



FEATURES

- Ultra-High Optical Output
- Four Wire Bonds on Die Corners
- Very Narrow Optical Beam
- Standard 3-Lead TO-39 Hermetic Package
Chip Size: 0.026" x 0.026"

Electro-Optical Characteristics at 25°C

| Parameters | Test Conditions | Min | Typ | Max | Units |
|--|--------------------------|-----|-----|-----|-------|
| Total Power Output, P_o | $I_F = 500 \text{ mA}$ | 55 | 110 | | mW |
| Peak Emission Wavelength, λ_p | $I_F = 50 \text{ mA}$ | | 850 | | nm |
| Spectral Bandwidth at 50%, $\Delta\lambda$ | $I_F = 50 \text{ mA}$ | | 40 | | nm |
| Half Intensity Beam Angle, θ | $I_F = 50 \text{ mA}$ | | 7 | | Deg |
| Forward Voltage, V_F | $I_F = 500 \text{ mA}$ | | 1.7 | 2 | Volts |
| Reverse Breakdown Voltage, V_R | $I_R = 10 \mu\text{A}$ | 5 | 30 | | Volts |
| Rise Time | $I_{FP} = 50 \text{ mA}$ | | 20 | | nsec |
| Fall Time | $I_{FP} = 50 \text{ mA}$ | | 20 | | nsec |

Absolute Maximum Ratings at 25°C Case

| Parameters | Units |
|---|---------|
| Power Dissipation ¹ | 1000 mW |
| Continuous Forward Current | 500 mA |
| Peak Forward Current (10 μs , 200 Hz) ² | 1.5 A |
| Reverse Voltage | 5 V |
| Lead Soldering Temperature (1/16" from case for 10 sec) | 260°C |

¹ Derate per thermal derating curve above 25°C.

² Derate linearly above 25°C.

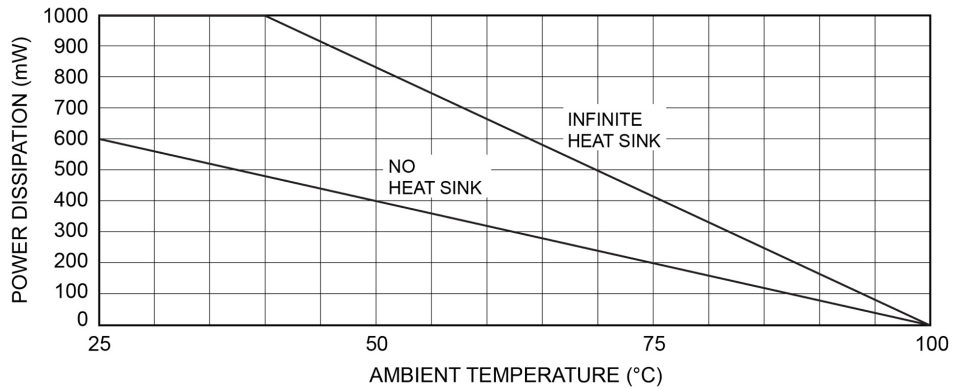
Thermal Parameters

| Parameters | Units |
|---|-----------------|
| Storage and Operating Temperature Range | -40°C to 100°C |
| Maximum Junction Temperature | 100°C |
| Thermal Resistance, R_{THJA} ¹ | 150°C/W Typical |
| Thermal Resistance, R_{THJA} ² | 60°C/W Typical |

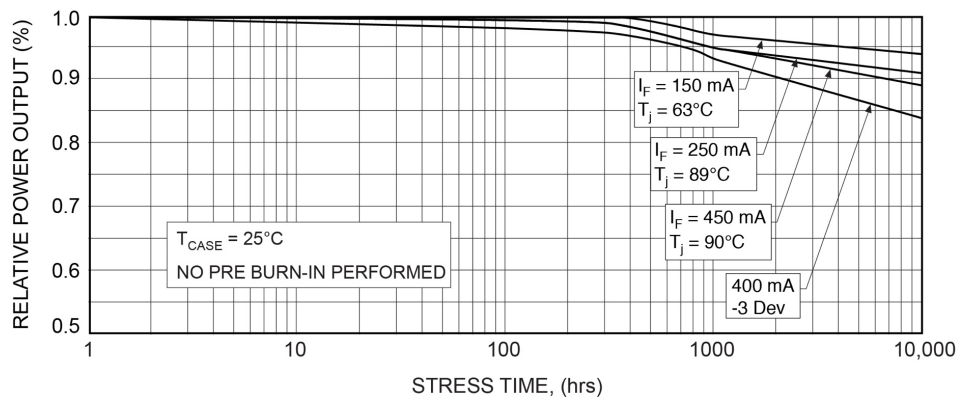
¹ Heat transfer minimized by measuring in still air with minimum heat conducting through leads.

² Air circulating at a rapid rate to keep case temperature at 25°C.

