

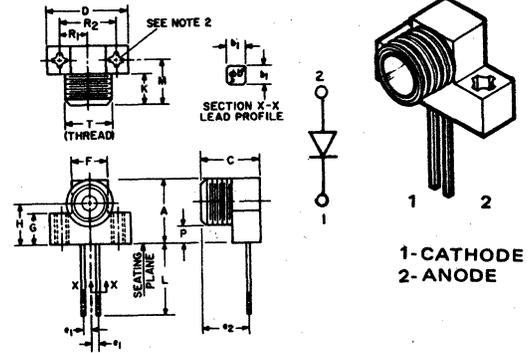


# SOLID STATE OPTOELECTRONICS

## Fiber Optic Emitters GFOE1A1 — GFOE1A2

Infrared Emitting Diodes for Fiber Optic Systems

The General Electric GFOE1A1 and GFOE1A2 are gallium arsenide, light emitting diodes, which emit non-coherent, infrared energy with a peak wavelength of 940 nanometers. They are packaged in a housing designed to optimize fiber coupling efficiency, reliability, and cost. They mate directly with AMP OPTIMATE™ fiber optic connectors for easy interconnection and use. Mounting is compatible with SAE and metric fasteners of both through hole and self-tapping types.



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

Voltage		
Reverse Voltage	$V_R$	6V
Currents		
Forward Current (continuous)	$I_F$	60 mA
Forward Current (pw 1 $\mu$ s, 200 Hz)	$I_F$	3 A
Dissipation		
Power Dissipation (TA = 25°C)*	$P_T$	100 mW
Temperatures		
Operating Temperature	$T_{OP}$	-55°C to +85°C
Storage Temperature	$T_{STG}$	-55°C to +100°C
Lead Soldering Time	$T_L$	5 seconds at 260°C

\*Derate 1.66 mW/°C above 25°C ambient.

SYM.	MILLIMETERS		INCHES		NOTES
	MIN.	MAX.	MIN.	MAX.	
A	10.67	11.17	.420	.440	
$\phi b$	.61	.66	.024	.026	1
b1	.50	NOM.	.020	NOM.	1
C	9.88	10.26	.389	.404	
D	13.47	13.97	.530	.550	
$e_1$	1.27	NOM.	.050	NOM.	
$e_2$	7.93	8.07	.312	.318	
F	5.87	6.12	.231	.241	
G	5.08	5.58	.200	.220	
H	6.84	7.08	.269	.279	
K	5.11	5.25	.201	.207	
L	12.22	—	.481	—	
M	7.73	7.97	.304	.314	
P	3.00	REF.	.118	REF.	
$R_1$	4.70	4.82	.185	.190	
$R_2$	9.40	9.65	.370	.380	
T	5/16-32 NEF 2A				

**NOTES:**

- Two Leads.
- Mounting Holes see attached drawing SAE 0-80 or M2x0.4 or Self-Tapping Screws.

### electrical characteristics (25°C unless otherwise specified)

	SYMBOL	MIN.	TYP.	MAX.	UNITS
Reverse Breakdown Voltage ( $I_R = 10 \mu A$ )	$V_{(BR)R}$	6	—	—	V
Forward Voltage ( $I_F = 50 mA$ )	$V_F$	—	—	1.7	V
Reverse Leakage Current ( $V_R = 5V$ )	$I_R$	—	—	100	nA
Capacitance ( $V = 0, F = 1 MHz$ )	$C_i$	—	30	—	Pf

