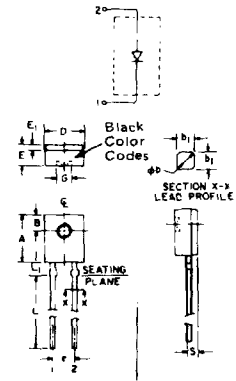


F5F1

Infrared Emitter Gallium Arsenide Infrared Emitting Diode

The F5F1 is a Gallium-Arsenide, infrared emitting diode which emits non-coherent, infrared energy with a peak wavelength of 940 nanometers. It is packaged in a clear, side looking, epoxy encapsulant.



absolute maximum ratings: (25°C) (unless otherwise specified)

VOLTAGES	SYMBOL	MIN.	MAX.	UNITS
Reverse Voltage	V_R	6		V
CURRENT				
Forward Current (continuous)	I_F	60		mA
Forward Current (Peak, pw = 1μs, PRR ≤ 300pps)	I_F	3		A
DISSIPATION				
Power Dissipation*	P_T	100		mW
TEMPERATURES				
Junction Temperature	T_J	-55 to +100		°C
Storage Temperature	T_{STG}	-55 to +100		°C
Lead Soldering Temperature (5 seconds maximum, 1.6mm from case)	T_L	260		°C

SYM	MILLI-METERS		INCHES		NOTES
	MIN	MAX	MIN	MAX	
A	5.69	5.80	.220	.228	
B	1.78	NOM.	.070	NOM.	2
∅D	.60	.75	.024	.030	1
D1	.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

*Derate 1.33mW/°C above 25°C ambient

NOTES

- Two leads. Lead cross section dimensions uncontrolled within 1.27 MM (.050") of seating plane.
- Centerline of active element located within .25 MM (.010") of true position.
- As measured at the seating plane.
- Inch dimensions derived from millimeters.

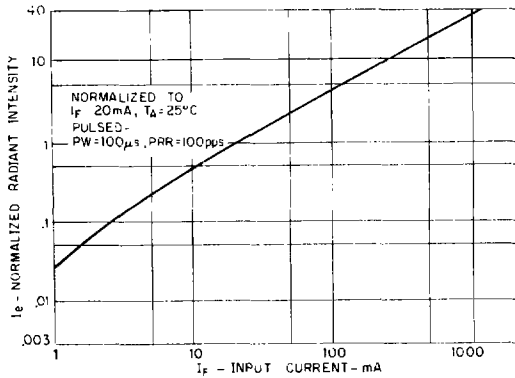
electrical characteristics: (25°C)

	SYMBOL	MIN.	TYP.	MAX.	UNITS
Reverse Breakdown Voltage, $I_R = 10\mu A$	V_{IBRR}	6	—	—	V
Forward Voltage, $I_F = 60mA$	V_F	—	1.5	1.7	V
Reverse Leakage Current, $V_R = 5V$	I_R	—	—	100	nA
Capacitance, $V = 0, f = 1MHz$	C_i	—	30	—	pF

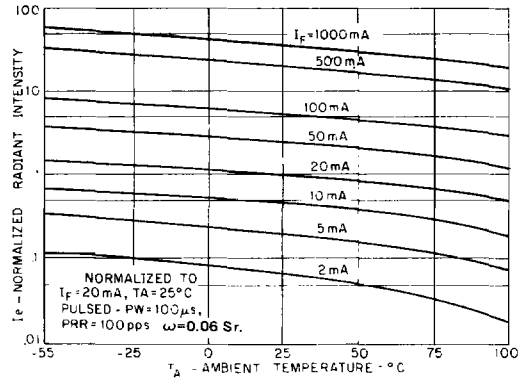
optical characteristics:

Radiant Intensity, $I_F = 20mA, \omega = 0.06sr^+$	I_c	0.28	—	—	mW/sr
Peak Emission Wavelength, $I_F = 60mA$	λ_p	935	—	955	nm
Spectral Bandwidth — 50%	$\Delta\lambda$	—	—	60	nm
Half Intensity Beam Angle	θ_{HI}	—	30	—	deg.

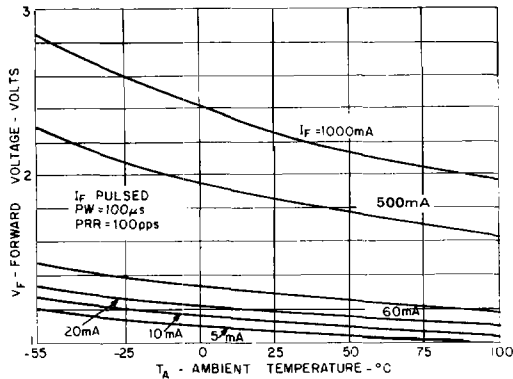
+ I_c measured with a 0.45cm aperture placed 1.6cm from the tip of the lens, on the lens center line perpendicular to the plane of the leads.



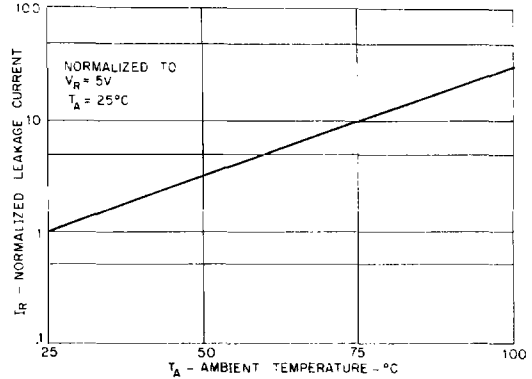
1. RADIANT INTENSITY VS. INPUT CURRENT



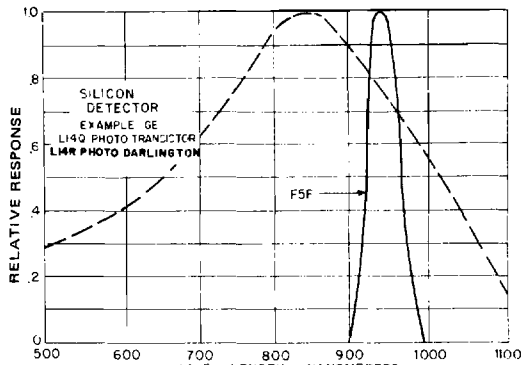
2. RADIANT INTENSITY VS. TEMPERATURE



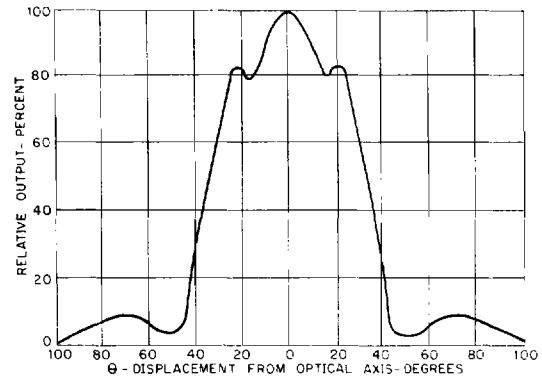
3. FORWARD VOLTAGE VS. TEMPERATURE



4. LEAKAGE CURRENT VS. TEMPERATURE



5. SPECTRAL RESPONSE



6. TYPICAL RADIATION PATTERN

10