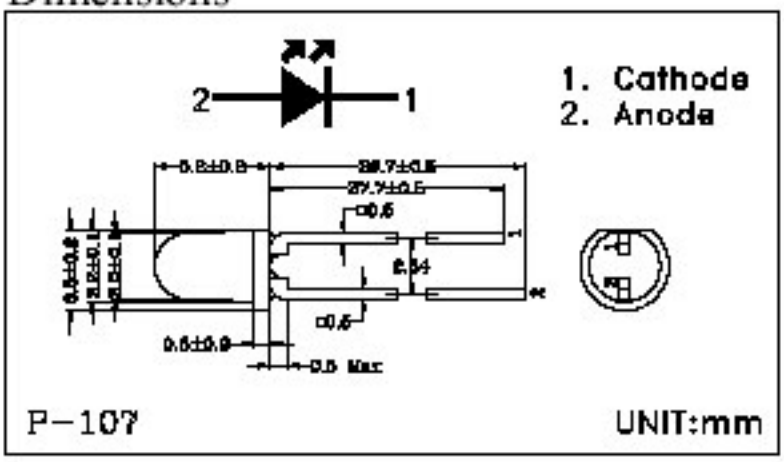
Infrared Emitting Diode

Module No.:

1. General Description:

is a high output power GaAlAs infrared light emitting diode mounted in a clear epoxy end looking package. It allows a broad range of intensity selection. The lens effect of the package allows a radiation half-power angle of 17°.

Dimensions



2. Features

- Compact (∅3mm)
- Narrow beam angle (±17°)
- Capable of pulse operation
- High output power
- Low cost

3. Absolute Maximum Ratings

(Ta=25°C)

Parameter	Symbol	Ratings	Unit
Forward Current	I_F	60	mA
Pulse Forward current *1	I_{FP}	1	A
Reverse Voltage	V_R	4	V
Power Dissipation	P_D	80	mW
Operating Temperature	T_{opr}	-20 ~ +70	°C
Storage Temperature	T_{stg}	-20 ~ +80	°C
Soldering Temperature *2	T_{sol}	260	°C

*1 Pulse width ≤ 100μsec. Duty ratio = 0.01

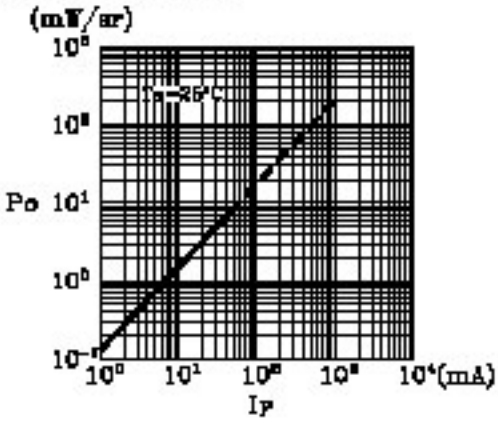
*2 At the position of 2mm from the bottom of the package within 5 seconds.

4. Electro-optical Characteristics

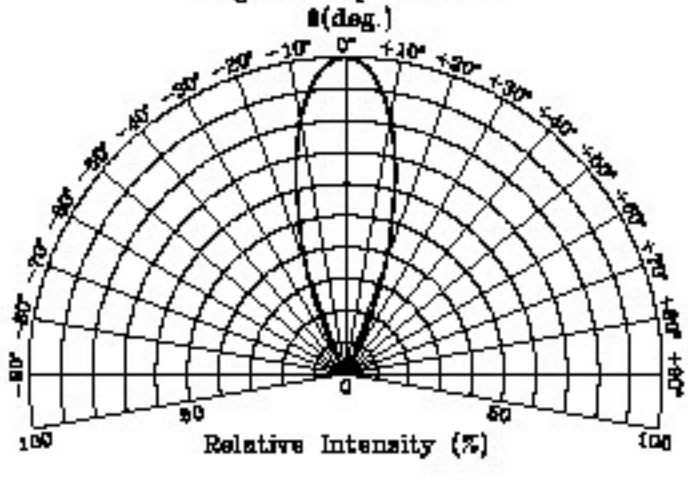
(Ta=25°C)

Parameter	Symbol	Testing Conditions	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F=20mA		1.2	1.5	V
Reverse Current	I_R	V_R=4V			10	μA
Radiant Intensity	Po	I_F=20mA	2.5	3.0		mW/sr
Terminal Capacitance	C_t	f=1MHz		25		pF
Half Power Beam Angle	Δθ			±17		deg.
Peak Emission Wavelength	λp	I_F=40mA		940		nm
Spectral Bandwidth at 50%	Δλ	I_F=40mA		50		nm

