

# GFE1300-547

## 1300 nm Edge Emitting LED

### FEATURES

- Typically 15  $\mu$ W into 9/125  $\mu$ m fibre with 1ms pulse at 100 mA
- Pulse at 100 mA
- Spectral width 60 nm
- Bandwidth of 200 MHz
- Operating temperature -10°C to +65°C

### DESCRIPTION

The GFE1300-547 is a high performance 1300 nm Edge emitting LED specifically designed for coupling high power into Monomode optical fibers.

When pulsed at 100mA typical coupled power into 9/125  $\mu$ m fiber is 15  $\mu$ W. Bandwidth is typically 200 MHz.

Where applicable, standard pin orientation aligns pin 2 with the receptacle keyway. This orientation will be supplied unless requested otherwise.

The heatsink tab is removed to allow alignment in some receptacles.

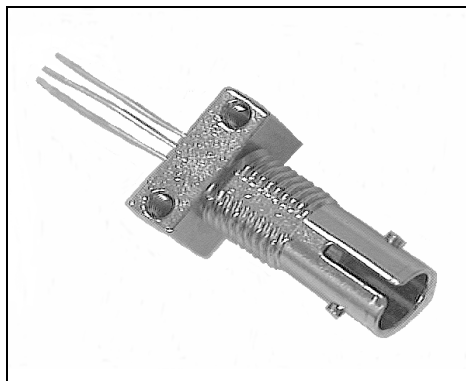
This device is very susceptible to damage by electrostatic discharge.

All dimensions are in millimetres. Tolerances are  $\pm 0.10$  mm unless otherwise stated.

Receptacle illustrated with typical active device installed.

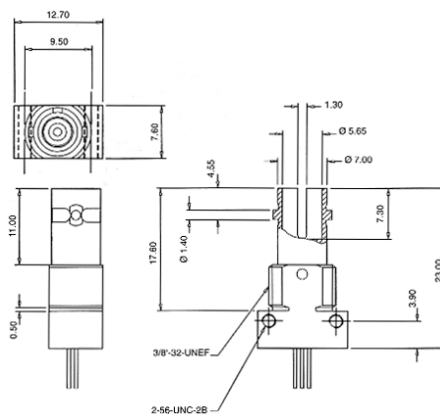
High precision ceramic bore.

Device alignment to fibre tested with AT&T ST2 connector.



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### OUTLINE DIMENSIONS in inches (mm)



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### Pinout

1. Cathode
2. Anode
3. Case

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### ELECTRO-OPTICAL CHARACTERISTICS

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Power (9/125 $\mu$ m NA0.11)	$P_{FIBRE}$	8	15		$\mu$ W	$I_F = 100$ mA
Power (50/125 $\mu$ m NA 0.20)		40	50			1ms pulse
Power (62.5/125 $\mu$ m NA 0.27)			70			
Peak emission wavelength	$\lambda_P$	1270	1300	1330	nm	$I_F = 100$ mA
Spectral width between half power point	$\Delta\lambda$		60	100	nm	$I_F = 100$ mA
-3dB Bandwidth	$f_c$		200		MHz	$I_F = 100$ mA +20 mAdp
Forward Voltage	$V_F$		1.6	2.0	V	$I_F = 100$ mA
Connectorised power repeatability				$\pm 1.5$	dB	(1)

Notes

1. Applies to 9/125  $\mu$ m fibre terminated with a recommended ceramic ferrule in group B receptacles.

### LIMITING VALUES

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Continuous forward current	$I_F$		110		mA	
Repetitive peak forward current	$I_{FRM}$		150		mA	50% duty cycle
Reverse Voltage	$V_R$		1.0		V	
Operating temperature	$T_{AMB}$	-10		+65	$^{\circ}$ C	
Storage temperature	$T_{STG}$	-40		+65	$^{\circ}$ C	
Soldering temperature	$T_{SLD}$		260		$^{\circ}$ C	2 mm form the case for 10 s

### THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Radiant power temperature coefficient	$dP/dT_J$		-3.5		%/ $^{\circ}$ C	
Wavelength temperature coefficient	$d\lambda/dT_J$		0.8		nm/ $^{\circ}$ C	

### ABSOLUTE MAXIMUM RATINGS

(25 $^{\circ}$ C Free-Air Temperature unless otherwise noted)

Storage temperature -55 to +100 $^{\circ}$ C

Case operating temperature -40 to +100 $^{\circ}$ C

Lead solder temperature 260 $^{\circ}$ C, 10s

Continuous forward current 100 mA

(heat sunk)

Reverse voltage 1 V @ 10  $\mu$ A

Stresses greater than those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational section of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods of time may affect reliability.

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### ORDER GUIDE

Description	Catalog Listing
1300 nm Surface emitting LED	GFE1300-547

### CAUTION

The inherent design of this component causes it to be sensitive to electrostatic discharge (ESD). To prevent ESD-induced damage and/or degradation to equipment, take normal ESD precautions when handling this product.



Fig. 1

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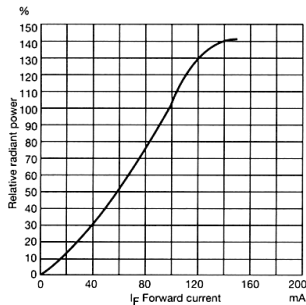


Fig. 2

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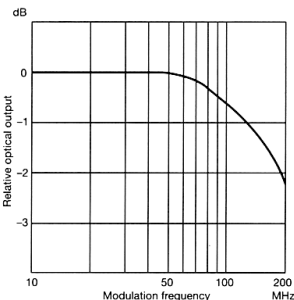


Fig. 3

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