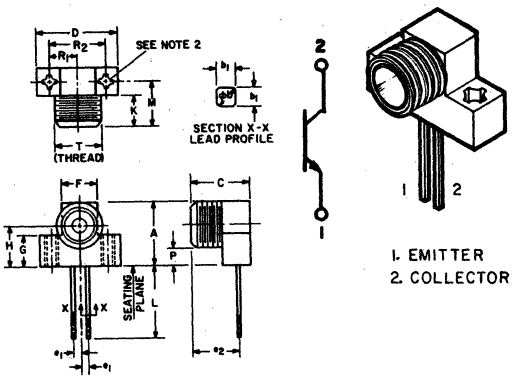
Fiber Optic Detectors
GFOD1A1 — GFOD1A2

Silicon Phototransistor Detectors for Fiber Optic Systems

The General Electric GFOD1A1 and GFOD1A2 are silicon phototransistors which detect and convert light signals from optical fibers into electrical signals. 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)

Voltages			
Collector to Emitter Voltage	V_{CEO}	30	V
Emitter to Collector Voltage	V_{ECO}	5	V
Current			
Collector Current (continuous)	I_C	100	mA
Dissipation			
Power Dissipation (TA = 25°C)*	P_T	150	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 2.5 mW/°C above 25°C ambient.

SYM.	MILLIMETERS		INCHES		NOTES
	MIN.	MAX.	MIN.	MAX.	
A	10.67	11.17	.420	.440	
ϕb	.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:
1. Two Leads
2. Mounting Holes see attached drawing or M2x0.4 or Self-Tapping Screws

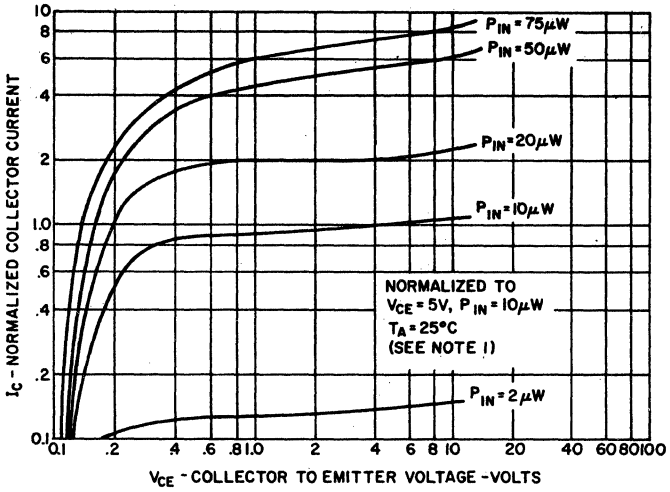
electrical characteristics (25°C unless otherwise specified)

	SYMBOL	MIN.	TYP.	MAX.	UNITS
Collector to Emitter Breakdown Voltage (IC = 10 mA, Pin = 0)	$V_{(BR)CEO}$	30	—	—	V
Emitter to Collector Breakdown Voltage (IE = 100 μA, Pin = 0)	$V_{(BR)ECO}$	5	—	—	V
Collector Dark Current (VCE = 10V, Pin = 0)	I_{CEO}	—	—	100	nA

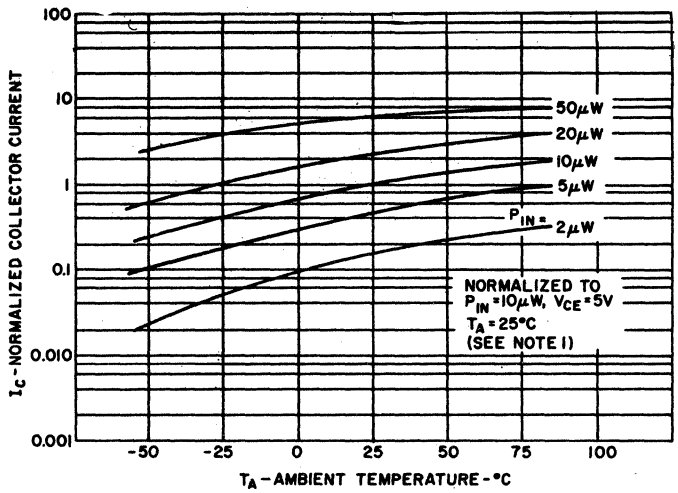
optical characteristics (25°C unless otherwise specified)

		SYMBOL	MIN.	TYP.	MAX.	UNITS
Responsivity (Note 1)	GFOD1A1	R	70	—	—	μA/μW
(VCE = 5V, Pin = 10μW, λp = 940 nM)	GFOD1A2	R	30	—	—	μA/μW
Turn on time (See Note 1)						
(VCC = 5V, IF = 30 mA, RL = 2.5K Ω)		t_{on}	—	8	—	μs
(VCC = 1.5V, IF = 10 mA, RL = 0)		t_{on}	—	3	—	μs
Turn off time (See Note 1)						
(VCC = 5V, IF = 30 mA, RL = 2.5K Ω)		t_{off}	—	50	—	μs
(VCC = 1.5V, IF = 10 mA, RL = 0)		t_{off}	—	3	—	μs

