

HE8807SG/FL

GaAlAs Infrared Emitting Diodes

HITACHI

ADE-208-998 (Z)
1st Edition
Dec. 2000

Description

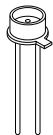
The HE8807SG/FL are single heterojunction structure GaAlAs light emitting diodes with a wavelength of 880 nm.

Features

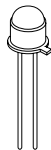
- High output, high efficiency
- Narrow spectral width
- Sharp radiation directivity (HE8807FL)
- Wide radiation directivity (HE8807SG)
- High reliability

Package Type

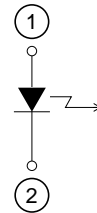
• HE8807SG: SG1



• HE8807FL: FL



Internal Circuit



Absolute Maximum Ratings ($T_C = 25^\circ\text{C}$)

Item	Symbol	Value	Unit
Forward current	I_F	200	mA
Reverse voltage	V_R	3	V
Operating temperature	T_{opr}	-20 to +85	$^\circ\text{C}$
Storage temperature	T_{stg}	-40 to +100	$^\circ\text{C}$

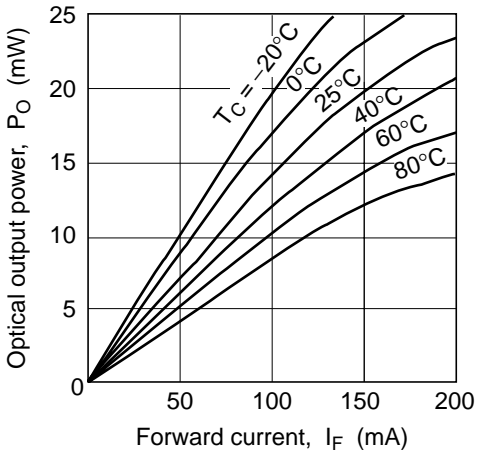
Optical and Electrical Characteristics ($T_C = 25^\circ\text{C}$)

Item		Symbol	Min	Typ	Max	Unit	Test Conditions
Optical output power	HE8807SG	P_O	10	20	—	mW	$I_F = 150\text{ mA}$
	HE8807FL	P_f^*	0.5	1.0	—		$I_F = 20\text{ mA}$
Peak wavelength		λ_p	800	880	900	nm	$I_F = 150\text{ mA}$
Spectral width		$\Delta\lambda$	—	30	—	nm	$I_F = 150\text{ mA}$
Forward voltage		V_F	—	1.7	2.3	V	$I_F = 150\text{ mA}$
Reverse current		I_R	—	—	100	μA	$V_R = 3\text{ V}$
Capacitance		C_t	—	10	—	pF	$V_R = 0\text{ V}$, $f = 1\text{ MHz}$
Rise time		t_r	—	20	—	ns	$I_F = 50\text{ mA}$
Fall time		t_f	—	20	—	ns	$I_F = 50\text{ mA}$

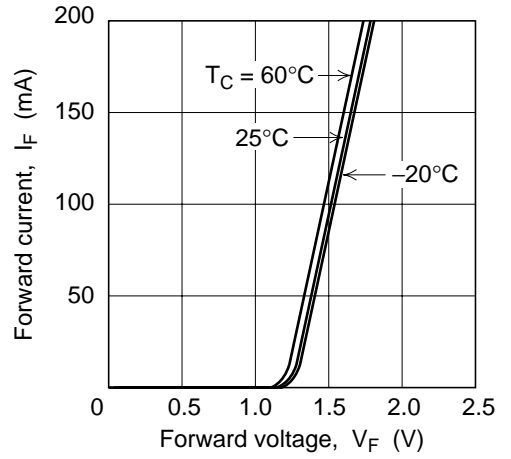
Note: P_f specification: The optical output within 9 degrees of the acceptance angle.

Typical Characteristic Curves

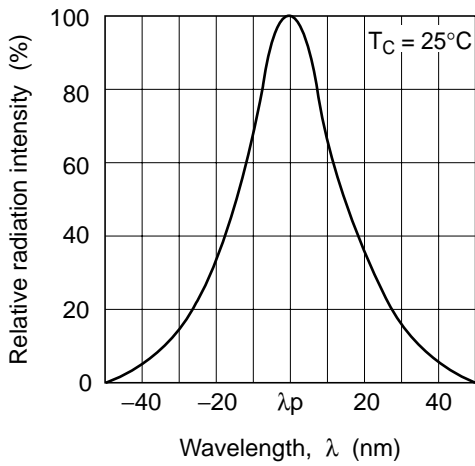
Optical Output Power vs. Forward Current
(HE8807SG)



