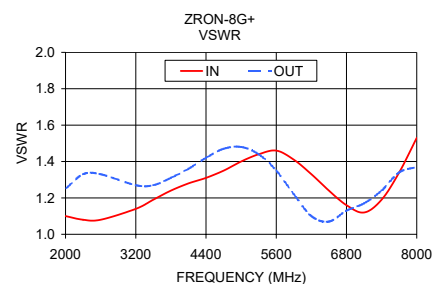
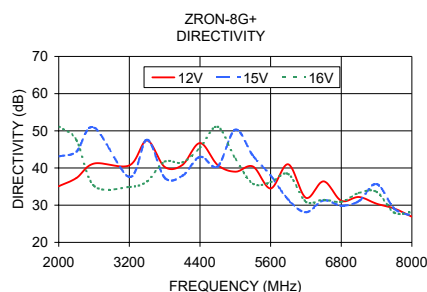
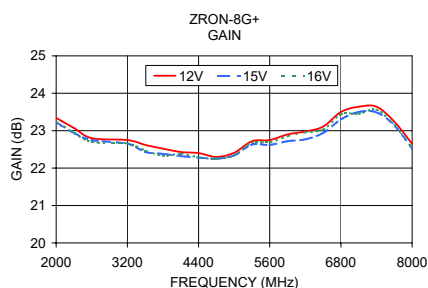
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# Typical Performance Data/Curves

# ZRON-8G+ ZRON-8GX+

| FREQUENCY (MHz) | GAIN (dB) |       |       | DIRECTIVITY (dB) |       |       | VSWR (:1) |      | NOISE FIGURE (dB) | POUT at 1 dB COMPR. (dBm) |
|-----------------|-----------|-------|-------|------------------|-------|-------|-----------|------|-------------------|---------------------------|
|                 | 12V       | 15V   | 16V   | 12V              | 15V   | 16V   | IN        | OUT  |                   |                           |
| 2000.00         | 23.34     | 23.22 | 23.25 | 35.10            | 43.10 | 51.20 | 1.10      | 1.25 | 6.14              | 22.93                     |
| 2300.00         | 23.07     | 22.94 | 22.94 | 37.30            | 44.40 | 47.50 | 1.08      | 1.33 | 6.08              | 24.04                     |
| 2600.00         | 22.80     | 22.75 | 22.70 | 41.20            | 50.90 | 35.20 | 1.08      | 1.33 | 5.87              | 24.91                     |
| 3200.00         | 22.75     | 22.65 | 22.66 | 40.70            | 37.60 | 34.90 | 1.14      | 1.27 | 5.70              | 24.87                     |
| 3500.00         | 22.62     | 22.43 | 22.47 | 47.40            | 47.60 | 36.40 | 1.19      | 1.27 | 5.73              | 24.80                     |
| 3800.00         | 22.52     | 22.38 | 22.33 | 40.30            | 37.40 | 41.70 | 1.24      | 1.31 | 5.54              | 24.95                     |
| 4100.00         | 22.43     | 22.32 | 22.38 | 40.80            | 37.90 | 41.50 | 1.28      | 1.36 | 5.25              | 24.73                     |
| 4400.00         | 22.40     | 22.28 | 22.29 | 46.70            | 43.00 | 45.50 | 1.31      | 1.42 | 5.14              | 25.11                     |
| 4700.00         | 22.30     | 22.25 | 22.25 | 40.80            | 40.40 | 51.10 | 1.35      | 1.47 | 5.07              | 25.27                     |
| 5000.00         | 22.41     | 22.34 | 22.34 | 39.00            | 50.30 | 42.50 | 1.40      | 1.48 | 4.92              | 25.41                     |
| 5300.00         | 22.72     | 22.63 | 22.68 | 40.40            | 43.30 | 35.80 | 1.44      | 1.44 | 4.75              | 24.91                     |
| 5600.00         | 22.75     | 22.62 | 22.69 | 34.50            | 38.00 | 36.20 | 1.46      | 1.35 | 4.74              | 25.05                     |
| 5900.00         | 22.90     | 22.72 | 22.85 | 41.00            | 31.50 | 38.40 | 1.41      | 1.22 | 4.80              | 25.24                     |
| 6200.00         | 22.98     | 22.77 | 22.96 | 32.00            | 28.10 | 30.90 | 1.33      | 1.10 | 4.69              | 25.33                     |
| 6500.00         | 23.11     | 22.94 | 23.03 | 36.40            | 31.30 | 31.50 | 1.24      | 1.07 | 4.66              | 25.43                     |
| 6800.00         | 23.50     | 23.30 | 23.44 | 31.20            | 29.90 | 30.90 | 1.16      | 1.13 | 4.76              | 25.34                     |
| 7100.00         | 23.64     | 23.50 | 23.45 | 32.20            | 31.10 | 33.30 | 1.12      | 1.17 | 4.92              | 25.03                     |
| 7400.00         | 23.64     | 23.49 | 23.56 | 30.40            | 35.70 | 33.60 | 1.19      | 1.24 | 5.07              | 25.25                     |
| 7700.00         | 23.24     | 23.14 | 23.14 | 29.10            | 29.10 | 28.00 | 1.34      | 1.34 | 5.43              | 24.92                     |
| 8000.00         | 22.65     | 22.52 | 22.55 | 26.90            | 27.10 | 28.10 | 1.53      | 1.37 | 5.87              | 24.48                     |



