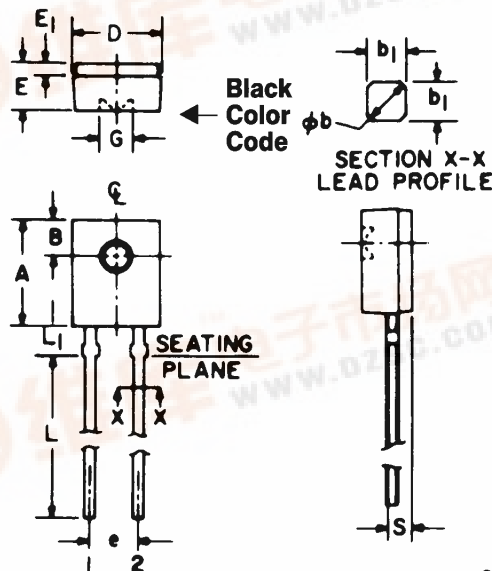




GaAs INFRARED EMITTING DIODE

F5F1

PACKAGE DIMENSIONS



DESCRIPTION

The F5F1 is a 940nm LED encapsulated in a clear, wide angle, sidelooper package.

FEATURES

- Good optical to mechanical alignment
- Mechanically and wavelength matched to the L14Q series phototransistor
- Plastic package with a color stripe for easy recognition from phototransistor
- High irradiance level

ST1334

SYMBOL	MILLIMETERS		INCHES		NOTES
	MIN.	MAX.	MIN.	MAX.	
A	5.59	5.80	.220	.228	
B	1.78	NOM.	.070	NOM.	2
Øb	.60	.75	.024	.030	1
b1	.51	NOM.	.020	NOM.	1
D	4.45	4.70	.175	.185	
E	2.41	2.67	.095	.105	
E1	.58	.69	.023	.027	
e	2.41	2.67	.095	.105	3
G	1.98	NOM.	.078	NOM.	
L	12.7	—	.500	—	
L1	1.40	1.65	.055	.065	
S	.83	.94	.033	.037	3

PACKAGE OUTLINE



ST1604

NOTES:

1. TWO LEADS. LEAD CROSS SECTION DIMENSIONS UNCONTROLLED WITHIN 1.27 mm (.050") OF SEATING PLANE.
2. CENTERLINE OF ACTIVE ELEMENT LOCATED WITHIN .25 mm (.010") OF TRUE POSITION.
3. AS MEASURED AT THE SEATING PLANE.
4. INCH DIMENSIONS DERIVED FROM MILLIMETERS.



GaAs INFRARED EMITTING DIODE

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ Unless Otherwise Specified)

Storage Temperature	-55°C to $+100^\circ\text{C}$
Operating Temperature	-55°C to $+100^\circ\text{C}$
Soldering:	
Lead Temperature (Iron)	240°C for 5 sec. ^(2,3,4,5)
Lead Temperature (Flow)	260°C for 10 sec. ^(2,3,5)
Continuous Forward Current	60 mA
Forward Current (pw, $1\mu\text{s}$; $\leq 33\text{ Hz}$)	3 A
Reverse Voltage	6 Volts
Power Dissipation	100 mW ⁽¹⁾

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ Unless Otherwise Specified)

(All measurements made under pulse conditions.)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
Forward Voltage	V_F	—		1.7	V	$I_F = 60\text{ mA}$
Reverse Breakdown Voltage	V_R	6		—	V	$I_R = 10\text{ }\mu\text{A}$
Reverse Leakage Current	I_R	—		10	μA	$V_R = 5\text{ V}$
Peak Emission Wavelength	λ_p		940		nm	$I_F = 100\text{ mA}$
Emission Angle at $\frac{1}{2}$ Power	θ		± 35		Degrees	
Radiant Intensity	I_e	0.28		—	mW/sr	$I_F = 20\text{ mA}^{(6)}$

NOTES

1. Derate power dissipation linearly $1.33\text{ mW}/^\circ\text{C}$ above 25°C ambient.
2. RMA flux is recommended.
3. Methanol or Isopropanol alcohols are recommended as cleaning agents.
4. Soldering iron tip $\frac{1}{16}$ " (1.6 mm) minimum from housing.
5. As long as leads are not under any stress or spring tension.
6. I_e measured with a 0.45 cm aperture placed 1.6 cm from the tip of the lens on the lens centerline perpendicular to the plane of the leads.

