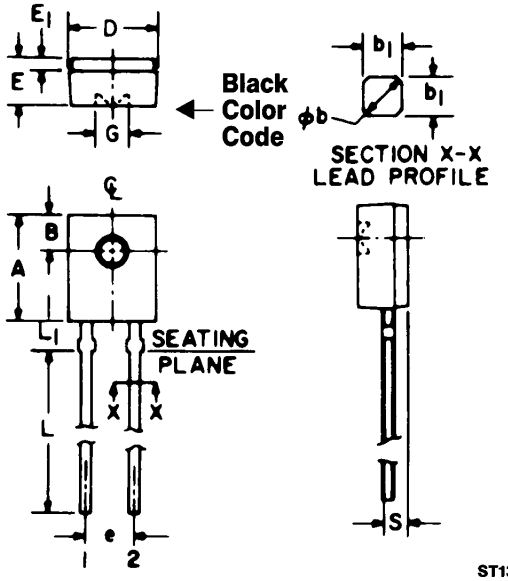
FAIRCHILD
SEMICONDUCTOR™

GaAs INFRARED EMITTING DIODE

F5F1

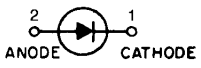
PACKAGE DIMENSIONS



ST1334

SYMBOL	MILLIMETERS		INCHES		NOTES
	MIN.	MAX.	MIN.	MAX.	
A	5.59	5.80	.220	.228	
B	1.78	NOM.	.070	NOM.	2
Ⓜb	.60	.75	.024	.030	1
b_1	.51	NOM.	.020	NOM.	1
D	4.45	4.70	.175	.185	
E	2.41	2.67	.095	.105	
E_1	.58	.69	.023	.027	
e	2.41	2.67	.095	.105	3
G	1.98	NOM.	.078	NOM.	
L	12.7	—	.500	—	
L_1	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.

DESCRIPTION

The F5F1 is a 940nm LED encapsulated in a clear, wide angle, sidelooker 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

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ABSOLUTE MAXIMUM RATINGS (T_A = 25°C Unless Otherwise Specified)

Storage Temperature ..... −55°C to +100°C
Operating Temperature ..... −55°C to +100°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, 1μS; ≤ 33 Hz) ..... 3 A
Reverse Voltage ..... 6 Volts
Power Dissipation ..... 100 mW[1]

ELECTRICAL CHARACTERISTICS (T_A = 25°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 mA
Reverse Breakdown Voltage	V_R	6		—	V	I_R = 10 μA
Reverse Leakage Current	I_R	—		10	μA	V_R = 5 V
Peak Emission Wavelength	λ_p		940		nm	I_F = 100 mA
Emission Angle at ½ Power	θ		±35		Degrees	
Radiant Intensity	Ie	0.28		—	mW/sr	I_F = 20 mA[6]

NOTES

1. *Derate power dissipation linearly 1.33 mW/°C above 25°C ambient.*
2. *RMA flux is recommended.*
3. *Methanol or Isopranol alcohols are recommended as cleaning agents.*
4. *Soldering iron tip 1/16" (1.6 mm) minimum from housing.*
5. *As long as leads are not under any stress or spring tension.*
6. *Ie 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.*