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# Amplifier

# ZRON-8G+

## Typical Performance Data

| FREQUENCY<br>(MHz) | GAIN<br>(dB) |       |       | DIRECTIVITY<br>(dB) |       |       | VSWR<br>IN<br>(:1)<br>15V | VSWR<br>OUT<br>(:1)<br>15V | NOISE<br>FIGURE<br>(dB)<br>15V | Pout at<br>1dB Comp.<br>(dBm)<br>15V |
|--------------------|--------------|-------|-------|---------------------|-------|-------|---------------------------|----------------------------|--------------------------------|--------------------------------------|
|                    | 12V          | 15V   | 16V   | 12V                 | 15V   | 16V   |                           |                            |                                |                                      |
| 2000.0             | 23.34        | 23.22 | 23.25 | 35.11               | 43.07 | 51.20 | 1.10                      | 1.25                       | 6.14                           | 22.93                                |
| 2300.0             | 23.07        | 22.94 | 22.94 | 37.29               | 44.44 | 47.49 | 1.08                      | 1.33                       | 6.08                           | 24.04                                |
| 2600.0             | 22.80        | 22.75 | 22.70 | 41.21               | 50.92 | 35.19 | 1.08                      | 1.33                       | 5.87                           | 24.91                                |
| 3200.0             | 22.75        | 22.65 | 22.66 | 40.71               | 37.62 | 34.94 | 1.14                      | 1.27                       | 5.70                           | 24.87                                |
| 3500.0             | 22.62        | 22.43 | 22.47 | 47.36               | 47.65 | 36.37 | 1.19                      | 1.27                       | 5.73                           | 24.80                                |
| 3800.0             | 22.52        | 22.38 | 22.33 | 40.29               | 37.36 | 41.74 | 1.24                      | 1.31                       | 5.54                           | 24.95                                |
| 4100.0             | 22.43        | 22.32 | 22.38 | 40.76               | 37.91 | 41.52 | 1.28                      | 1.36                       | 5.25                           | 24.73                                |
| 4400.0             | 22.40        | 22.28 | 22.29 | 46.70               | 43.00 | 45.49 | 1.31                      | 1.42                       | 5.14                           | 25.11                                |
| 4700.0             | 22.30        | 22.25 | 22.25 | 40.84               | 40.36 | 51.15 | 1.35                      | 1.47                       | 5.07                           | 25.27                                |
| 5000.0             | 22.41        | 22.34 | 22.34 | 38.97               | 50.29 | 42.51 | 1.40                      | 1.48                       | 4.92                           | 25.41                                |
| 5300.0             | 22.72        | 22.63 | 22.68 | 40.42               | 43.26 | 35.79 | 1.44                      | 1.44                       | 4.75                           | 24.91                                |
| 5600.0             | 22.75        | 22.62 | 22.69 | 34.51               | 37.98 | 36.17 | 1.46                      | 1.35                       | 4.74                           | 25.05                                |
| 5900.0             | 22.90        | 22.72 | 22.85 | 41.02               | 31.52 | 38.38 | 1.41                      | 1.22                       | 4.80                           | 25.24                                |
| 6200.0             | 22.98        | 22.77 | 22.96 | 32.05               | 28.07 | 30.92 | 1.33                      | 1.10                       | 4.69                           | 25.33                                |
| 6500.0             | 23.11        | 22.94 | 23.03 | 36.43               | 31.34 | 31.50 | 1.24                      | 1.07                       | 4.66                           | 25.43                                |
| 6800.0             | 23.50        | 23.30 | 23.44 | 31.16               | 29.89 | 30.90 | 1.16                      | 1.13                       | 4.76                           | 25.34                                |
| 7100.0             | 23.64        | 23.50 | 23.45 | 32.17               | 31.13 | 33.26 | 1.12                      | 1.17                       | 4.92                           | 25.03                                |
| 7400.0             | 23.64        | 23.49 | 23.56 | 30.38               | 35.71 | 33.64 | 1.19                      | 1.24                       | 5.07                           | 25.25                                |
| 7700.0             | 23.24        | 23.14 | 23.14 | 29.12               | 29.07 | 27.99 | 1.34                      | 1.34                       | 5.43                           | 24.92                                |
| 8000.0             | 22.65        | 22.52 | 22.55 | 26.89               | 27.09 | 28.07 | 1.53                      | 1.37                       | 5.87                           | 24.48                                |