TYPICAL CHARACTERISTICS

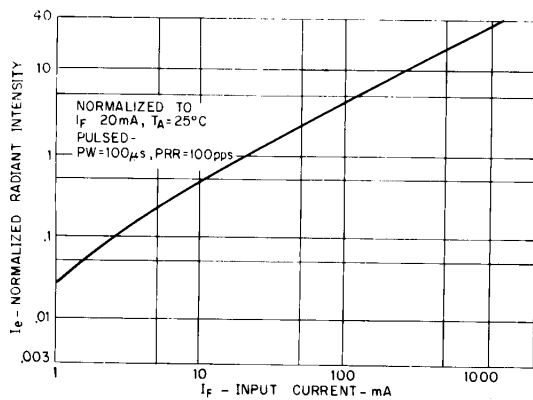


Fig. 1. Radiant Intensity vs. Input Current

ST1033

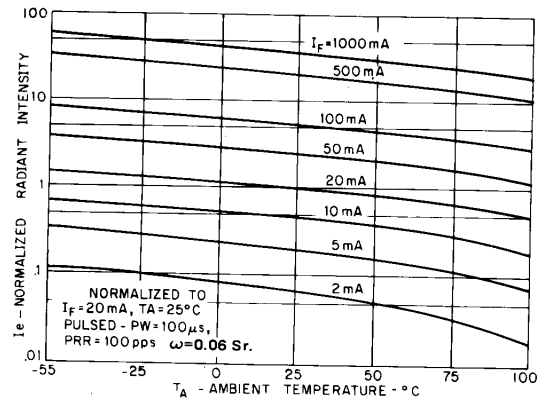


Fig. 2. Radiant Intensity vs. Temperature

ST1038

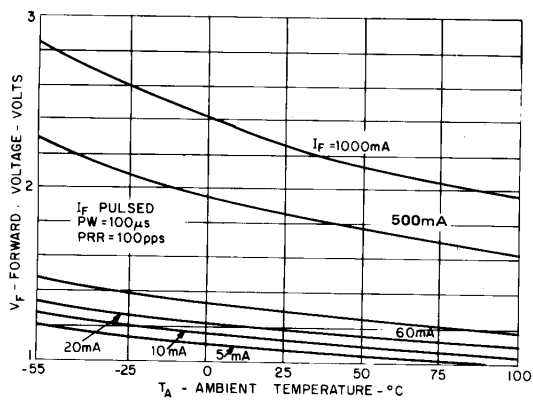


Fig. 3. Forward Voltage vs. Temperature

ST1034

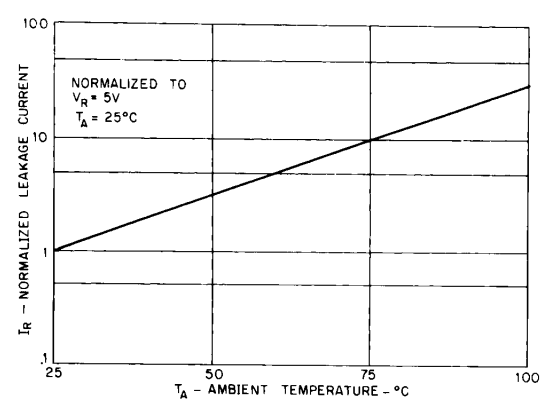


Fig. 4. Leakage Current vs. Temperature

ST1037

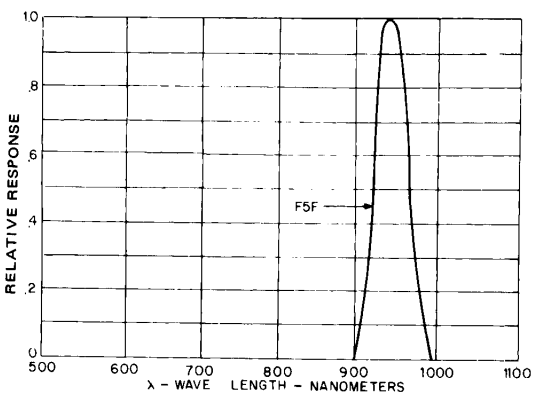


Fig. 5. Spectral Response

ST1035

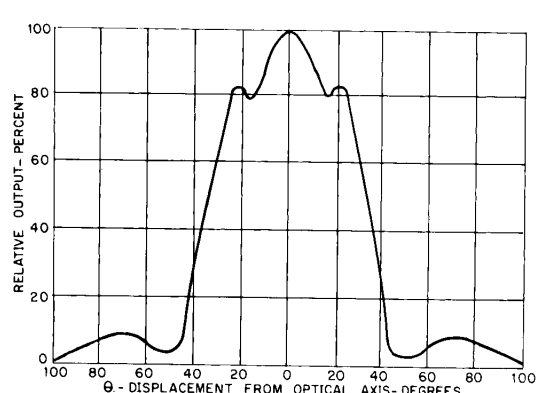


Fig. 6. Typical Radiation Pattern

ST1036