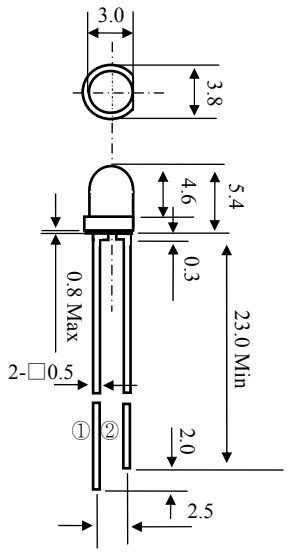
High Speed GaAlAs Infrared Emitter

OPE5985

The **OPE5985** is GaAlAs infrared emitting diode that is designed for high power, low forward voltage and high speed rise / fall time.
This device is optimized for speed and efficiency at emission wavelength 850nm and has a high radiant efficiency over a wide range of forward current.
This device is packaged T1 package and has wide beam angle with lensed package and cup frame. Especially this device is suited as the emitter of data transmission without cable.

DIMENSIONS (Unit : mm)



Tolerance : ±0.2mm

FEATURES
- High speed : 25ns rise time
- 850nm wavelength
- Wide beam angle
- Low forward voltage
- High power and high reliability
- Available for pulse operating

APPLICATIONS
- Emitter of IrDA
- IR Audio and Telephone
- High speed IR communication
- IR LANs
- Available for wireless digital data transmission

STORAGE
- Condition : 5°C~35°C,R.H.60%
- Terms : within 3 months from production date
- Remark : Once the package is opened, the products should be used within a day. Otherwise, it should be keeping in a damp proof box with desiccants.

* Please take proper steps in order to secure reliability and safety in required conditions and environments for this device.

MAXIMUM RATINGS (Ta=25℃)

Item	Symbol	Rating	Unit
Power Dissipation	P_D	80	mW
Forward current	I_F	60	mA
Pulse forward current	I_{FP}	0.5	A
Reverse voltage	V_R	5.0	V
Operating temp.	Topr.	-20~ +70	℃
Soldering temp. *2	Tsol.	240.	℃

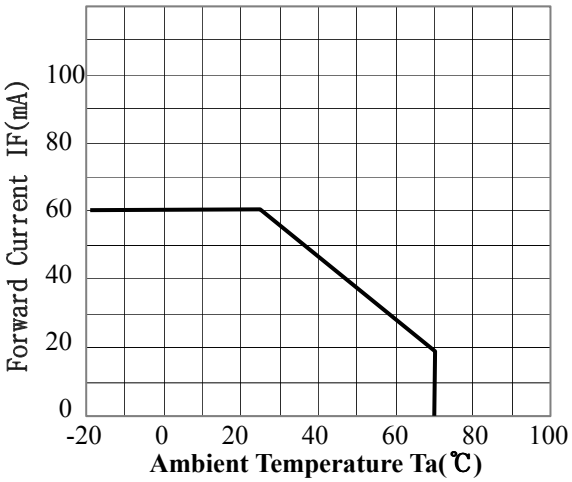
*1.Duty ratio = 1/100, pulse width=0.1ms.
*2.Lead Soldering Temperature (2㎜ from case for 5sec.).

ELECTRO-OPTICAL CHARACTERISTICS (Ta=25℃)

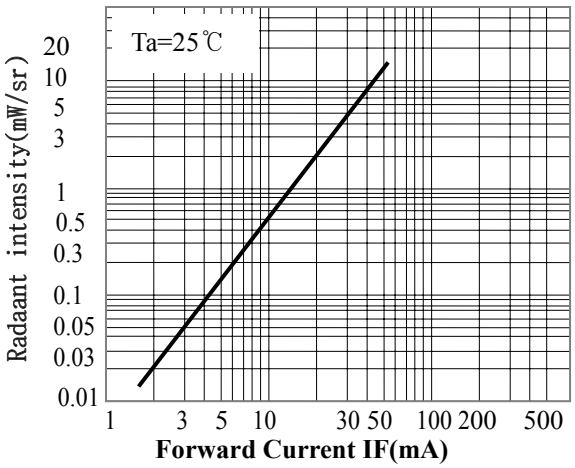
Item	Symbol	Conditions		Min.	Typ.	Max.	Unit
Forward voltage	V_F	I_F=50mA			1.5	2.0	V
Reverse current	I_R	V_R=5V				10	μA
Capacitance	Ct	f=1MHz			20		pF
Radiant intensity	Ie	I_F=50mA	A Rank	15	~	40	mW/sr
			B Rank	40	~	55	
			C Rank	55	~		
Peak emission wavelength	λ_p	I_F=50mA			850		nm
Spectral bandwidth 50%	$\Delta\lambda$	I_F=50mA			45		nm
Half angle	$\Delta\Theta$	I_F=40mA			±25		deg.
Optical rise & fall time(10%~90%)	tr/tf	I_F=50mA			25/13		ns
Cut off frequency *3	fc	I_F=50mA DC +10mA p-p			14		MHz

