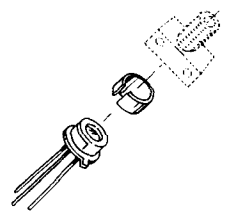
Fiber Optics — 100 MHz Family Photo Detector
Diode Output

MFOD1100

**HERMETIC FAMILY
FIBER OPTICS
PHOTO DETECTOR
DIODE OUTPUT**

. . . designed for infrared radiation detection in high frequency Fiber Optics Systems. It is packaged in Motorola's hermetic TO-206AC (TO-52) case, and it fits directly into standard fiber optics connectors. The metal connectors provide excellent RFI immunity. Major applications are: CATV, video systems, M68000 microprocessor systems, industrial controls, computer and peripheral equipment, etc.

- Fast Response — 1 ns Max @ 5 Volts
- Analog Bandwidth (−3 dB) Greater Than 250 MHz
- Performance Matched to Motorola Fiber Optics Emitters
- TO-206AC (TO-52) Package — Small, Rugged, and Hermetic
- Compatible with AMP #228756-1, Amphenol #905-138-5001 and Radiall #F086600380 Receptacles Using Motorola Plastic Alignment Bushing MF0A06 (Included)



**CASE 210A-01
METAL**

MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

Rating	Symbol	Value	Unit
Reverse Voltage	V_R	50	Volts
Total Device Dissipation @ T_A = 25°C Derate above 25°C	P_D	50 0.5	mW mW/°C
Operating Temperature Range	T_A	−55 to +125	°C
Storage Temperature Range	T_{stg}	−65 to +150	°C

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ELECTRICAL CHARACTERISTICS (T_A = 25°C)

Characteristic	Symbol	Min	Typ	Max	Unit
Dark Current (V_R = 5 V, R_L = 1 M, H = 0, Figure 2)	I_D	—	—	1	nA
Reverse Breakdown Voltage (I_R = 10 μA)	$V_{(BR)R}$	50	—	—	Volts
Forward Voltage (I_F = 50 mA)	V_F	—	0.7	1	Volts
Total Capacitance (V_R = 5 V, f = 1 MHz)	C_T	—	—	2.5	pF
Noise Equivalent Power	NEP	—	50	—	fW/$\sqrt{Hz}$

OPTICAL CHARACTERISTICS (T_A = 25°C)

Responsivity @ 850 nm (V_R = 5 V, P = 10 μW, Figure 3, 5)	R	0.3	0.35	—	μA/μW
Response Time @ 850 nm (V_R = 5 V)	t_r, t_f	—	0.5	1	ns
Effective Input Port Diameter (Figure 4)	—	—	300 0.012	—	Microns Inches
10 dB (90%) Numerical Aperture of Input Port (Figure 4)	NA	—	0.4	—	—

TYPICAL CHARACTERISTICS

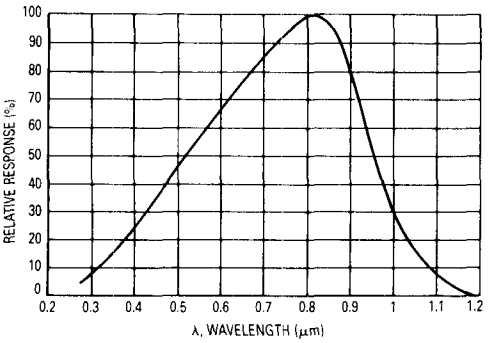

Figure 1. Relative Spectral Response

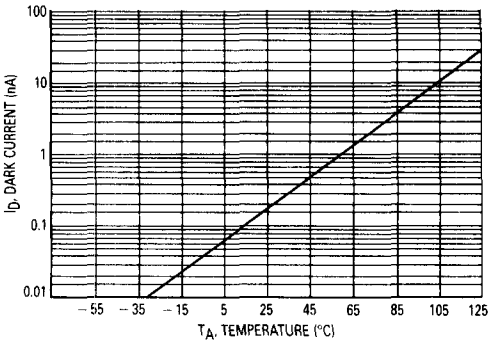

Figure 2. Dark Current versus Temperature

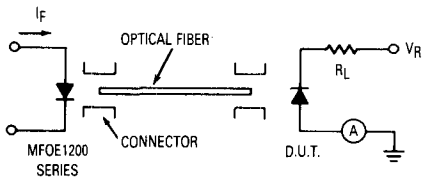

Figure 3. Responsivity Test Configuration

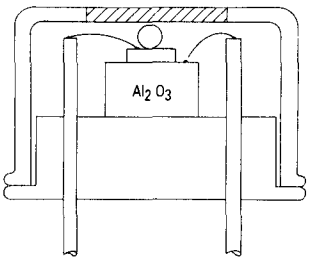

Figure 4. Package Cross Section

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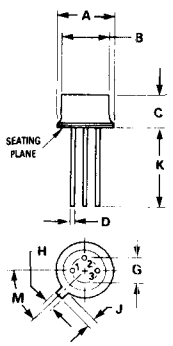
OUTLINE DIMENSIONS



NOTES:
1. PIN 2 INTERNALLY CONNECTED TO CASE.
2. LEAD POSITIONAL TOLERANCE AT SEATING PLANE
   ⌖ ⌀0.36 (0.014) Ⓜ T A Ⓜ H Ⓜ
3. DIMENSIONS A AND H ARE DATUMS AND T IS A DATUM PLANE.

STYLE 1:
PIN 1. ANODE
2. CATHODE
3. CASE

DIM	MILLIMETERS MIN	MILLIMETERS MAX	INCHES MIN	INCHES MAX
A	5.31	5.84	0.209	0.230
B	4.65	4.70	0.183	0.185
C	3.12	3.28	0.123	0.129
D	0.41	0.48	0.016	0.019
G	2.54 BSC		0.100 BSC	
H	0.99	1.17	0.039	0.046
J	0.84	1.22	0.033	0.048
K	12.70	—	0.500	—
M	45° BSC		45° BSC	

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