

# GaAs Infrared Emitter

## OPE5594A

The **OPE5594S** is GaAlAs infrared emitting diode that is designed for high reliability, high radiant intensity and low forward voltage. This device is optimized for efficiency at emission wavelength 940nm and has a high radiant efficiency over a wide range of forward current. This device is packaged T1-3/4 plastic package and has narrow beam angle with lensed package and cup frame.

### FEATURES

- High-output power
- Narrow beam angle
- High reliability and long term stability
- Available for pulse operating

### APPLICATIONS

- Optical emitters
- Optical switches
- Smoke sensors
- IR remote control
- IR sound transmission

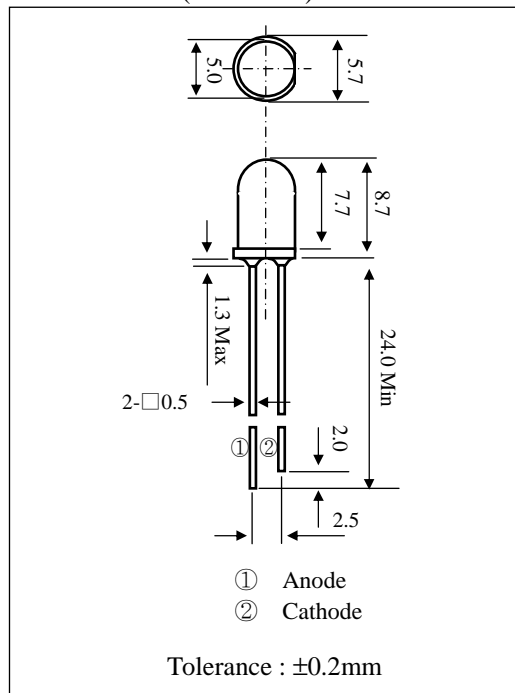
### STORAGE

- 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.

DIMENSIONS (Unit : mm)



### MAXIMUM RATINGS

(Ta=25°C)

Item	Symbol	Rating	Unit
Power Dissipation	$P_D$	150	mW
Forward current	$I_F$	100	mA
Pulse forward current <sup>*1</sup>	$I_{FP}$	1.0	A
Reverse voltage	$V_R$	5.0	V
Operating temp.	$T_{opr.}$	-25~+85	°C
Soldering temp. <sup>*2</sup>	$T_{sol.}$	260.	°C

<sup>\*1</sup>.Duty ratio = 1/100, pulse width=0.1ms.

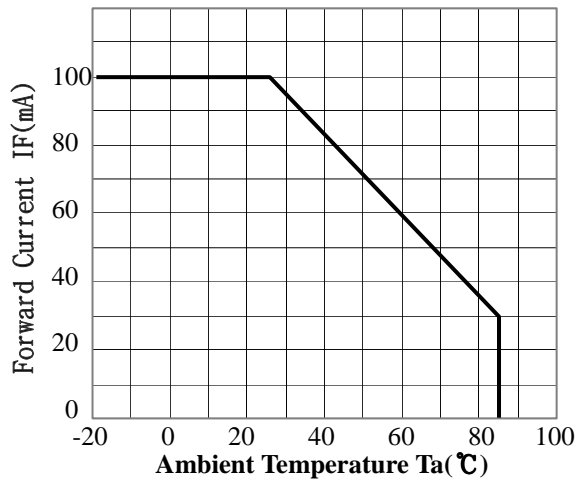
<sup>\*2</sup>.Lead Soldering Temperature (2mm from case for 5sec.).