REV. X1  
ZRON-8G+  
060917  
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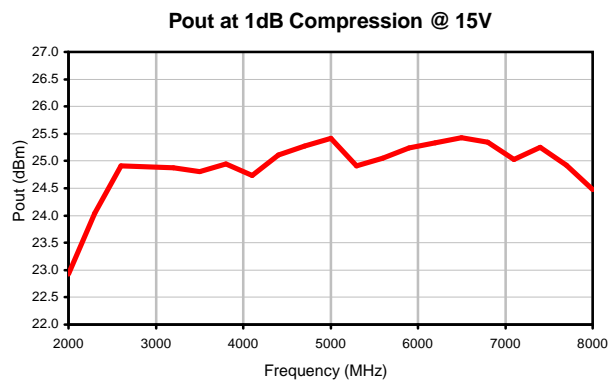
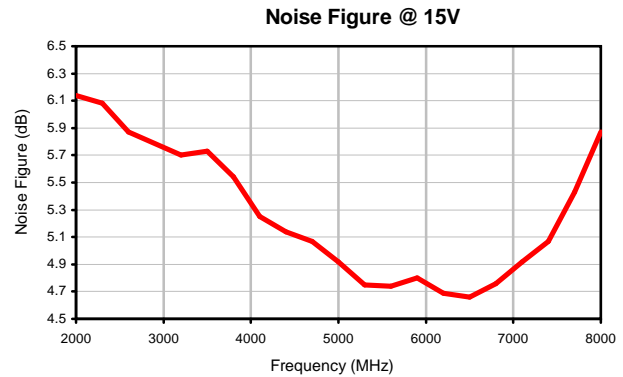
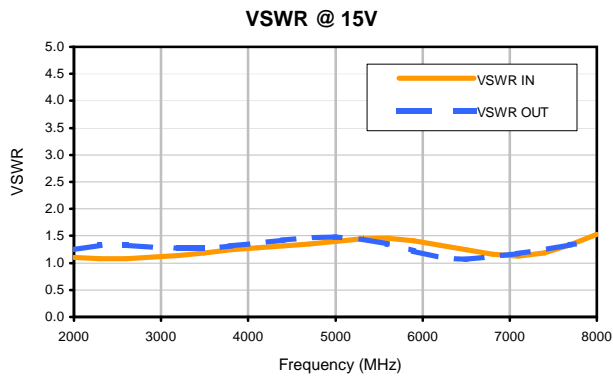
