

Infrared Emitting Diode

2-05-06-14

Module No.: DS05R

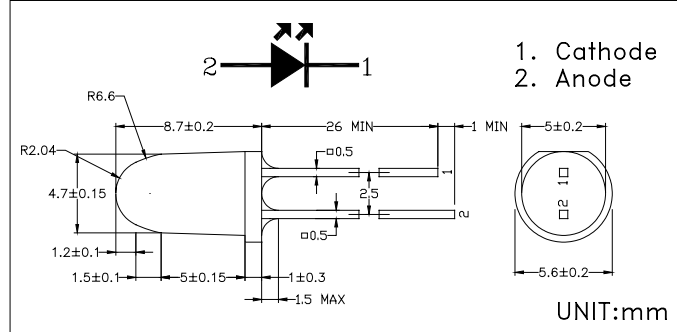
1. General Description:

DS05R is a high output power GaAlAs infrared light emitting diode, mounted in a clear epoxy end looking package. It emits narrow band of radiation peaking at 940nm.

2. Features

- Ultra narrow beam angle
- Good linearity
- Capable of pulse operation
- High output power
- Low cost

Dimensions



3. Absolute Maximum Ratings

($T_a=25^\circ\text{C}$)

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}	-25 ~ +70	$^\circ\text{C}$
Storage Temperature	T_{stg}	-25 ~ +80	$^\circ\text{C}$
Soldering Temperature *2	T_{sol}	260	$^\circ\text{C}$

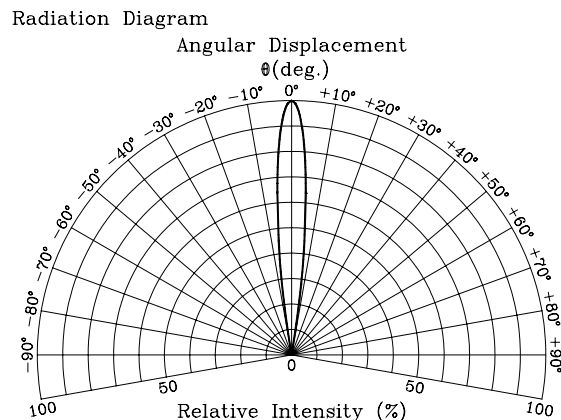
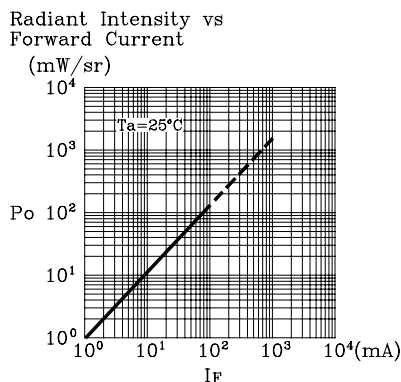
*1 Pulse width $\leq 100\mu\text{sec}$. Duty ratio = 0.01

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

4. Electro-optical Characteristics

($T_a=25^\circ\text{C}$)

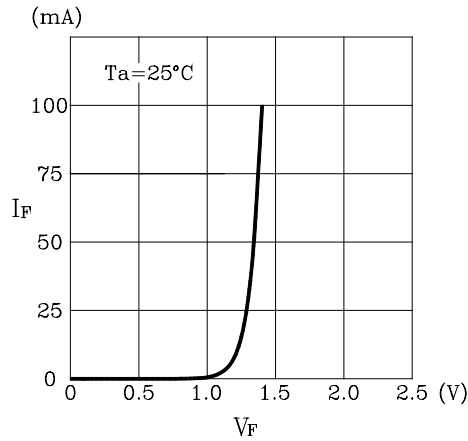
Parameter	Symbol	Testing Conditions	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	$I_F=100\text{mA}$		1.4	1.7	V
Reverse Current	I_R	$V_R=5\text{V}$			10	μA
Radiant Intensity	P_o	$I_F=100\text{mA}$	50	130		mW/sr
Terminal Capacitance	C_t	$f=1\text{MHz}$		25		pF
Half Power Beam Angle	$\Delta\theta$			± 5		deg.
Peak Emission Wavelength	λ_p	$I_F=100\text{mA}$		940		nm
Spectral Bandwidth at 50%	$\Delta\lambda$	$I_F=100\text{mA}$		45		nm



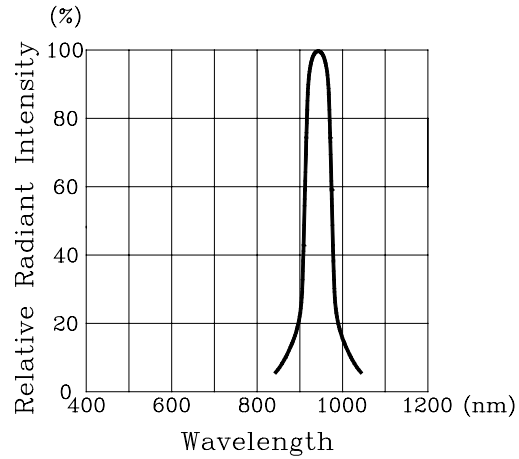
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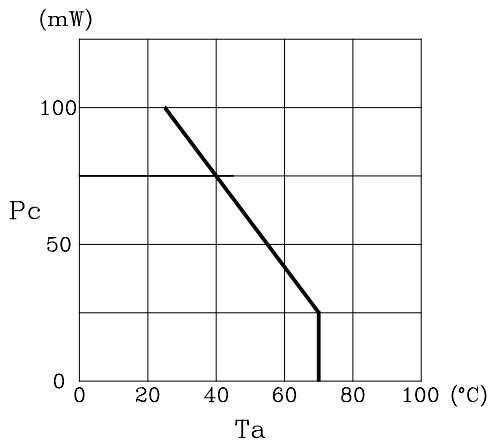
Forward Current vs Forward Voltage



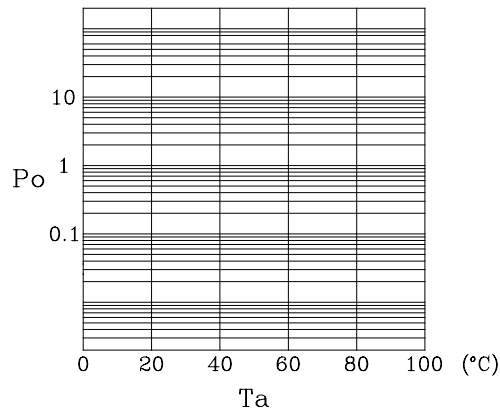
Spectral Distribution



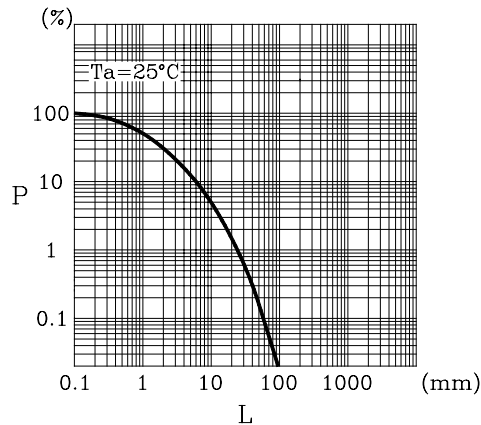
Power Dissipation vs Ambient Temperature



Relative Output power vs Ambient Temperature



Relative Power vs Distance to Detector



Distance to Detector Test Conditions