Radiant Intensity vs Forward Current



Radiation Diagram



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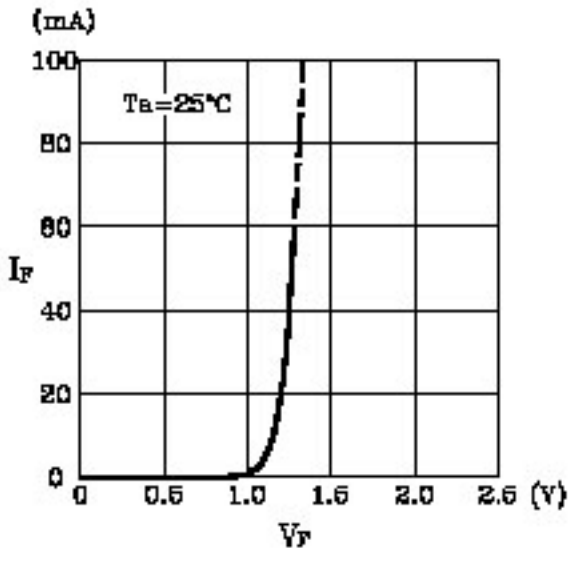
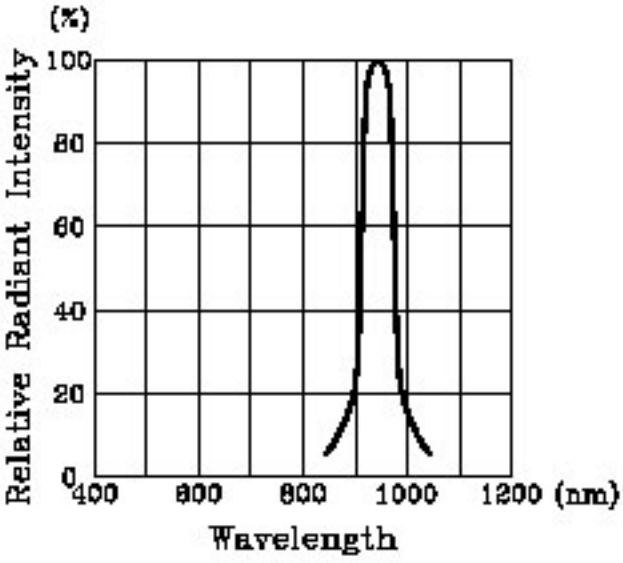
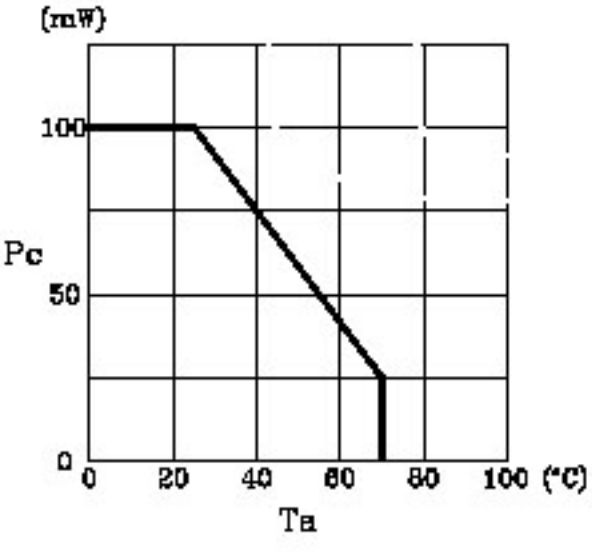
Forward Current vs
Forward Voltage