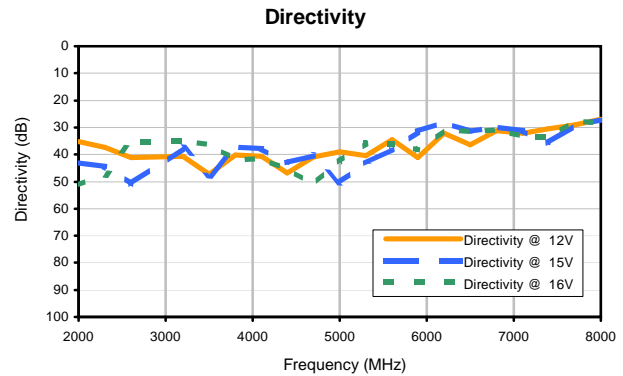
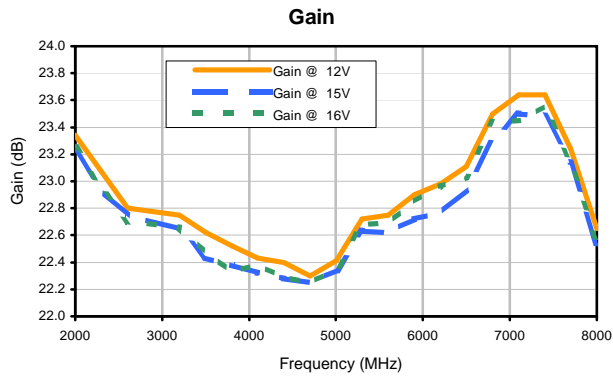
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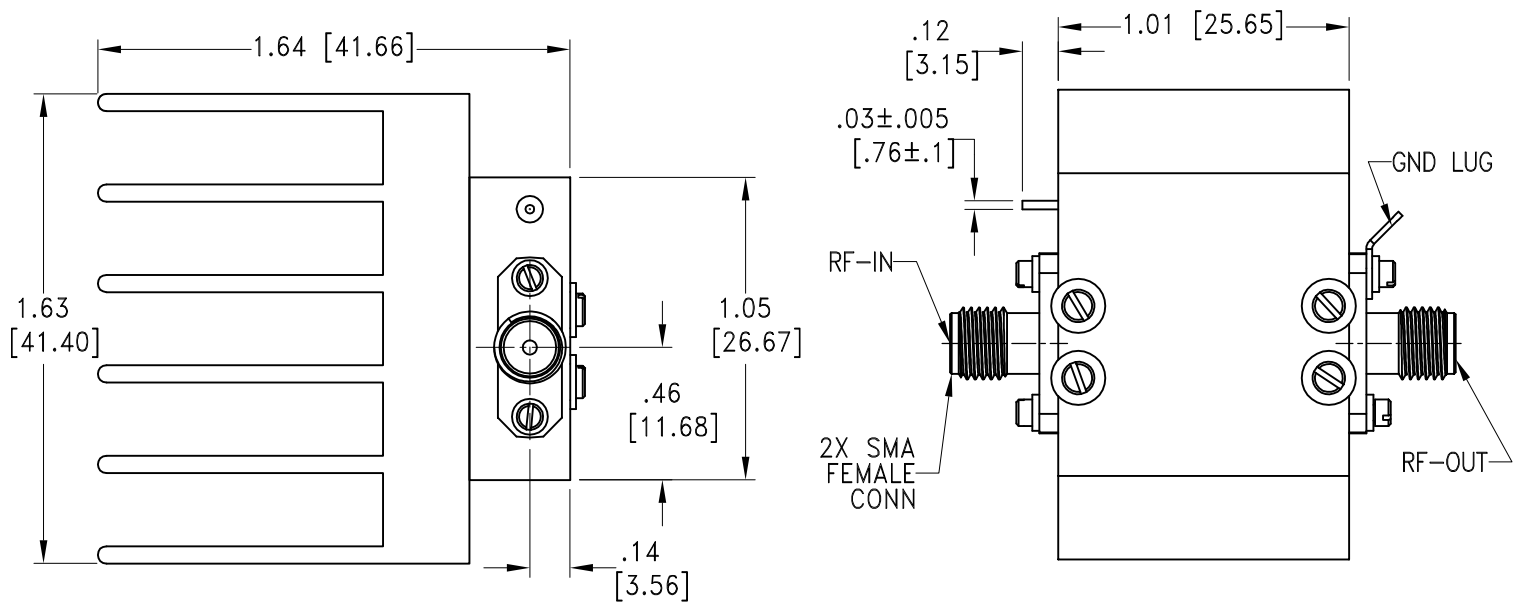


