FEATURES

- High Optical Output
- 810 nm Peak Emission
- Hermetically Sealed Metal TO-46 Package
- Narrow Angle for Long Distance Applications
- High Radiation Tolerance
- Excellent Power Degradation Characteristics
- Fast Response
- MIL-S-19500 Screening Available
- No Internal Coatings

Electro-Optical Characteristics at 25 °C

Parameters	Test Conditions	Min	Typ	Max	Units
Total Power Output, P_o	I_F = 100 mA	1.5	3		mW
Peak Emission Wavelength, λ_P	I_F = 50 mA		810		nm
Spectral Bandwidth at 50 %, $\Delta\lambda$	I_F = 50 mA		50		nm
Half Intensity Beam Angle, θ	I_F = 50 mA		8		Deg
Forward Voltage, V_F	I_F = 100 mA		1.45	1.8	V
Reverse Breakdown Voltage, V_R	I_R = 10 µA	3	4		V
Capacitance, C	V_R = 0 V		150		pF
Rise Time			60		nsec
Fall Time			60		nsec

Absolute Maximum Ratings at 25°

Parameters	Units
Power Dissipation[1]	180 mW
Continuous Forward Current	100 mA
Peak Forward Current (10 µs, 150 Hz)[2]	3 A
Reverse Voltage	3 V
Lead Soldering Temperature (1/16" from case for 10 sec)	240°C

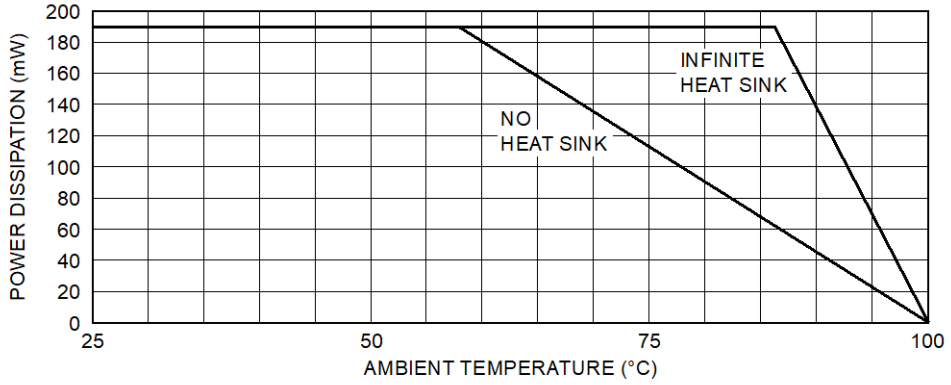
[1] Derate per thermal derating curve above 25 °C.
[2] Derate linearly above 25 °C

Thermal Parameters

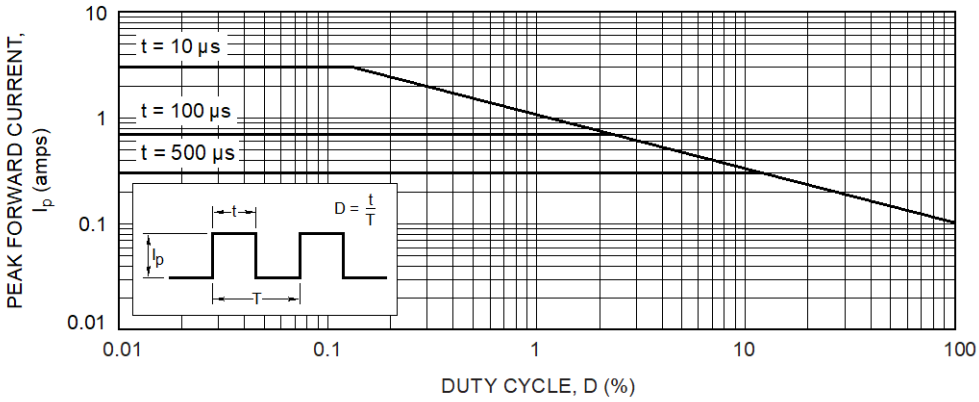
Parameters	Units
Storage and Operating Temperature Range	-65°C to 150°C
Maximum Junction Temperature	150°C
Thermal Resistance, R_{THJA}[1]	400°C/W Typical
Thermal Resistance, R_{THJA}[2]	135°C/W Typical

[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.