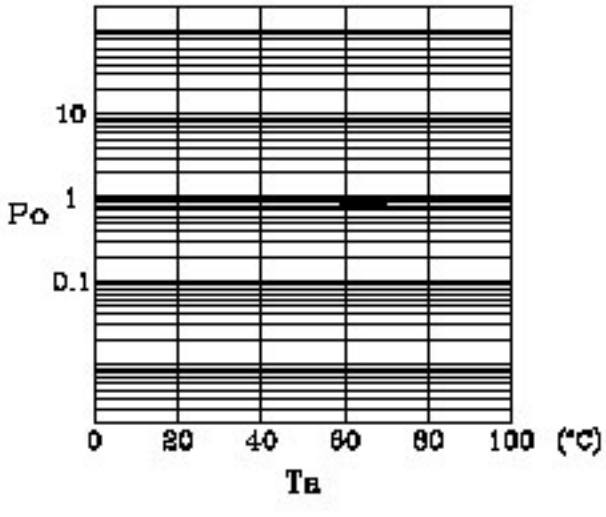
Spectral Distribution



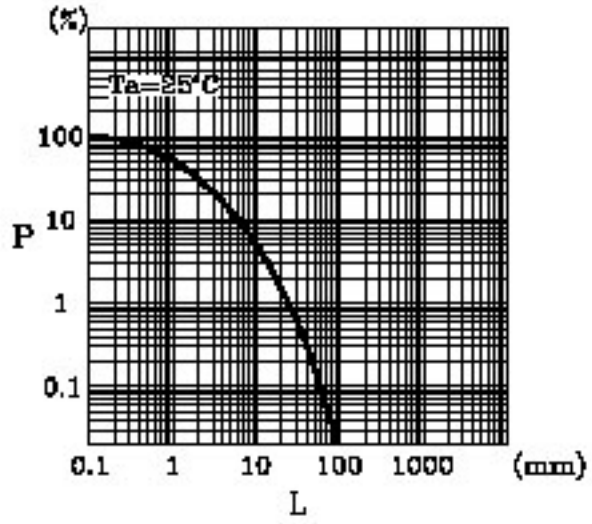
Power Dissipation vs
Ambient Temperature



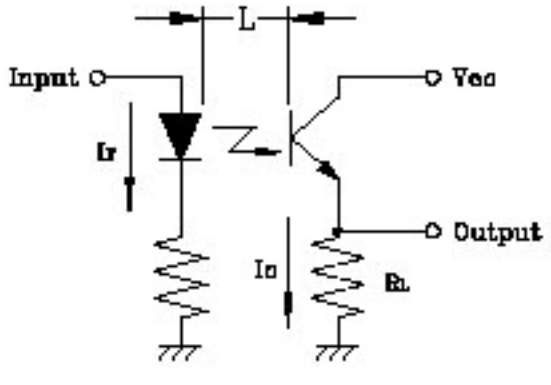
Relative Output power vs
Ambient Temperature



Relative Power vs
Distance to Detector



Distance to Detector Test Conditions



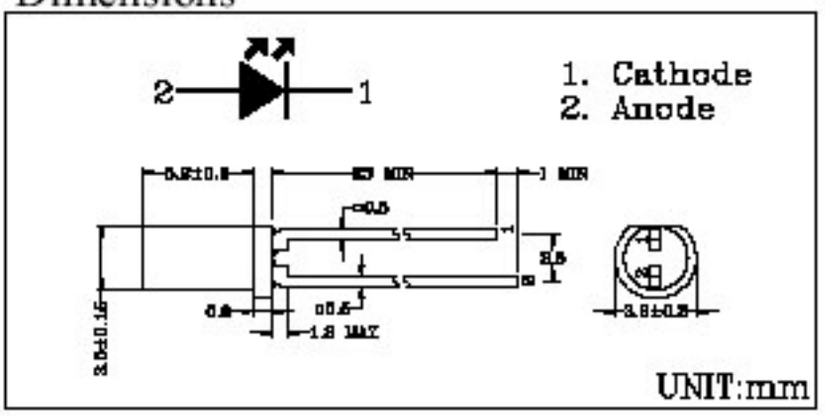
Infrared Emitting Diode

Module No.:

1. General Description:

is a high output power GaAlAs infrared light emitting diode, mounted in a clear epoxy end looking cylinder package. It emits narrow band of radiation peaking at 940nm.

Dimensions



2. Features

- Wide beam angle (±40°)
- Capable of pulse operation
- High output power
- ∅3mm cylinder package (Flat-head)
- Low cost

3. Absolute Maximum Ratings

(Ta=25°C)

Parameter	Symbol	Ratings	Unit
Forward Current	I_F	100	mA
Pulse Forward current *1	I_{FP}	1	A
Reverse Voltage	V_R	5	V
Power Dissipation	P_D	100	mW
Operating Temperature	T_{opr}	-30 ~ +70	°C
Storage Temperature	T_{stg}	-30 ~ +80	°C
Soldering Temperature *2	T_{sol}	260	°C

*1 Pulse width ≤ 100μsec. Time Cycle=10msec.

*2 At the position of 2mm from the bottom of the package within 5 seconds.

4. Electro-optical Characteristics

(Ta=25°C)

Parameter	Symbol	Testing Conditions	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F=100mA		1.4	1.7	V
Reverse Current	I_R	V_R=5V			10	μA
Radiant Intensity	Po	I_F=100mA	5	13		mW/sr
Terminal Capacitance	C_t	f=1MHz		40		pF
Half Power Beam Angle	Δθ			±40		deg.
Peak Emission Wavelength	λp	I_F=50mA		940		nm
Spectral bandwidth at 50%	Δλ	I_F=50mA		45		nm