

Fiber Optics — FLCS Family Visible Red LED

MFOE76

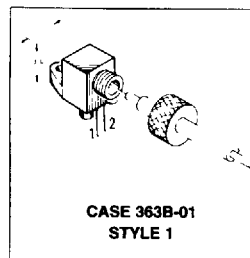
**FLCS FAMILY
FIBER OPTICS
VISIBLE RED
LED
660 nm**

Features:

- Low Cost
- Very Simple Fiber Termination and Connection. See Figure 9
- Convenient Printed Circuit Mounting
- Integral Molded Lens for Efficient Coupling
- Mates with 1000 Micron Core Plastic Fiber, such as Eska SH4001

Applications:

- Medical Electronics
- Industrial Controls
- Security Systems
- Short Haul Communication Systems
- High Isolation Interconnects
- M6800 Microprocessor Systems



MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Reverse Voltage	V_R	5	Volts
Forward Current — Continuous	I_F	60	mA
Forward Current — Peak Pulse	I_F	1	A
Total Power Dissipation (1) $T_A = 25^\circ\text{C}$ (1) Derate above 35°C	P_D	132 2	mW mW/°C
Ambient Operating Temperature Range	T_A	40 to +100	°C
Storage Temperature	T_{stg}	-40 to +100	°C
Lead Soldering Temperature (2)	—	260	°C

Notes 1 Measured with device soldered into a typical printed circuit board
2 5 seconds max 1/16 inch from case

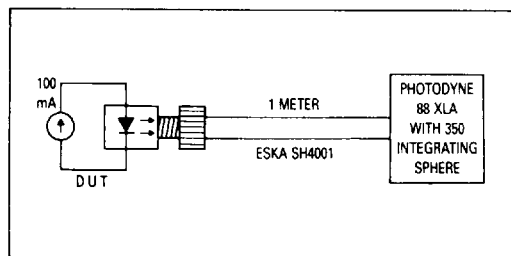


Figure 1. Power Launched Test Setup

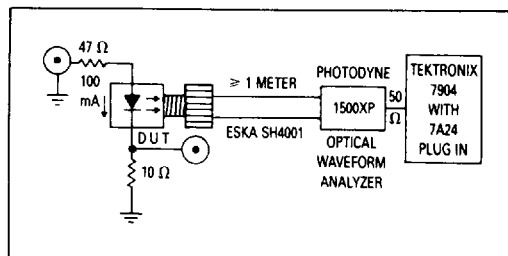


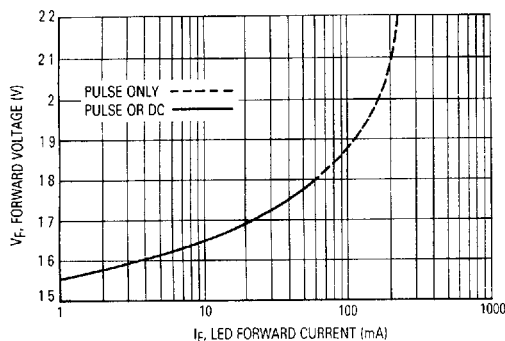
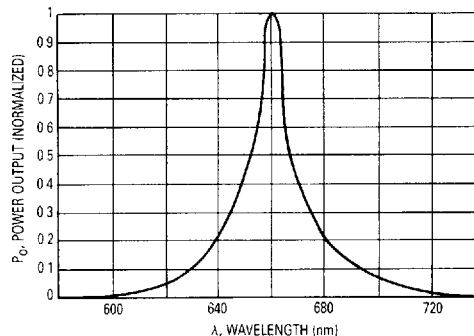
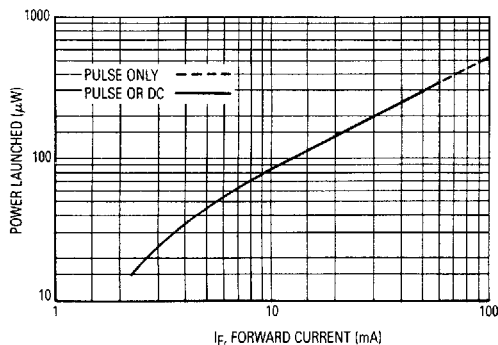
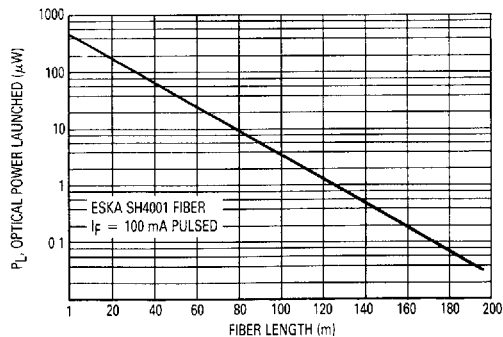
Figure 2. Optical Turn-On and Turn-Off Test Setup

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Leakage Current ($V_R = 3\text{ V}$)	I_R	—	100	—	nA
Reverse Leakage Current ($V_R = 5\text{ V}$)	I_R	—	10	100	μA
Forward Voltage ($I_F = 60\text{ mA}$)	V_F	—	1.8	2.2	V
Temperature Coefficient of Forward Voltage	ΔV_F	—	-2.2	—	mV/K
Capacitance ($f = 1\text{ MHz}$)	C	—	50	—	pF

OPTICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Peak Wavelength ($I_F = 60\text{ mA}$)	λ_p	—	660	—	nm
Instantaneous Power Launched ($I_F = 100\text{ mA}$, Figure 1)	P_L	200	540	—	μW
Optical Turn-On Time (Figure 2)	t_{on}	—	200	—	ns
Optical Turn-Off Time (Figure 2)	t_{off}	—	150	—	ns
Half-Power Electrical Bandwidth (1)	BWe	—	6	—	MHz

(1) $I_F = 100\text{ mA}$ pk-pk, 100% modulation**TYPICAL CHARACTERISTICS****Figure 3. Forward Voltage versus Forward Current****Figure 4. Relative Spectral Output****Figure 5. Power Launched versus LED Forward Current****Figure 6. Power Launched versus Fiber Length**

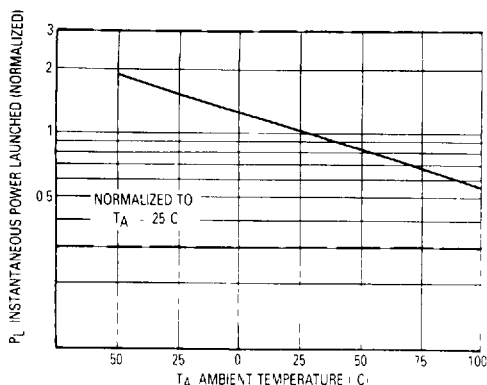


Figure 7. Instantaneous Power Output versus Ambient Temperature

The system length achieved with a MFOE76 emitter and various detectors, using 1000 micron core plastic fiber (Eksa SH4001 or equivalent), depends on the LED forward

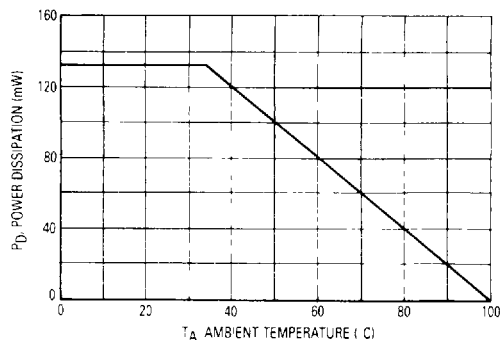


Figure 8. Power Dissipation

current (I_F) and the responsivity of the detector chosen. Each detector will perform with the MFOE76 up to the distances shown below.

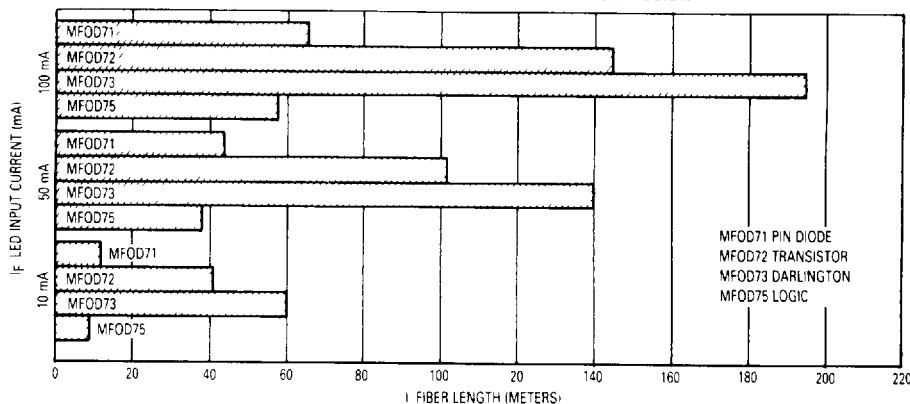


Figure 9. MFOE76 Working Distances

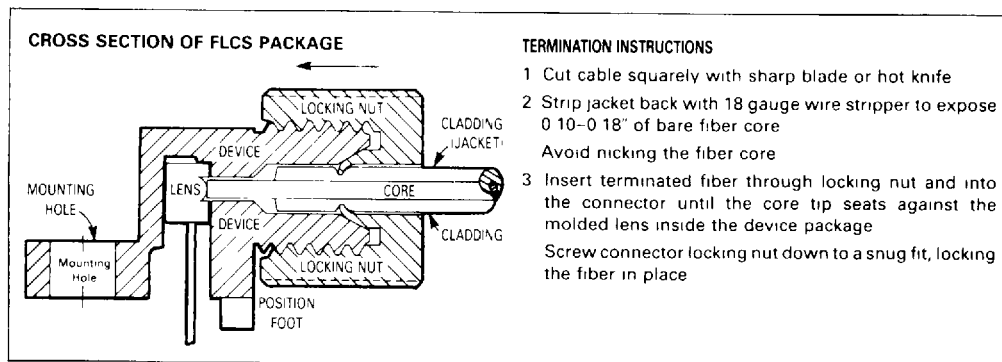


Figure 10. FO Cable Termination and Assembly