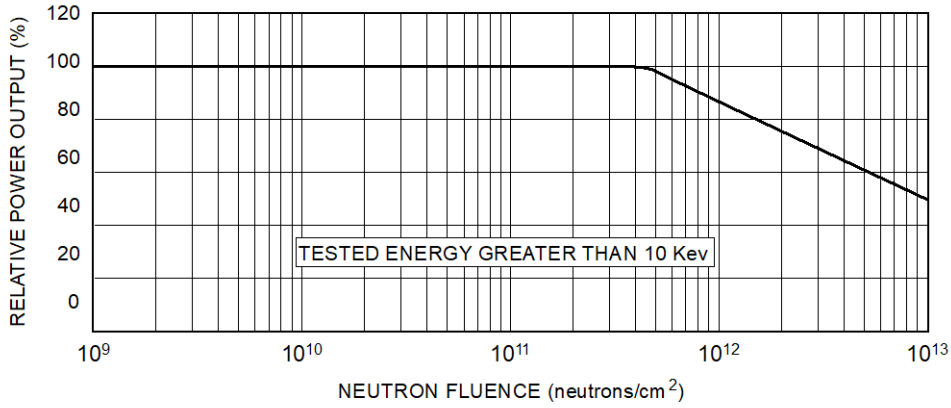
Maximum Rated Thermal Derating Curve



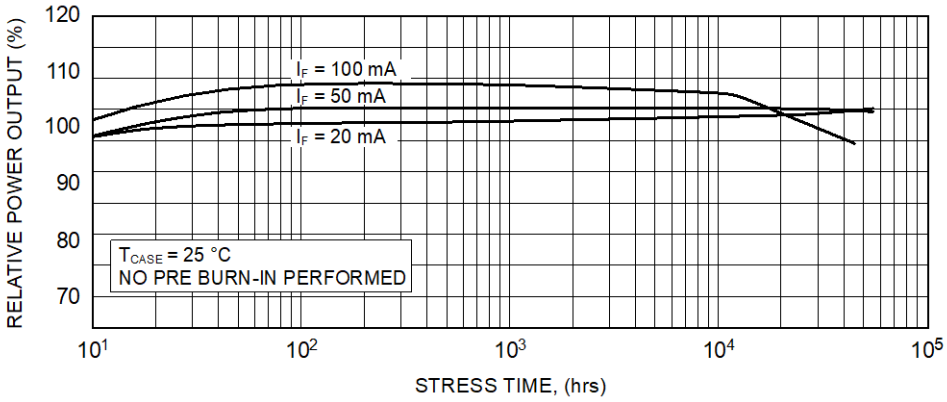
Maximum Rated Peak Pulse Current



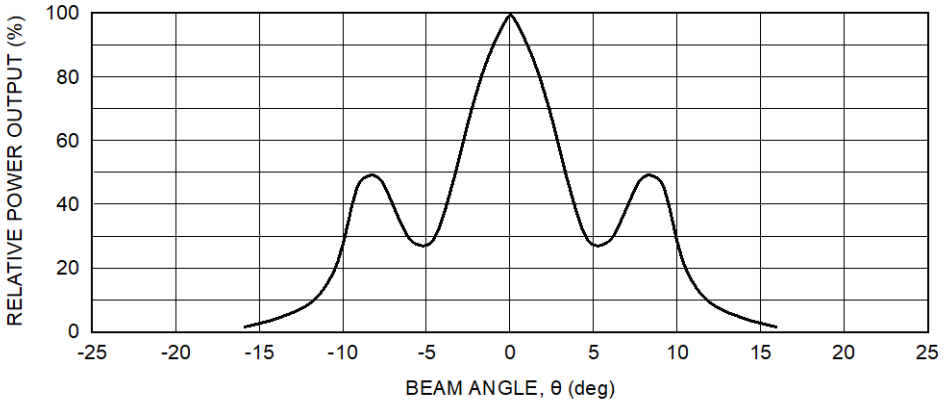
Typical Power Output vs Neutron Irradiation



