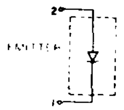
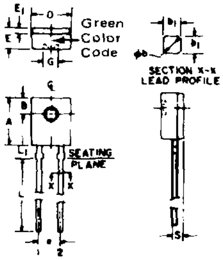
F5G1

Infrared Emitter
Gallium Aluminum Arsenide Infrared Emitting Diode



The F5G1 is a Gallium-Aluminum-Arsenide, infrared emitting diode which emits non-coherent, infrared energy with a peak wavelength of 880 nanometers. This device will provide a significant increase in system efficiency, when used with silicon detectors, compared to GaAs infrared emitting diodes. It is encapsulated in a clear side looking, epoxy package with an integral recessed lens.



SYM	MILLI-METERS		INCHES		NOTES
	MIN	MAX	MIN	MAX	
A	5.59	5 80	220	.228	
B	1 78	NOM.	070	NOM.	2
ϕb	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

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

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

VOLTAGES	SYMBOL		UNITS
Reverse Voltage	V_R	6	V
CURRENT			
Forward Current (continuous)	I_F	50	mA
Forward Current (Peak, pw = 1 μs PRR ≦ 300 pps)	I_F	2	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

*Derate 1.33mW/°C above 25°C ambient

electrical characteristics: (25° C)

	SYMBOL	MIN.	TYP.	MAX.	UNITS
Reverse Breakdown Voltage (I_R = 10 μA)	$V_{(BR)R}$	6	—	—	V
Forward Voltage, I_F = 60mA (pulsed)	V_F	—	1.5	1.85	V
I_F = 20mA	V_F	—	—	1.7	V
Reverse Leakage Current, V_R = 5V	I_R	—	—	10	μA
Capacitance, V = 0, f = 1MHz	C_t	—	30	—	pF

optical characteristics:

Radiant Intensity, I_F = 20mA, ω = 0.06sr†	I_e	0.6	—	—	mW/sr
Peak Emission Wavelength, I_F = 20mA	λ_P		880		nm
Spectral Bandwidth — 50%	$\Delta\lambda$		50		nm
Half Intensity Beam Angle	θ_{HI}		35		deg.

†I_e 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.

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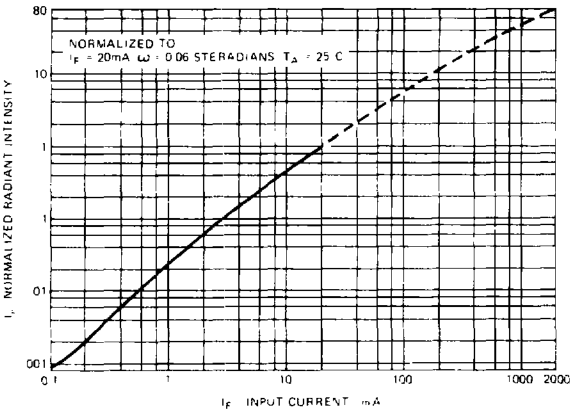
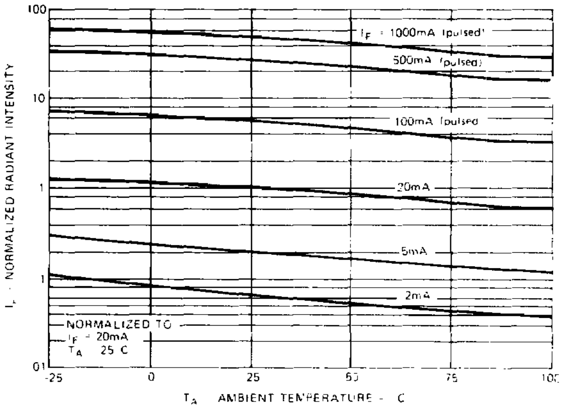
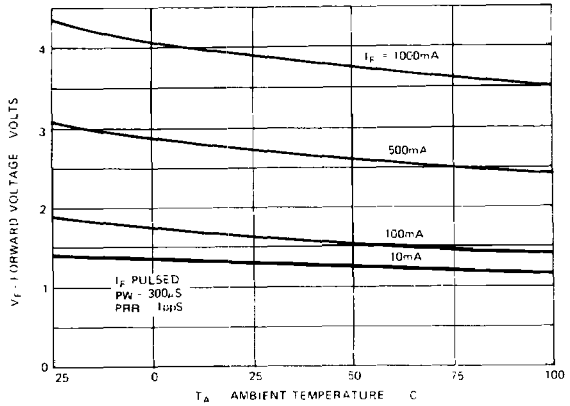
TYPICAL CHARACTERISTICS



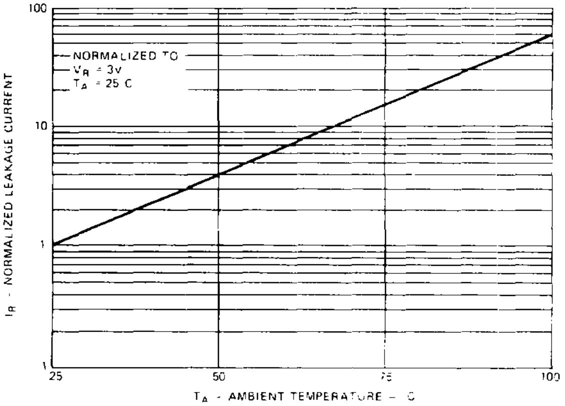
1. RADIANT INTENSITY VS. INPUT CURRENT



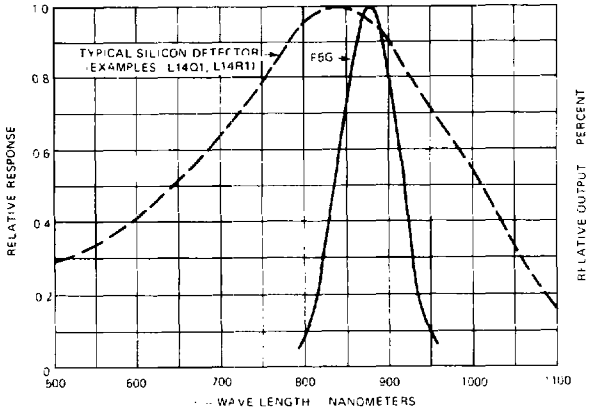
2. RADIANT INTENSITY VS. TEMPERATURE



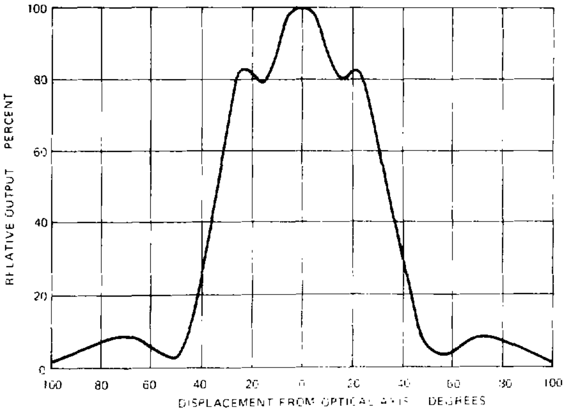
3. FORWARD VOLTAGE VS. TEMPERATURE



4. LEAKAGE CURRENT VS. TEMPERATURE



5. SPECTRAL RESPONSE



6. TYPICAL RADIATION PATTERN