

Slotted Optical Switch Darlington Output

These devices consist of two gallium arsenide infrared emitting diodes facing two NPN silicon photodarlington transistors across a 0.100" wide slot in the housing. Switching takes place when an opaque object in the slot interrupts the infrared beam.

Dual channel interrupters (switches) can sense *direction* of motion as well as position and speed.

- High Gain Darlington Output
- 0.020" Detector Aperture Width
- Easy PCB Mounting
- Cost Effective
- Uses Long-Lived LPE IRED

MOC71W1

**DUAL CHANNEL
SLOTTED
OPTICAL SWITCH
DARLINGTON OUTPUT**

ABSOLUTE MAXIMUM RATINGS (25°C)

Rating	Symbol	Value	Unit
INPUT LED			
Power Dissipation	P_D	150*	mW
Forward Current (Continuous)	I_F	60	mA
Reverse Voltage	V_R	6	V

OUTPUT DARLINGTON

Power Dissipation	P_D	150*	mW
Collector-Emitter Voltage	V_{CEO}	30	V

TOTAL DEVICE

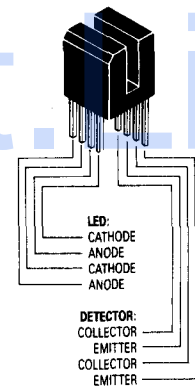
Storage Temperature	T_{stg}	-40 to +85	°C
Operating Temperature	T_J	-40 to +85	°C
Lead Soldering Temperature (5 seconds maximum)	T_L	260	°C

*Derate 2 mW/°C above 25°C ambient.

INDIVIDUAL ELECTRICAL CHARACTERISTICS (25°C) (See Note 1)

Characteristic	Symbol	Min	Typ	Max	Unit
INPUT LED					
Reverse Breakdown Voltage ($I_R = 100 \mu A$)	$V_{(BR)R}$	6	—	—	V
Forward Voltage ($I_F = 60 \text{ mA}$)	V_F	—	—	1.8	V
Reverse Current ($V_R = 6 \text{ V}, R_L = 1 \text{ M}\Omega$)	I_R	—	50	—	nA
Capacitance ($V = 0 \text{ V}, f = 1 \text{ MHz}$)	C	—	25	—	pF
OUTPUT DARLINGTON					
Breakdown Voltage ($I_C = 1 \text{ mA}, I_F = 0$)	$V_{(BR)CEO}$	30	—	—	V
Collector Dark Current ($V_{CE} = 10 \text{ V}, I_F = 0$)	I_{CEO}	—	—	100	nA

NOTE 1: Stray irradiation can alter values of characteristics. Adequate shielding should be provided.



CASE 792-01

MOC71W1

COUPLED ELECTRICAL CHARACTERISTICS (25°C, See Note 1)

Characteristics	Symbol	Min	Typ	Max	Unit
$I_F = 5 \text{ mA}, V_{CE} = 5 \text{ V}$	$I_{CE(oh)}$	2.5	—	—	mA
$I_F = 10 \text{ mA}, V_{CE} = 5 \text{ V}$	$I_{CE(oh)}$	7.5	—	—	mA
$I_F = 10 \text{ mA}, I_C = 1.8 \text{ mA}$	$V_{CE(sat)}$	—	—	1	V
I_F (opposite LED) = 10 mA, $V_{CE} = 5 \text{ V}$	I_{CX}	—	20	—	μA

NOTE 1: Stray irradiation can alter values of characteristics. Adequate shielding should be provided.

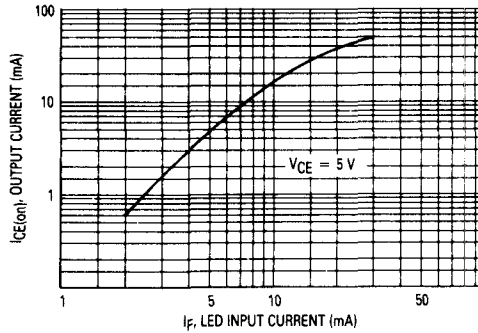


Figure 1. Typical Output Current versus Input Current

OUTLINE DIMENSIONS

STYLE 1:
 PIN 1. CATHODE 5. CATHODE
 2. ANODE 6. EMITTER
 3. CATHODE 7. CATHODE
 4. ANODE 8. EMITTER

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
B	11.76	12.11	0.463	0.477
C	9.35	9.70	0.368	0.382
D	0.36	0.55	0.014	0.022
G	7.62 BSC		0.300 BSC	
H	2.54 BSC		0.100 BSC	
J	0.43	0.55	0.017	0.022
K	7.37		0.290	
N	5.38 BSC		0.212 BSC	
R	11.30	11.60	0.445	0.457
U	2.36	2.71	0.093	0.107
W	2.36	11.60	0.093	0.107
B1	0.48	0.53	0.019	0.021
C1	2.54 BSC		0.100 BSC	

CASE 792-01

NOTES:

- DIMENSIONS R AND B ARE DATUMS AND T IS A DATUM SURFACE.
- POSITIONAL TOLERANCE FOR LEAD DIMENSION J:
 $\pm 0.51 (0.020) \text{ } \textcircled{S} \text{ } | \text{ } T \text{ } | \text{ } B \text{ } \textcircled{S}$
- POSITIONAL TOLERANCE FOR LEAD DIMENSION D:
 $\pm 0.51 (0.020) \text{ } \textcircled{S} \text{ } | \text{ } T \text{ } | \text{ } R \text{ } \textcircled{S} \text{ } | \text{ } B \text{ } \textcircled{S}$
- POSITIONAL TOLERANCE FOR U DIMENSION:
 $\pm 0.25 (0.010) \text{ } \textcircled{S} \text{ } | \text{ } T \text{ } | \text{ } R \text{ } \textcircled{S} \text{ } | \text{ } B \text{ } \textcircled{S}$
- DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
- CONTROLLING DIMENSION: INCH.