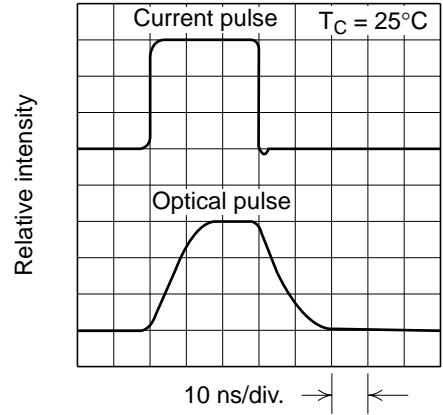
Forward Current vs. Forward Voltage



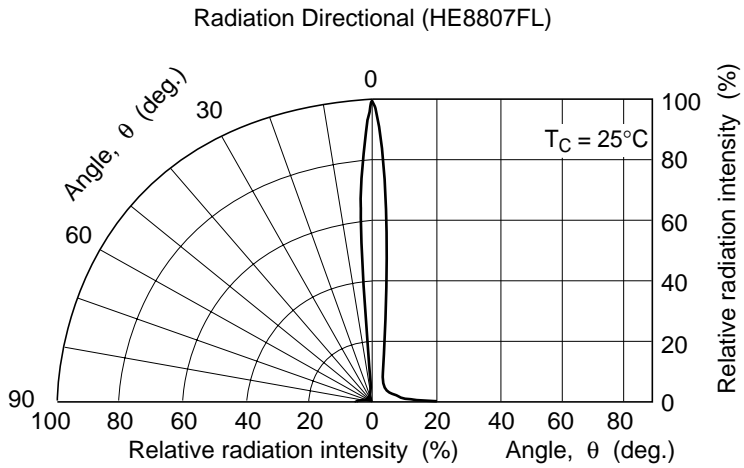
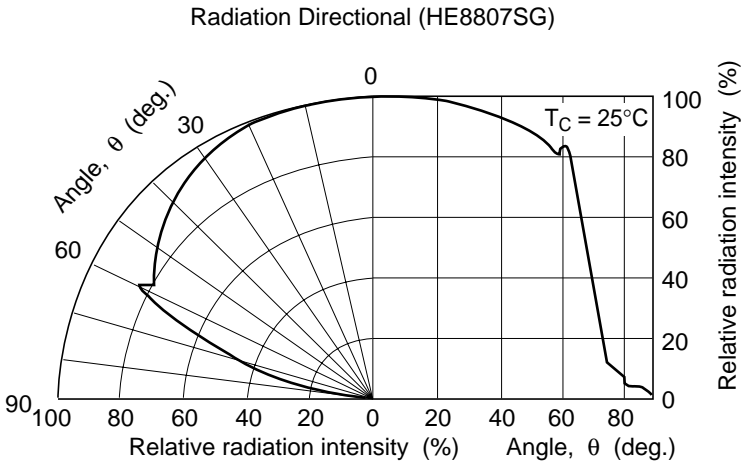
Wavelength Distribution



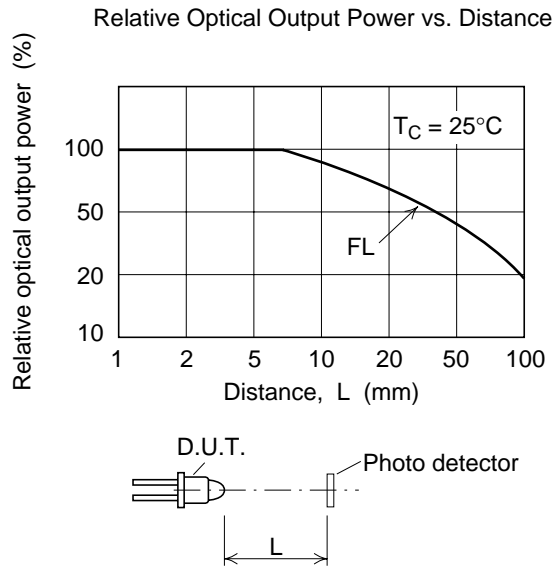
Pulse Response



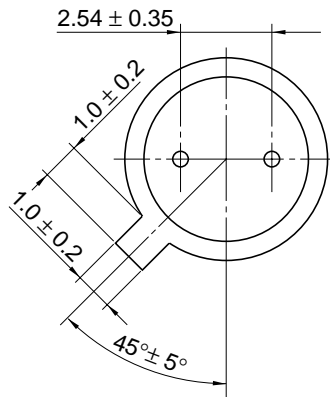
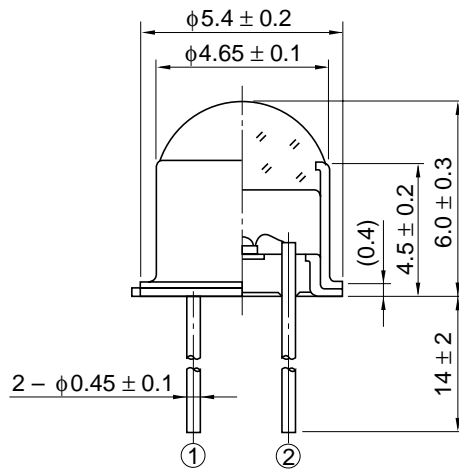
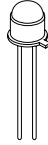
Typical Characteristic Curves (cont)



Typical Characteristic Curves (cont)



Unit: mm



Hitachi Code	IR/FL
JEDEC	—
EIAJ	—
Mass (reference value)	0.27 g

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