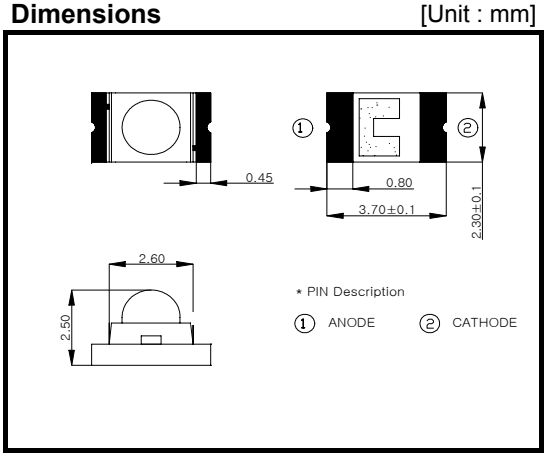
Infrared Emitting Diode(GaAlAs)

KEM5001R

The KEM5001R is GaAlAs infrared emitting diode that is designed for high power, low forward voltage. This device is optimized for speed and efficiency at emission wavelength 870nm and has a high radiant efficiency over a wide range of forward current.

Dimensions [Unit : mm]



Features

- 870nm wavelength
- Low forward voltage
- High power and high reliability
- Available for pulse operating
- Surface Mountable Leadless Package

Applications

- IR Audio and Telephone
- IR Communication
- Optical Switch
- Available for Wireless Digital Data Transmission

Absolute Maximum Ratings

[T_A = 25℃]

Parameter	Symbol	Rating	Unit
Power Dissipation	PD	95	mW
Forward Current	IF	50	mA
Pulse Forward Current *1	IFP	1	A
Reverse Voltage	VR	5	V
Operating Temperature	Topr.	-25~+85	℃
Storage Temperature	Tstg.	-25~+100	℃
Soldering Temperature*2	Tsol	260	℃

*1. Duty ratio=1/100, pulse width=0.1ms

*2. MAX 5sec

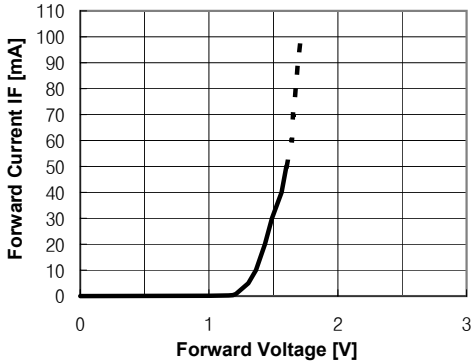
Electro-Optical Characteristics

[T_A = 25℃]

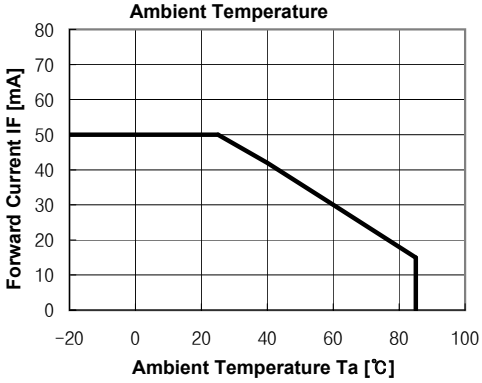
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit.
Forward Voltage	V_F	I_F=50㎃	-	1.6	1.9	V
Reverse Voltage	V_R	I_R=10uA	4	-	-	V
Radiant intensity	P_O	I_F=50㎃	13	16	-	㎽/sr
Peak Emission Wavelength	λp	I_F=20㎃	-	870	-	nm
Spectral Bandwidth 50%	△λ	I_F=20㎃	-	45	-	nm
Half Angle	$\Theta_{1/2}$	I_F=30mA	-	±20	-	deg.
Rise Time	Tr	I_F=50mA	-	15	-	ns

KEM5001R

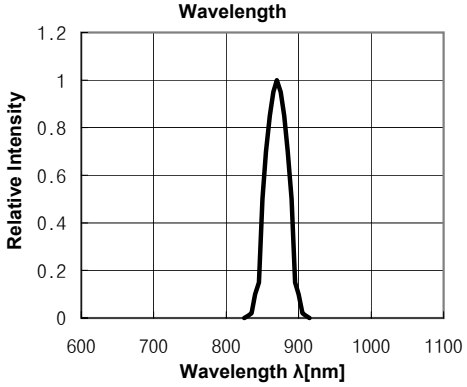
Forward Current Vs Forward Voltage



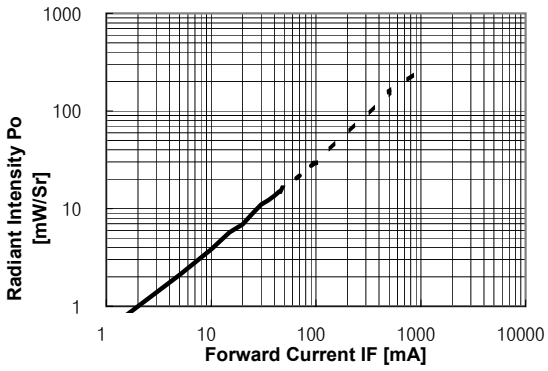
Forward Current Vs Ambient Temperature



Relative Intensity Vs Wavelength

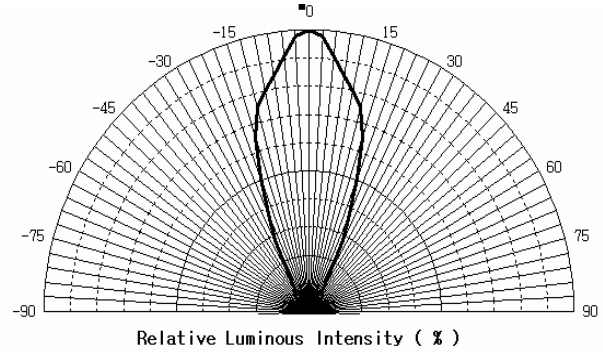


Radiant Intensity Vs Forward current



Radiant Angle

Angle(deg.)



Pulse Current Vs Duty Ratio