Super High-Power GaAlAs IR Emitters

OD-110L

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"a

Electro-Optical Characteristics at 25°C

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

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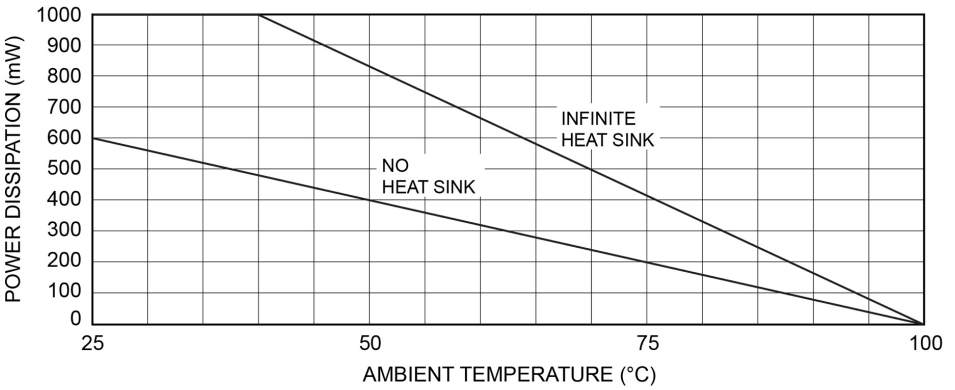
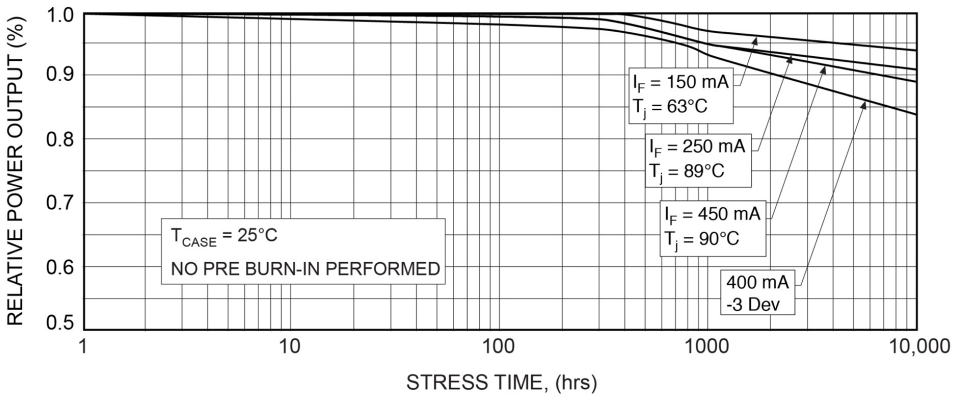
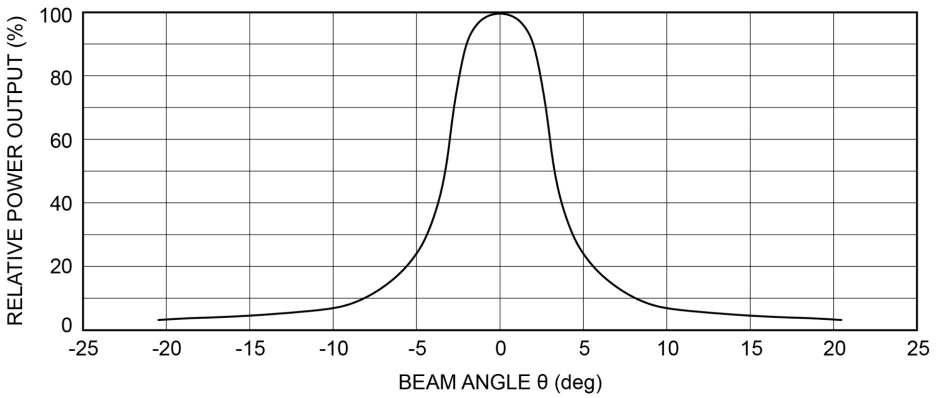
Maximum Rated Thermal Derating Curve