### ELECTRO-OPTICAL CHARACTERISTICS

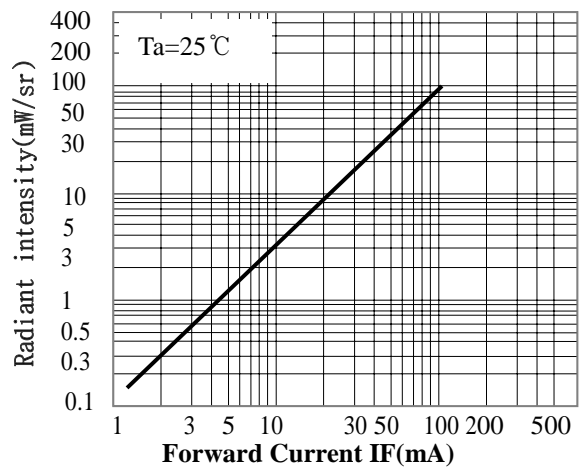
(Ta=25°C)

Item	Symbol	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
Capacitance	$C_t$	$f = 1MHz$		20		pF
Radiant intensity	$I_e$	$I_F=100mA$		80		mW/sr
Peak emission wavelength	$\lambda_p$	$I_F= 50mA$		940		nm
Spectral bandwidth 50%	$\Delta \lambda$	$I_F= 50mA$		45		nm
Half angle	$\Delta \theta$	$I_F=100mA$		±10		deg.

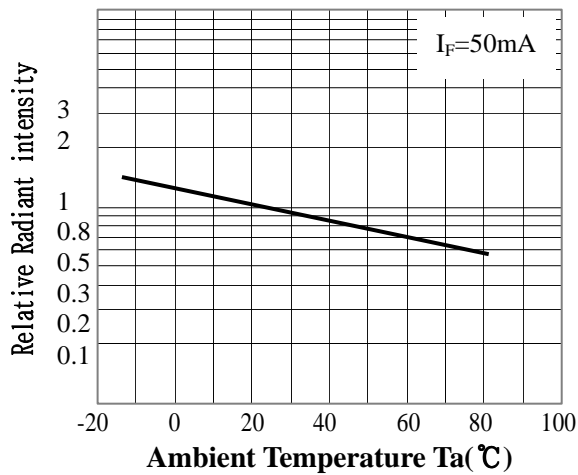
- **FORWARD CURRENT Vs. AMBIENT TEMP.**



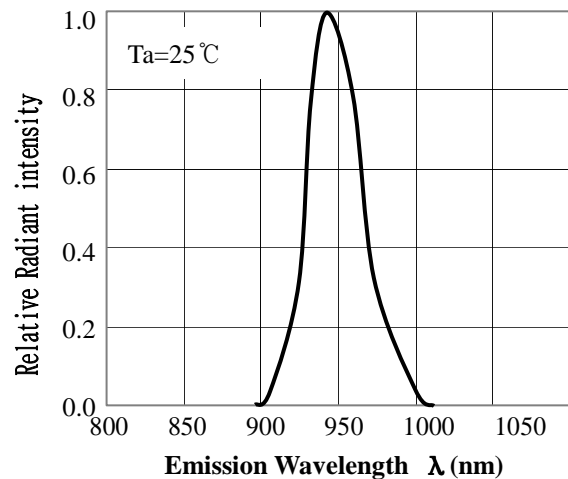
- **RADIANT INTENSITY Vs. FORWARD CURRENT.**



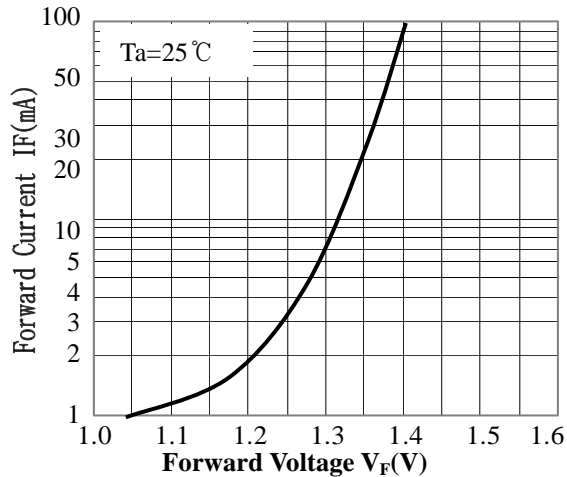
- **RELATIVE RADIANT INTENSITY Vs. AMBIENT TEMP.**



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



- **FORWARD CURRENT Vs. FORWARD VOLTAGE**



- **ANGULAR DISPLACEMENT Vs. RELATIVE RADIANT INTENSITY**