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TYPICAL CHARACTERISTICS

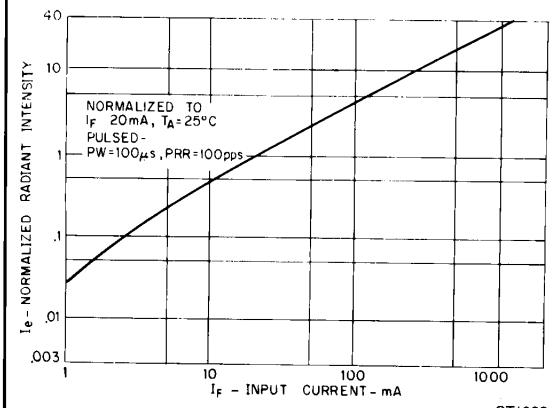

Fig. 1. Radiant Intensity vs. Input Current ST1033

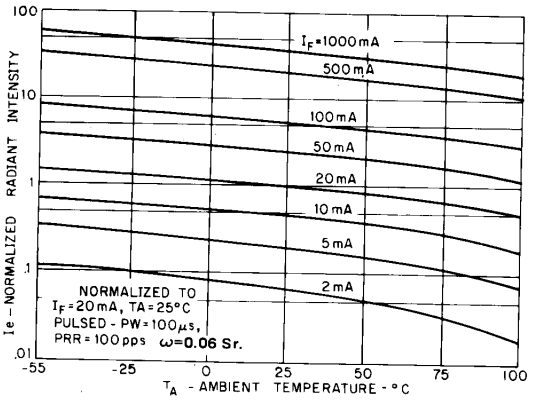

Fig. 2. Radiant Intensity vs. Temperature ST1038

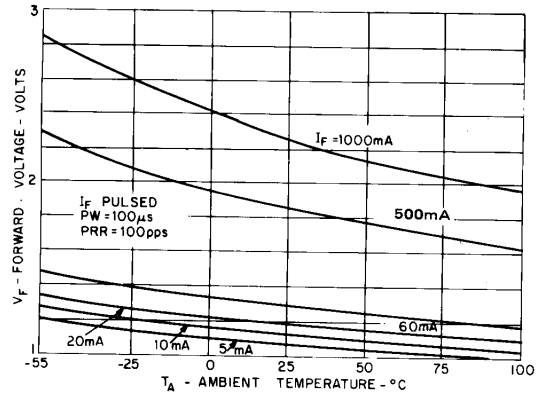

Fig. 3. Forward Voltage vs. Temperature ST1034

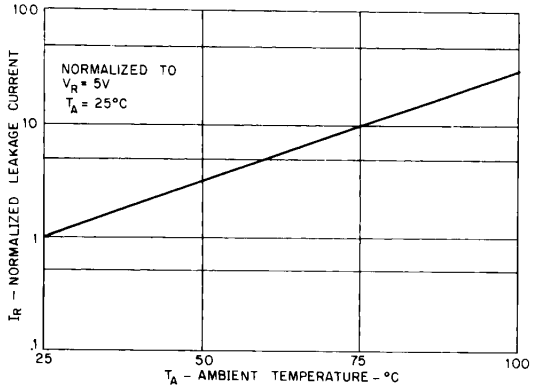

Fig. 4. Leakage Current vs. Temperature ST1037

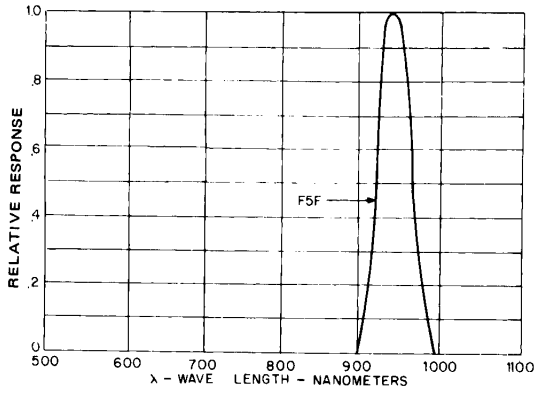

Fig. 5. Spectral Response ST1035

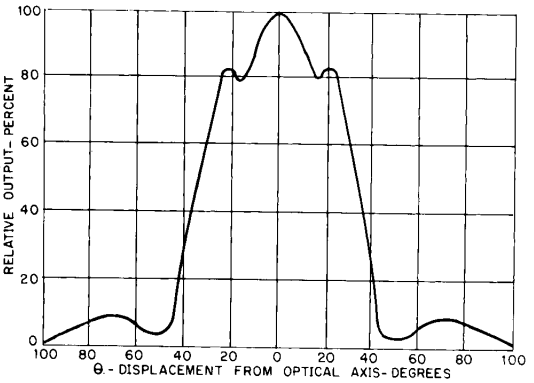

Fig. 6. Typical Radiation Pattern ST1036

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2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

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