Typical Degradation Curve



Typical Radiation Pattern



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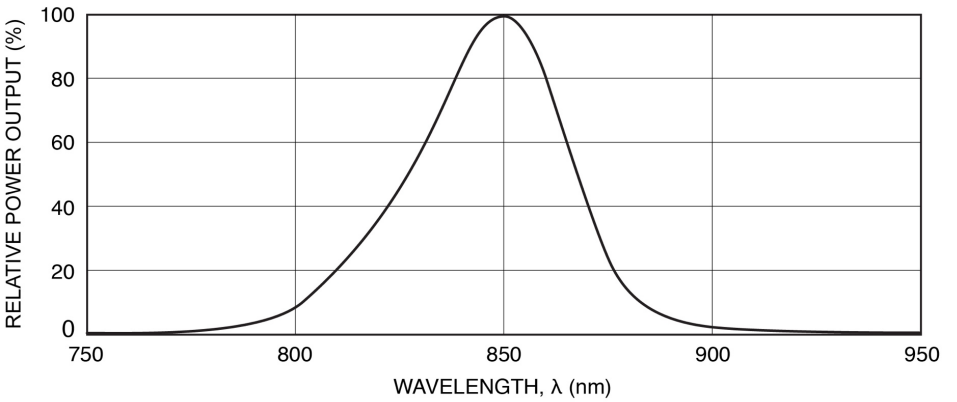
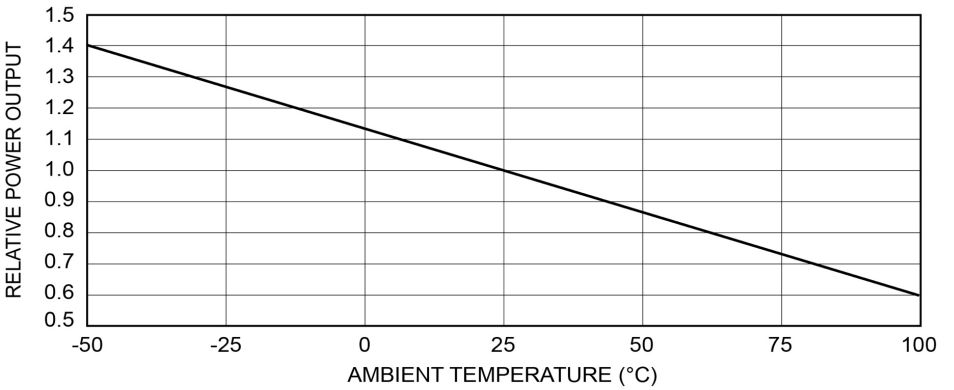
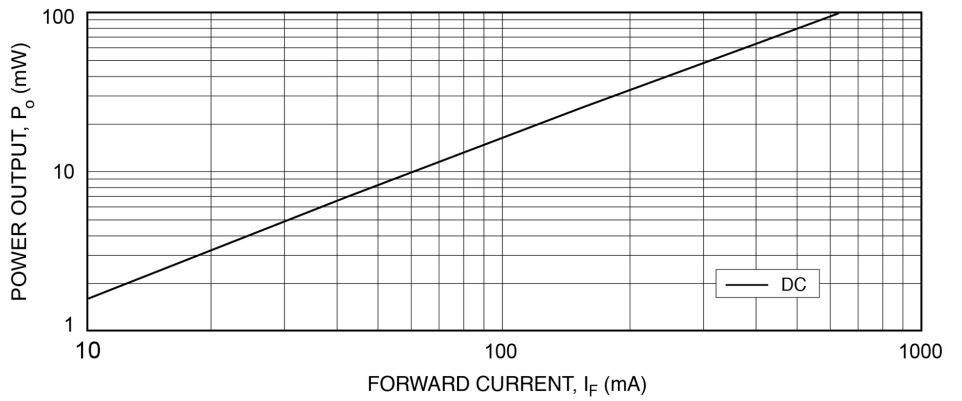
Typical Spectral Output



Typical Power Output vs Temperature



Typical Power Output vs Forward Current



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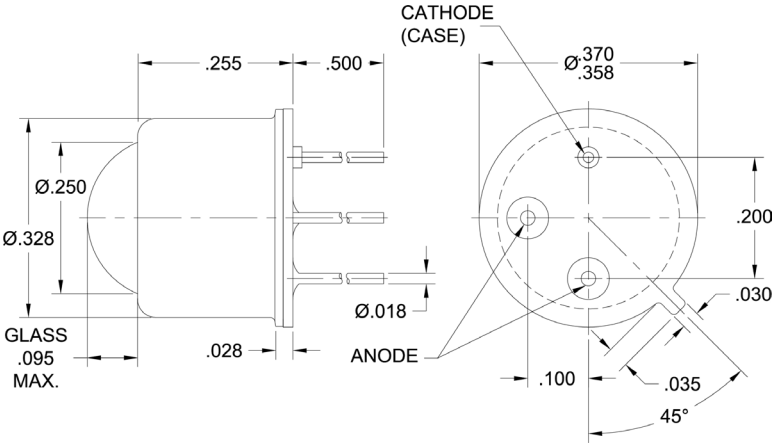
Package Information



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.