### optical characteristics (25°C unless otherwise specified)

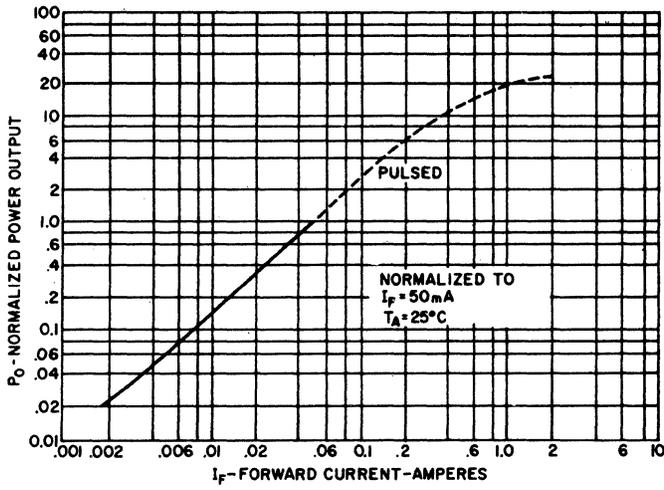
	SYMBOL	MIN.	TYP.	MAX.	UNITS
Fiber Power Output (Note 1) ( $I_F = 50 mA$ )	GFOE1A1 $P_O$	100	—	—	$\mu W$
	GFOE1A2 $P_O$	60	—	—	$\mu W$
Fiber Power Output (Note 2) ( $I_F = 50 mA$ )	GFOE1A1 $P_O$	45	—	—	$\mu W$
	GFOE1A2 $P_O$	25	—	—	$\mu W$
Peak Emission Wavelength ( $I_F = 50 mA$ )	$\lambda_p$	—	940	—	nm
Spectral Shift with Temperature		—	.28	—	nm/°C
Spectral Bandwidth 50%	$\Delta\lambda$	—	60	—	nm
Rise Time 0-90% of Output, $I_F=50mA, Z_s \leq 50 \Omega$	$t_s$	—	300	—	nsec
Fall Time 100-10% of Output $I_F=50mA, Z_s \leq 50 \Omega$	$t_f$	—	200	—	nsec

Note 1: Measured at the end of 1 meter length of Galite™ 1000 terminated per AMP Incorporated instruction sheet IS 2878-2 and connected to the DUT.

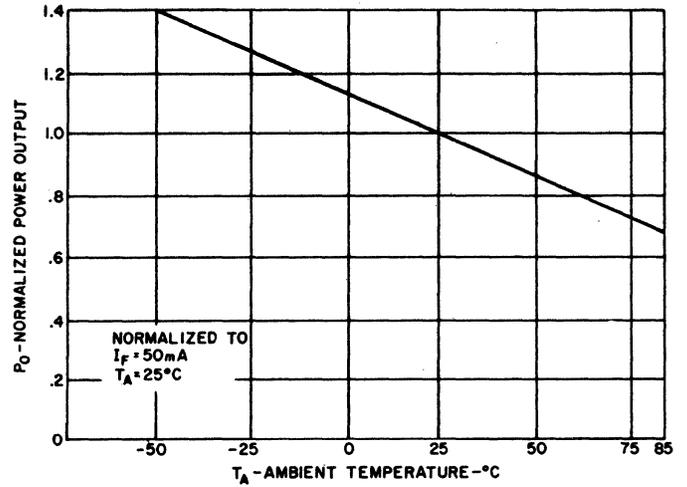
Note 2: Measured at the end of 1 meter length of Crofon® 1040 terminated per AMP Incorporated instruction sheet IS 2878-2 and connected to the DUT.