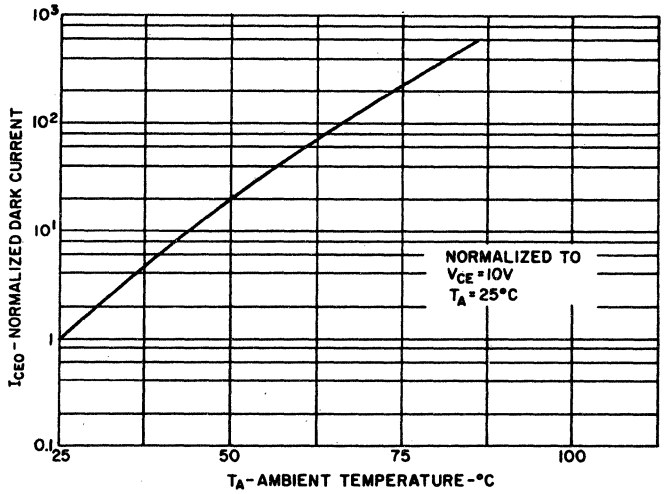
Note 1: Radiation source used is a GFOE1A1 Fiber Optic Emitter coupled via 1 meter of CROFON® 1040 Fiber terminated per AMP Incorporated instruction sheet IS 2878-2.



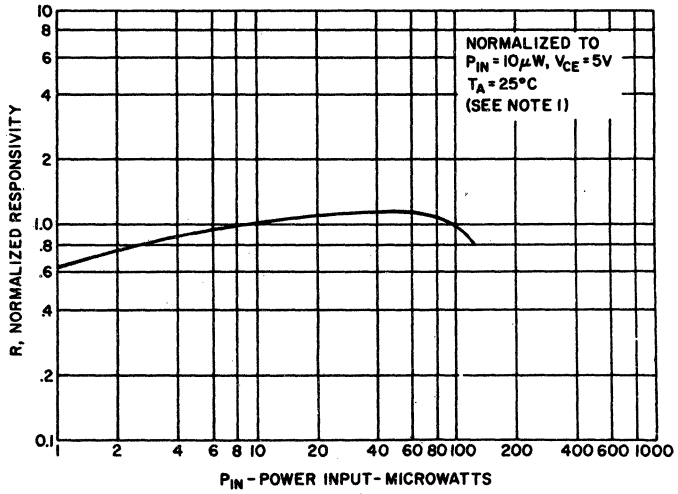
1. COLLECTOR CURRENT VS. V_{CE}



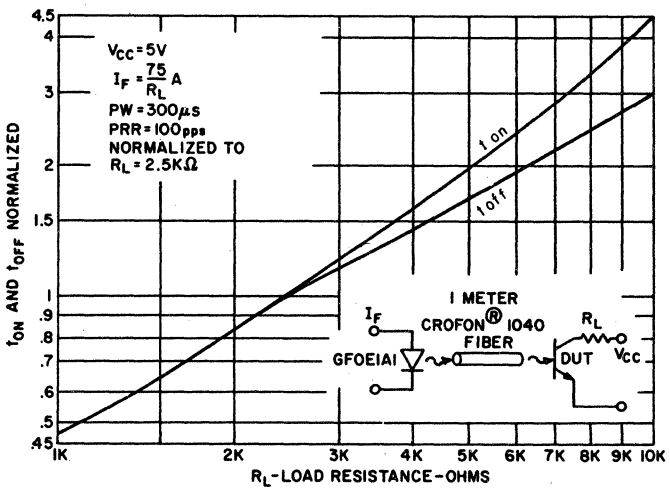
2. COLLECTOR VS. TEMPERATURE



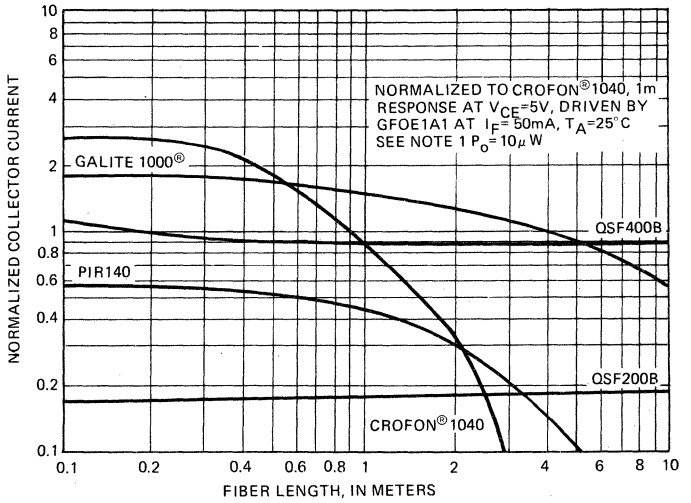
3. COLLECTOR DARK CURRENT VS. TEMPERATURE



4. RESPONSIVITY VS. POWER INPUT



5. SWITCHING SPEED VS. R_L



6. COLLECTOR CURRENT VS. FIBER LENGTH