Super High-Power GaAlAs IR Emitters



FEATURES

- Ultra-High Optical Output
- Four Wire Bonds on Die Corners
- Very Uniform 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	Тур	Max	Units
Total Power Output, P₀	I _F = 500 mA	80	140		mW
Peak Emission Wavelength, λ _P	I _F = 50 mA		850		nm
Spectral Bandwidth at 50%, Δλ	I _F = 50 mA		40		nm
Half Intensity Beam Angle, θ	I _F = 50 mA		110		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.

Thermal Parameters

Parameters	Units		
Storage and Operating Temperature Range	-40°C to 100°C		
Maximum Junction Temperature	100°C		
Thermal Resistance, R _{THJA} ¹	145°C/W Typical		
Thermal Resistance, R _{THJA} ²	75°C/W Typical		

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

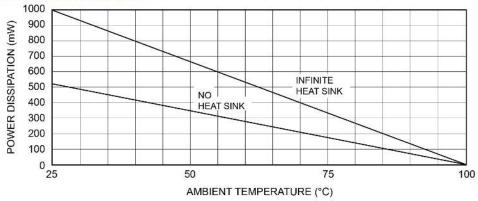
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² Derate linearly above 25°C.

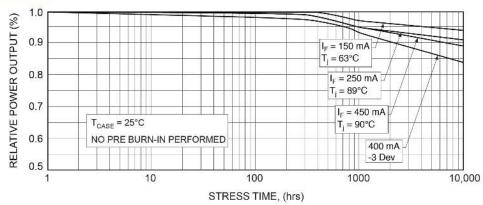
² Air circulating at a rapid rate to keep case temperature at 25°C.



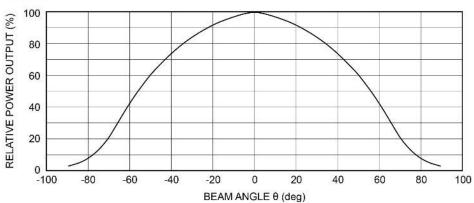
Maximum Rated Thermal Derating Curve



Typical Degradation Curve



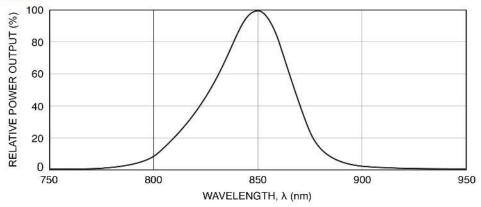
Typical Radiation Pattern



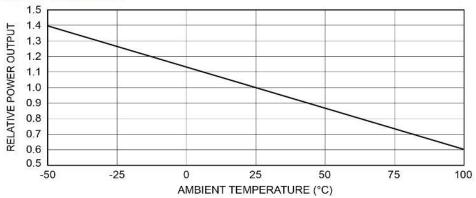
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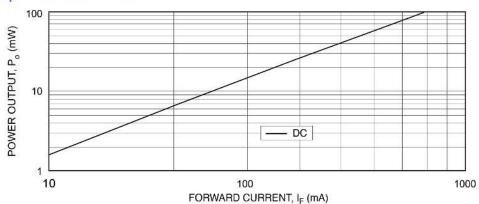
Typical Spectral Output



Typical Power Output vs Temperature



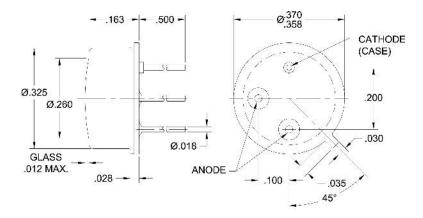
Typical Power Output vs Forward Current



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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.

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