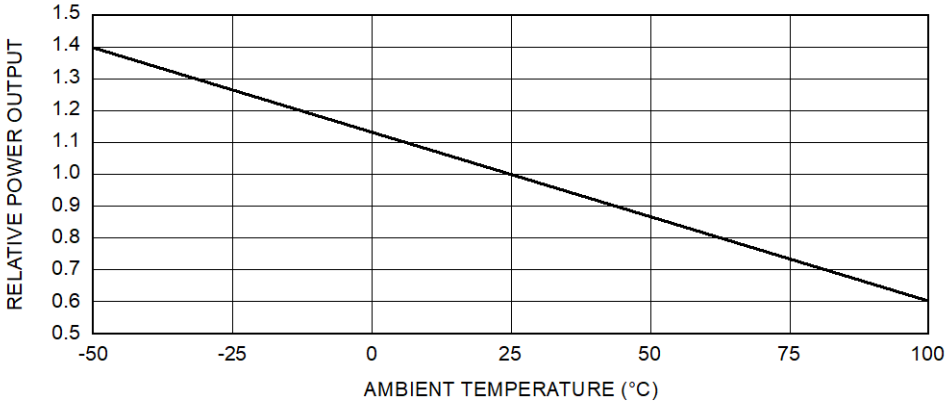
Typical Degradation Curve



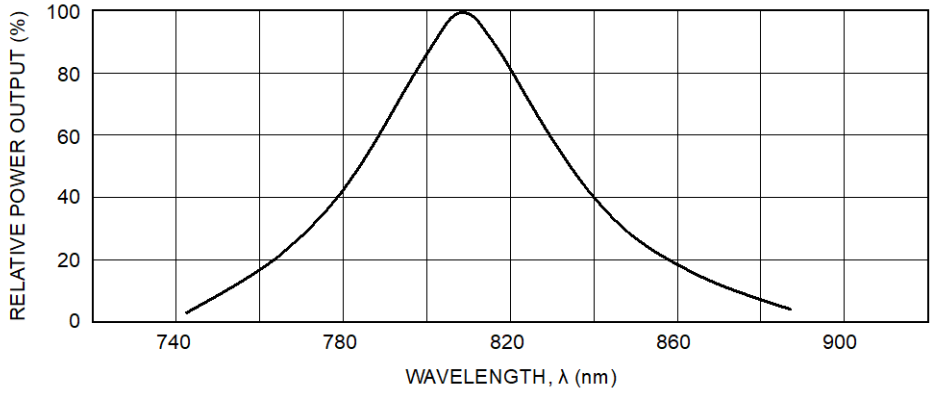
Typical Radiation Pattern



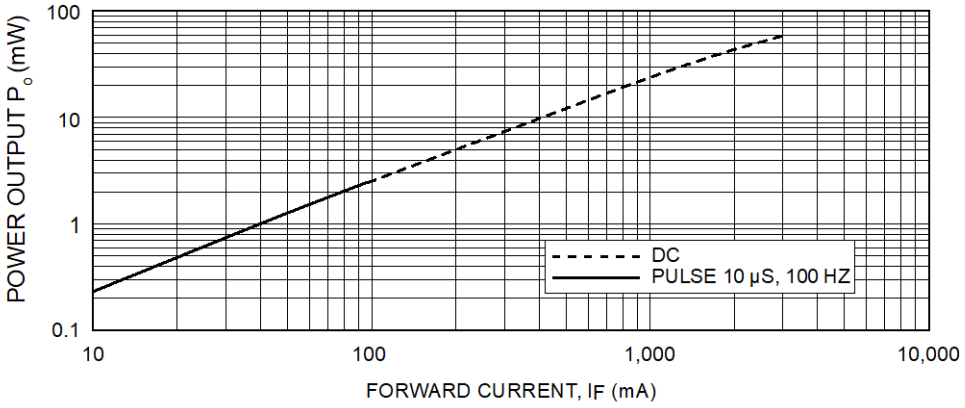
Typical Power Output vs Temperature



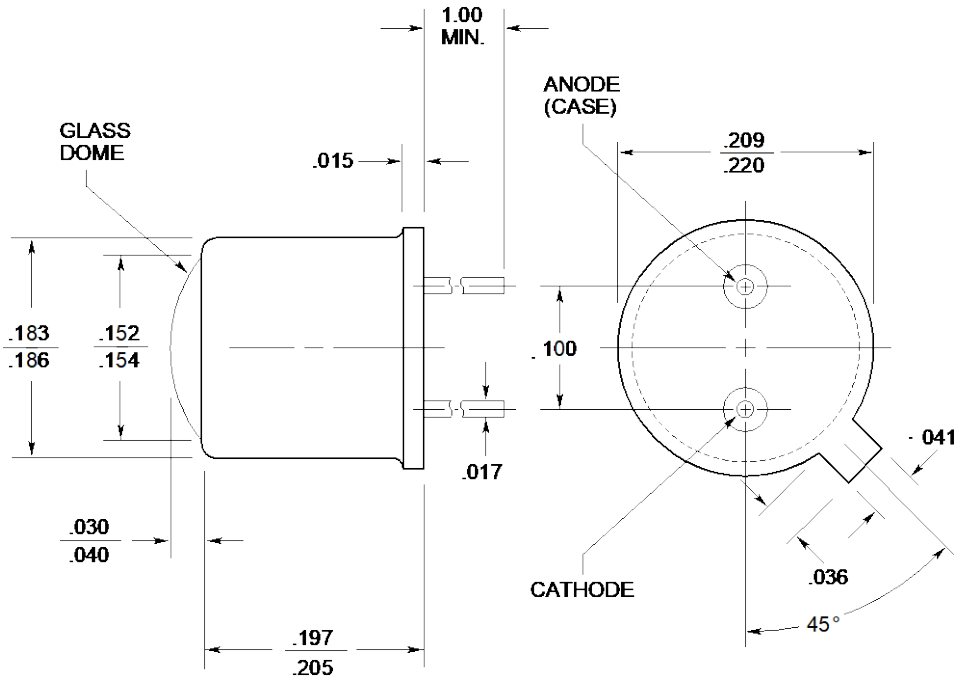
Typical Spectral Output



Typical Power Output vs Forward Current



Package Information



All surfaces are gold plated. Dimensions are nominal values in inches unless otherwise specified.
Window caps are welded to the case.

Ordering Information

OD-810-005	Hi-Rel Radiation Hardened Narrow Angle IR 810 nm Emitter Shipped in ESD Bag

Specifications are subject to change without prior notice.