

- CURRENT REGULATOR DIODES
- CONSTANT CURRENT OVER WIDE VOLTAGE RANGE
- HIGH SOURCE IMPEDANCE
- METALLURGICALLY BONDED
- DOUBLE PLUG CONSTRUCTION

DCR250

thru

DCR257

## MAXIMUM RATINGS

Operating Temperature: -65°C to +175°C

Storage Temperature: -65°C to +175°C

DC Power Dissipation: 500 mW @ +50°C @  $T_L = 3/8"$

Power Derating: 4 mW / °C above +50°C

## ELECTRICAL CHARACTERISTICS @ 25°C, unless otherwise specified

| TYPE<br>NUMBER | REGULATOR CURRENT<br>$I_p$ (mA) @ $V_S = 25V$<br>(Note 1) |      |       | MINIMUM<br>DYNAMIC<br>IMPEDANCE<br>@ $V_S = 25V$<br>$Z_S$ (K )<br>(Note 2) | MINIMUM<br>KNEE<br>IMPEDANCE<br>@ $V_K = 6.0 V$<br>$Z_K$ (K )<br>(Note 3) | MAXIMUM<br>LIMITING<br>VOLTAGE<br>@ $I_L = 0.8 I_p$ (min)<br>$V_L$ (VOLTS) | PEAK<br>OPERATING<br>VOLTAGE<br>VOLTS |
|----------------|-----------------------------------------------------------|------|-------|----------------------------------------------------------------------------|---------------------------------------------------------------------------|----------------------------------------------------------------------------|---------------------------------------|
|                | NOM                                                       | MIN  | MAX   |                                                                            |                                                                           |                                                                            |                                       |
| DCR250         | 5.10                                                      | 4.59 | 5.61  | 100                                                                        | 4.0                                                                       | 3.67                                                                       | 80                                    |
| DCR251         | 5.60                                                      | 5.04 | 6.16  | 90                                                                         | 4.0                                                                       | 4.03                                                                       | 80                                    |
| DCR252         | 6.20                                                      | 5.58 | 6.82  | 80                                                                         | 3.0                                                                       | 4.46                                                                       | 70                                    |
| DCR253         | 6.80                                                      | 6.12 | 7.48  | 70                                                                         | 2.0                                                                       | 4.90                                                                       | 70                                    |
| DCR254         | 7.50                                                      | 6.75 | 8.25  | 50                                                                         | 1.5                                                                       | 5.40                                                                       | 60                                    |
| DCR255         | 8.20                                                      | 7.38 | 9.02  | 30                                                                         | 1.5                                                                       | 5.90                                                                       | 60                                    |
| DCR256         | 9.10                                                      | 8.19 | 10.01 | 20                                                                         | 1.0                                                                       | 6.55                                                                       | 50                                    |
| DCR257         | 10.00                                                     | 9.00 | 11.10 | 10                                                                         | 1.0                                                                       | 7.20                                                                       | 50                                    |

**NOTE 1** Pulse measurement @ 1% duty cycle, 10 milliseconds maximum.

**NOTE 2**  $Z_S$  is derived by superimposing A 90Hz RMS signal equal to 10% of  $V_S$  on  $V_S$

**NOTE 3**  $Z_K$  is derived by superimposing A 90Hz RMS signal equal to 10% of  $V_K$  on  $V_K$

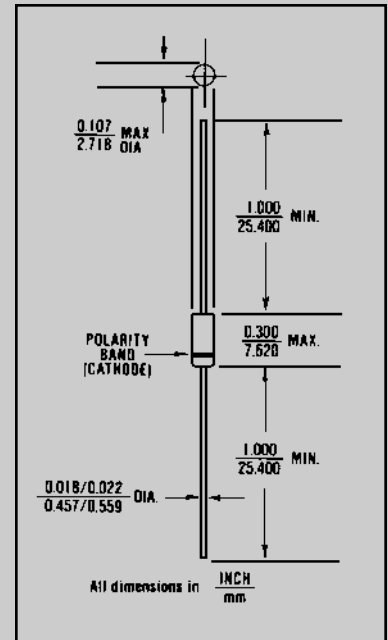


FIGURE 1

## DESIGN DATA

**CASE:** Hermetically sealed glass case. DO-7 outline.

**LEAD MATERIAL:** Copper clad steel.

**LEAD FINISH:** Tin / Lead

**THERMAL RESISTANCE:** ( $R_{\theta JEC}$ ): 250 °C/W maximum at  $L = .375$  inch

**THERMAL IMPEDANCE:** ( $Z_{\theta JX}$ ): 25 °C/W maximum

**POLARITY:** Diode to be operated with the banded (cathode) end negative.

**MOUNTING POSITION:** Any



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