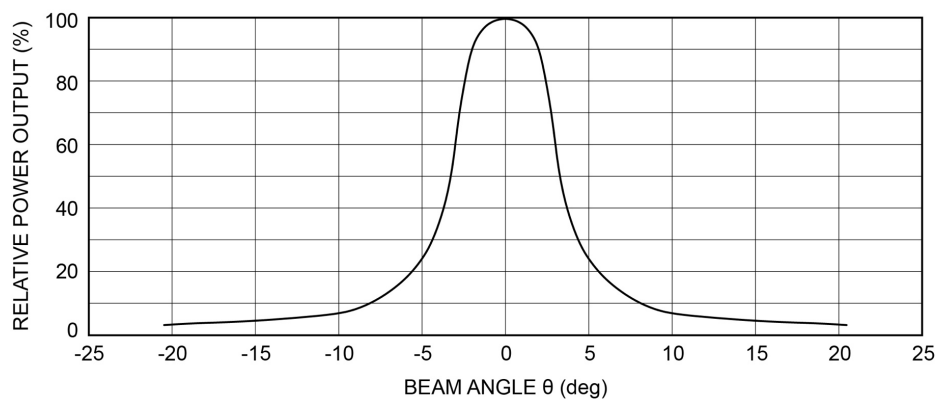
Maximum Rated Thermal Derating Curve



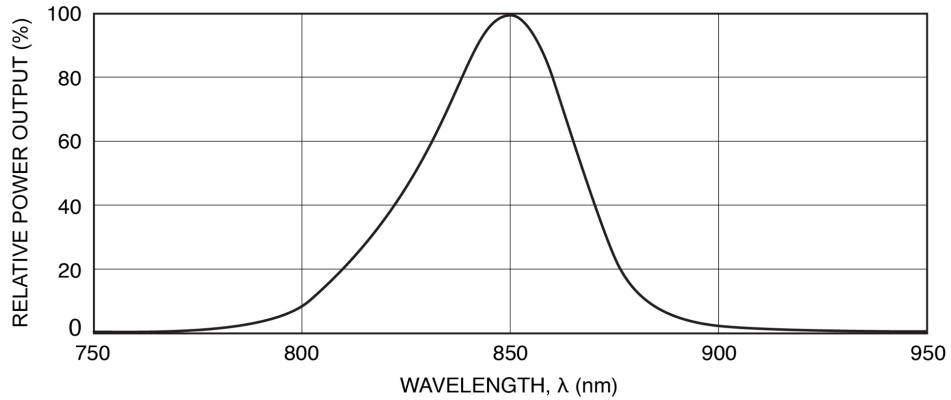
Typical Degradation Curve



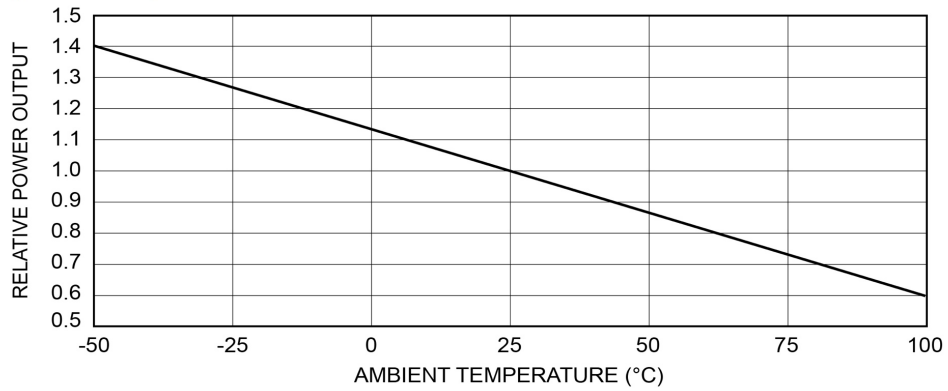
Typical Radiation Pattern



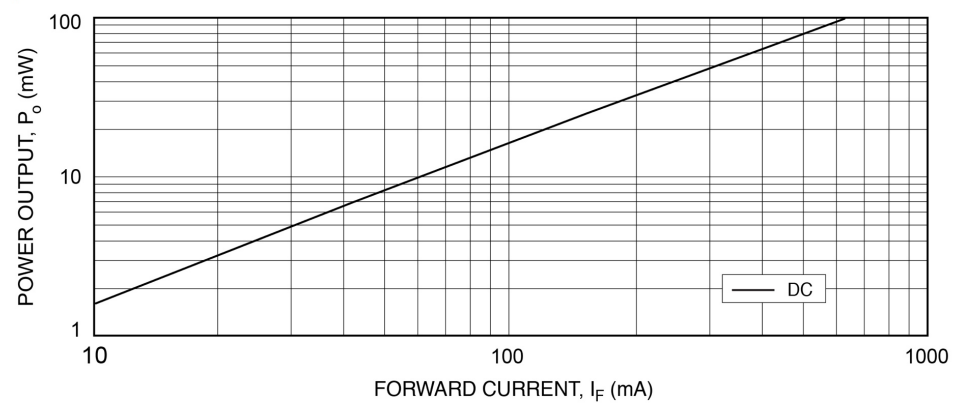
Typical Spectral Output



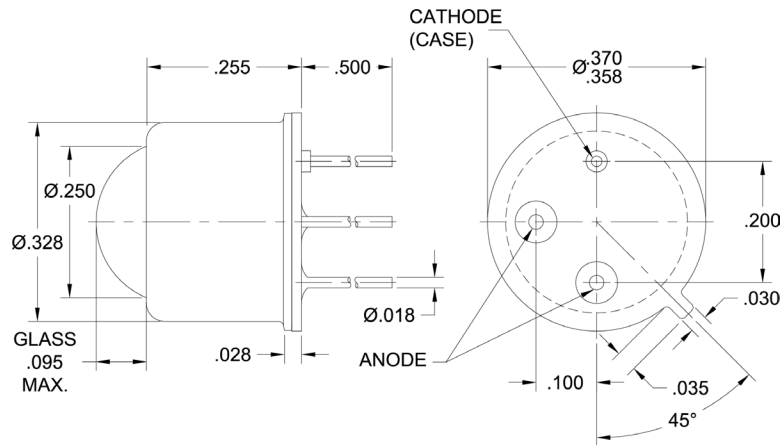
Typical Power Output vs Temperature



Typical Power Output vs Forward Current



Package Information



All surfaces are gold plated. Dimensions are nominal values in inches unless otherwise specified. Two Anode pins **must be** externally connected together.

Specifications are subject to change without prior notice.