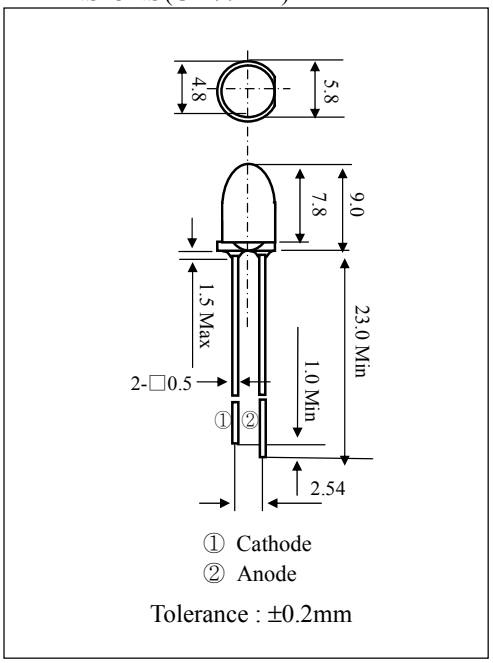
High Speed GaAlAs Infrared Emitter

OPE5T87

The **OPE5T87** 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 880nm 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. Especially this device is suited as the emitter of data transmission without cable.

DIMENSIONS(Unit : mm)



FEATURES
- Ultra high-speed : 25ns rise time
- 880nm wavelength
- Narrow 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°C)

Item	Symbol	Rating	Unit
Power Dissipation	P_D	150	mW
Forward current	I_F	100	mA
Pulse forward current	I_{FP}	1.0	A
Reverse voltage	V_R	4.0	V
Operating temp.	Topr.	-25~ +85	°C
Soldering temp. *2	Tsol.	260.	°C

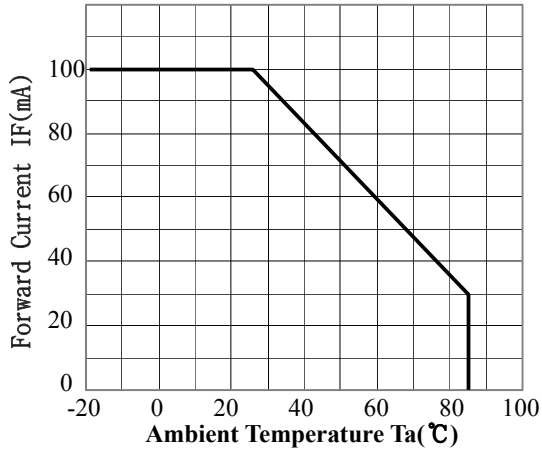
*1.Duty ratio = 1/100, pulse width=0.1ms.
*2.Lead Soldering Temperature (2㎜ from case for 5sec.).

ELECTRO-OPTICALCHARACTERISTICS (Ta=25°C)

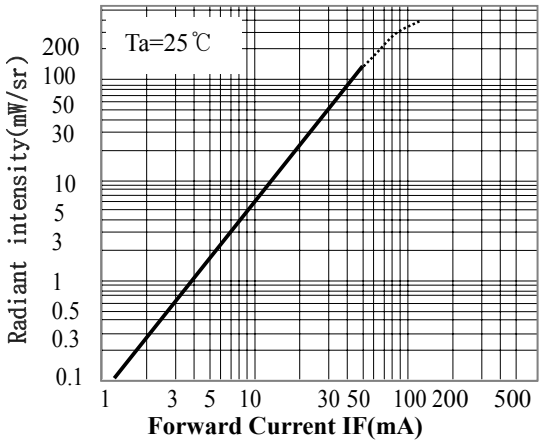
Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Forward voltage	V_F	I_F=50mA		1.5	2.0	V
Reverse current	I_R	V_R=4V			10	μA
Capacitance	Ct	f=1MHz		20		pF
Radiant intensity	Ie	I_F=50mA	50	120		mW/sr
Peak emission wavelength	λ_p	I_F=50mA		880		nm
Spectral bandwidth 50%	$\Delta\lambda$	I_F=50mA		45		nm
Half angle	$\Delta\Theta$	I_F=50mA		±8		deg.
Optical rise & fall time(10%~90%)	tr/tf	I_F=50mA		25/15		ns
Cut off frequency *3	fc	I_F=50mA DC +10mA p-p		14		MHz

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

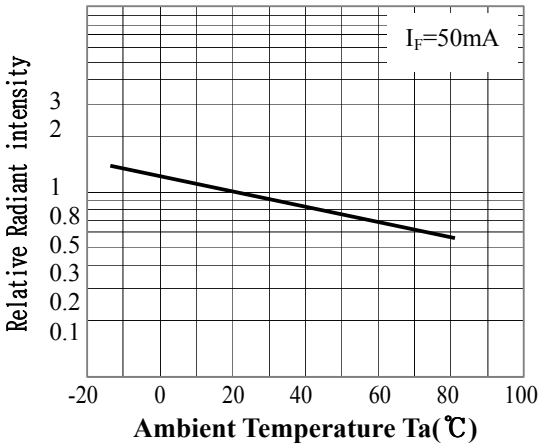
● **FORWARD CURRENT Vs. AMBIENT TEMP.**



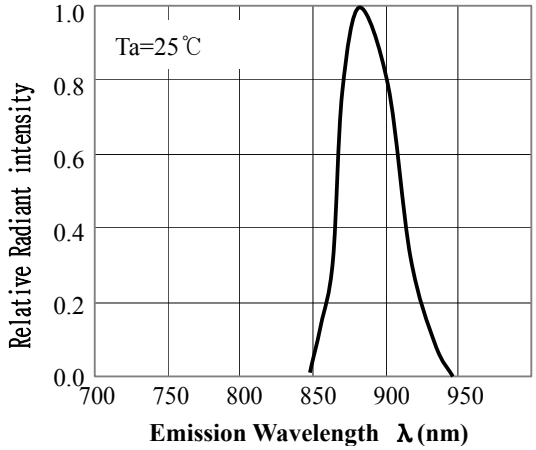
● **RADIANT INTENSITY Vs. FORWARD CURRENT.**



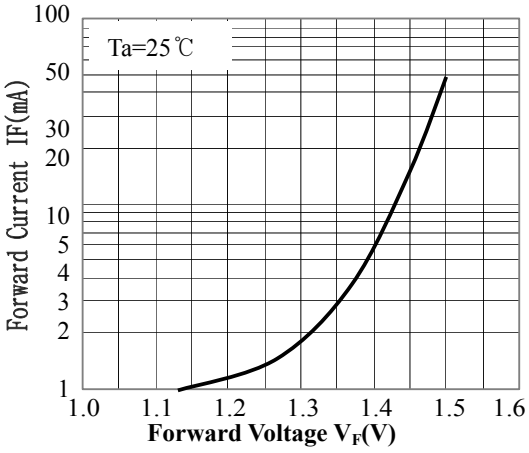
● **RELATIVE RADIANT INTENSITY Vs. AMBIENT TEMP.**



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



● **FORWARD CURRENT Vs. FORWARD VOLTAGE**



● **ANGULAR DISPLACEMENT Vs RELATIVE RADIANT INTENSITY**