# TYPICAL CHARACTERISTICS

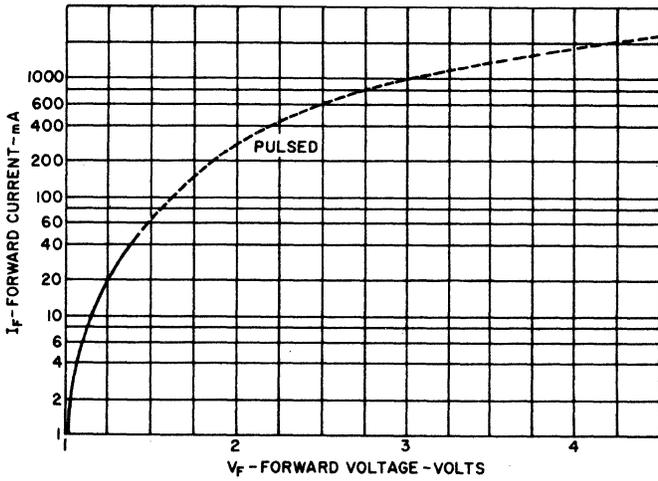
GFOE1A1-GFOE1A2



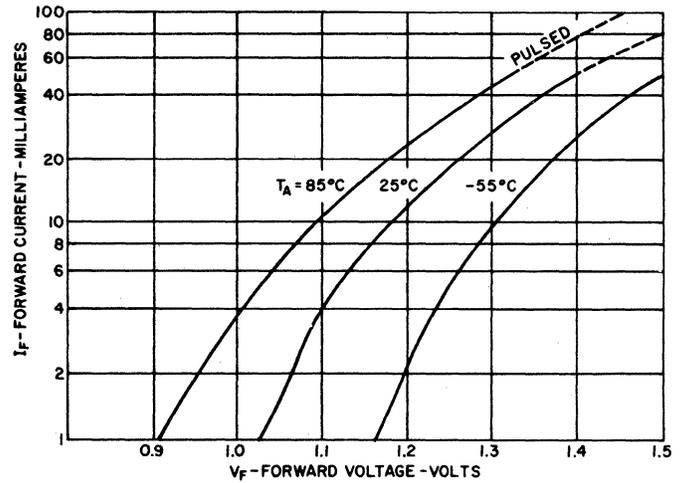
1. POWER OUTPUT VS. INPUT CURRENT



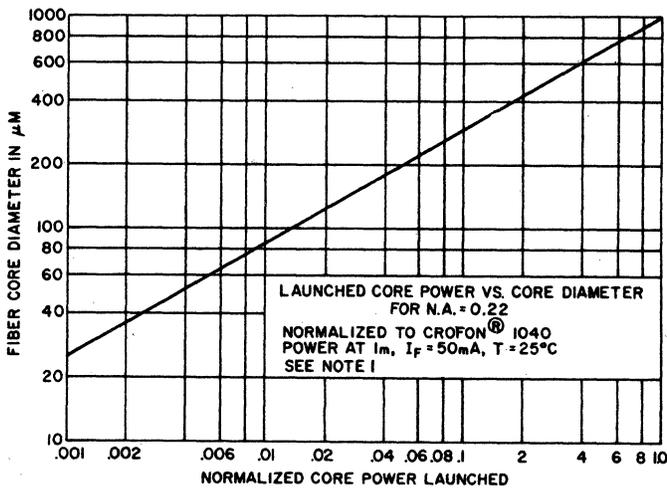
2. POWER OUTPUT VS. TEMPERATURE



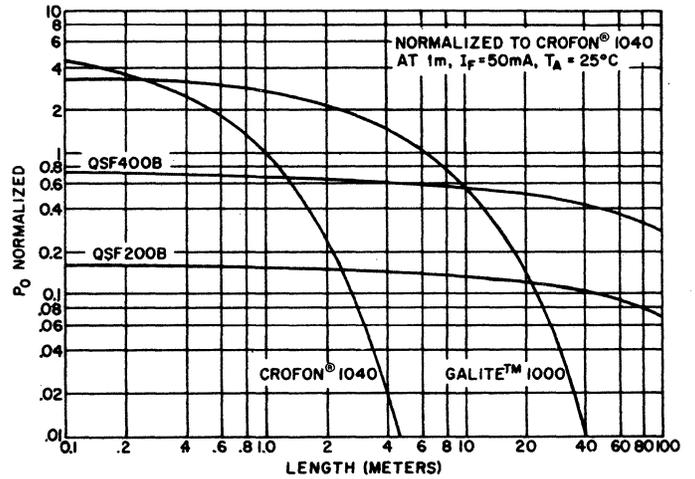
3. FORWARD VOLTAGE VS. FORWARD CURRENT



4. FORWARD VOLTAGE VS. FORWARD CURRENT



5. POWER OUTPUT VS. FIBER DIAMETER



6. POWER OUTPUT VS. FIBER LENGTH