## Typical Performance Curves

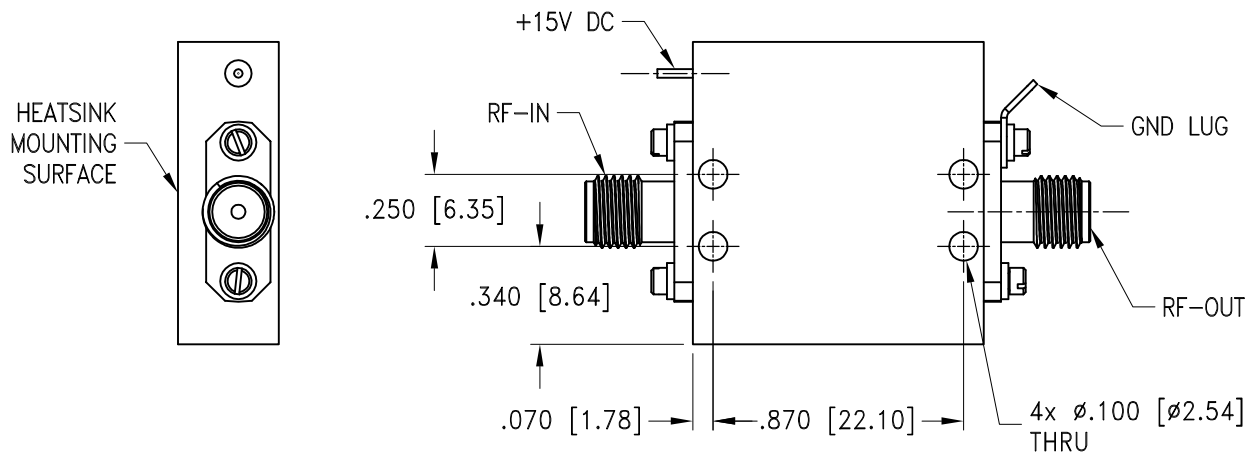


## Outline Dimensions

AV243



### MOUNTING INFORMATION OF MODEL WITHOUT HEATSINK



Weight: 58 grams; Weight without heatsink: 17 grams

Dimensions are in inches (mm). Tolerances: 2 Pl. ±.03; 3 Pl. ±.015

### Notes:

1. Case material: Aluminum alloy
2. Case finish: Nickel plate.
3. Heat sink finish: Black anodize.

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RF/IF MICROWAVE COMPONENTS



All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

| Specification             | Test/Inspection Condition                              | Reference/Spec                                     |
|---------------------------|--|--|
| Operating Temperature     | 0° to 60° C<br>Case Temperature or Ambient Temperature | Individual Model Data Sheet                        |
| Storage Temperature       | 55° to 125° C or -55° to 100°<br>Ambient Environment   | Individual Model Data Sheet                        |
| Stabilization Bake        | (non-operating)<br>125°C, 24 hours                     | - - -  |
| Burn-in at Elevated Temp. | (DC on)<br>160 hours at 85° C                          | MIL-STD-202, Method 108                            |
| Thermal Shock             | -55° to 100°C, 5 cycles                                | MIL-STD-202, Method 107, Condition A, except 100°C |