*3. 10logPo(fc MHz)/Po(0.1 MHz)=-3

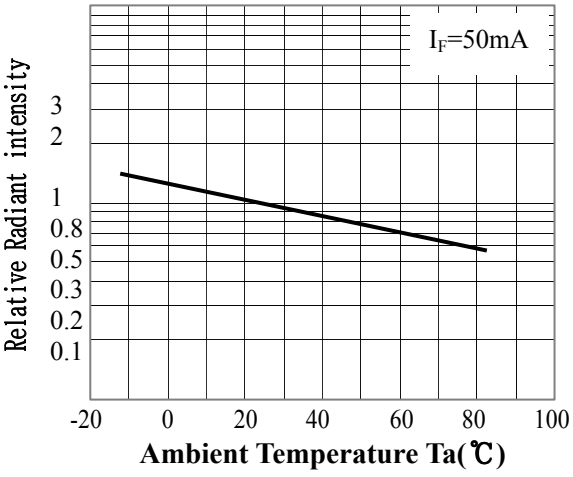
● **FORWARD CURRENT Vs. AMBIENT TEMP.**



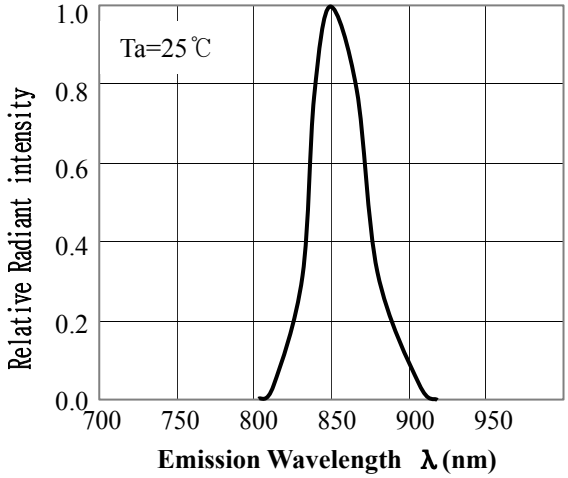
● **RADIANT INTENSITY Vs. FORWARD CURRENT.**



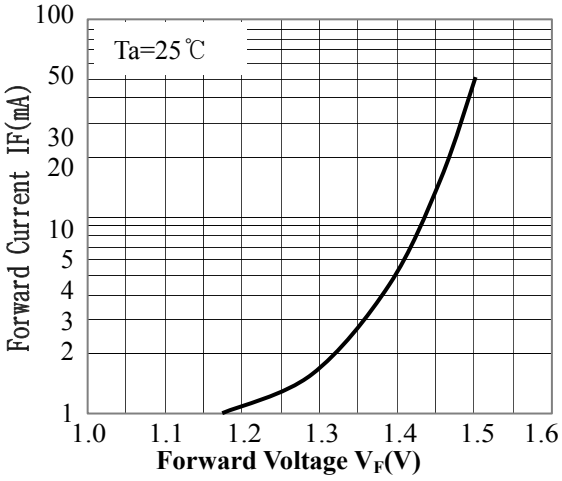
● **RELATIVE RADIANT INTENSITY Vs. AMBIENT TEMP.**



● **RELATIVE RADIANT INTENSITY Vs. EMISSION WAVELENGTH.**



● **FORWARD CURRENT Vs. FORWARD VOLTAGE**



● **ANGULAR DISPLACEMENT Vs RELATIVE RADIANT INTENSITY**

