



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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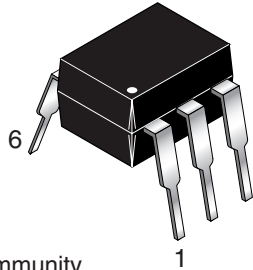
**MOC8030  
MOC8050**

**DESCRIPTION**

The MOC8030 and MOC8050 are photodarlington-type optically coupled optocouplers. The devices have a gallium arsenide infrared emitting diode coupled with a silicon darlington phototransistor.

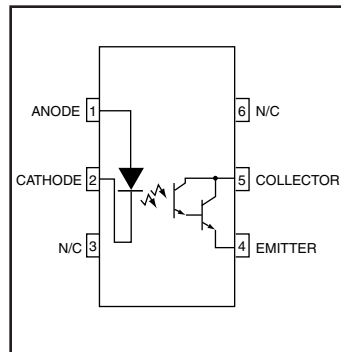
**FEATURES**

- High  $BV_{CEO}$   
-Minimum 80 V
- High current transfer ratio  
-300% (MOC8030)  
-500% (MOC8050)
- No base connection for improved noise immunity
- Underwriters Laboratory (UL) recognized File# E90700

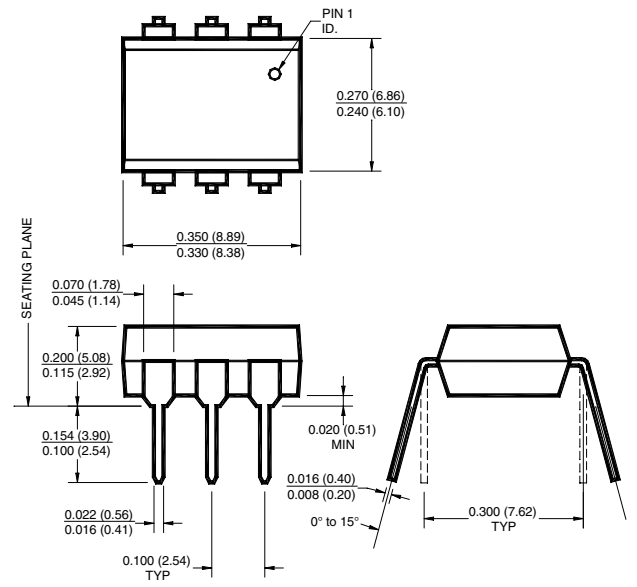


**APPLICATIONS**

- Appliances, measuring instruments
- I/O interface for computers
- Programmable controllers
- Portable electronics
- Interfacing and coupling systems of different potentials and impedance
- Solid state relays



**PACKAGE DIMENSIONS**



**NOTE**  
All dimensions are in inches (millimeters)

<b>ABSOLUTE MAXIMUM RATINGS</b> ( $T_A = 25^\circ\text{C}$ Unless otherwise specified.)			
Parameter	Symbol	Value	Units
<b>TOTAL DEVICE</b>			
Storage Temperature	$T_{STG}$	-55 to +150	$^\circ\text{C}$
Operating Temperature	$T_{OPR}$	-55 to +100	$^\circ\text{C}$
Lead Solder Temperature	$T_{SOL}$	260 for 10 sec	$^\circ\text{C}$
Total Device Power Dissipation @ $T_A = 25^\circ\text{C}$	$P_D$	250	mW
Derate above $25^\circ\text{C}$		2.94	mW/ $^\circ\text{C}$
Input-Output Isolation Voltage	$V_{ISO}$	5300	Vac(rms)
<b>EMITTER</b>			
DC/Average Forward Input Current	$I_F$	60	mA
Reverse Input Voltage	$V_R$	3	V
LED Power Dissipation @ $T_A = 25^\circ\text{C}$	$P_D$	120	mW
Derate above $25^\circ\text{C}$		1.41	mW/ $^\circ\text{C}$
<b>DETECTOR</b>			
Collector-Emitter Voltage	$V_{CEO}$	80	V
Detector Power Dissipation @ $T_A = 25^\circ\text{C}$	$P_D$	150	mW
Derate above $25^\circ\text{C}$		1.76	mW/ $^\circ\text{C}$
Continuous Collector Current	$I_C$	150	mA

<b>MOC8030</b> <b>MOC8050</b>
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**ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$  Unless otherwise specified.)

**INDIVIDUAL COMPONENT CHARACTERISTICS**

Parameter	Test Conditions	Symbol	Min	Typ**	Max	Unit
<b>EMITTER</b>						
Input Forward Voltage	( $I_F = 10\text{ mA}$ )	$V_F$		1.15	2	V
Input Capacitance	( $V_F = 0, f = 1\text{ MHz}$ )	$C_{IN}$		18		pF
Reverse Leakage Current	( $V_R = 3.0\text{ V}$ )	$I_R$		0.05	10	$\mu\text{A}$
<b>DETECTOR</b>						
Collector-Emitter Breakdown Voltage	( $I_C = 1.0\text{ mA}$ )	$BV_{CEO}$	80			V
Emitter-Collector Breakdown Voltage	( $I_E = 100\text{ }\mu\text{A}$ )	$BV_{ECO}$	5			V
Collector-Emitter Dark Current	( $V_{CE} = 60\text{ V}$ )	$I_{CEO}$			1	$\mu\text{A}$

**TRANSFER CHARACTERISTICS**

DC Characteristic	Test Conditions	Symbol	Min	Typ**	Max	Units
Current Transfer Ratio, Collector-Emitter	MOC8030 ( $I_F = 10\text{ mA}, V_{CE} = 1.5\text{ V}$ )	CTR	300			%
	MOC8050 ( $I_F = 10\text{ mA}, V_{CE} = 1.5\text{ V}$ )		500			

**TRANSFER CHARACTERISTICS**

Characteristic	Test Conditions	Symbol	Min	Typ**	Max	Units
<b>SWITCHING TIMES</b>						
Turn-on Time	( $V_{CC} = 10\text{ V}, R_L = 100\Omega, I_F = 5\text{ mA}$ )	$t_{on}$		3.5		$\mu\text{s}$
Turn-off Time		$t_{off}$		95		$\mu\text{s}$

**ISOLATION CHARACTERISTICS**

Characteristic	Test Conditions	Symbol	Min	Typ**	Max	Units
Input-Output Isolation Voltage	( $I_{I-O} \leq 1\text{ }\mu\text{A}, 1\text{ min.}$ )	$V_{ISO}$	7500			Vac(pk)
	( $I_{I-O} \leq 1\text{ }\mu\text{A}, 1\text{ min.}$ )		5300			Vac(rms)
Isolation Resistance	( $V_{I-O} = 500\text{ VDC}$ )	$R_{ISO}$	$10^{11}$			$\Omega$
Isolation Capacitance	( $f = 1\text{ MHz}$ )	$C_{ISO}$		0.5		pf

Note

 \*\* Typical values at  $T_A = 25^\circ\text{C}$



**MOC8030  
MOC8050**

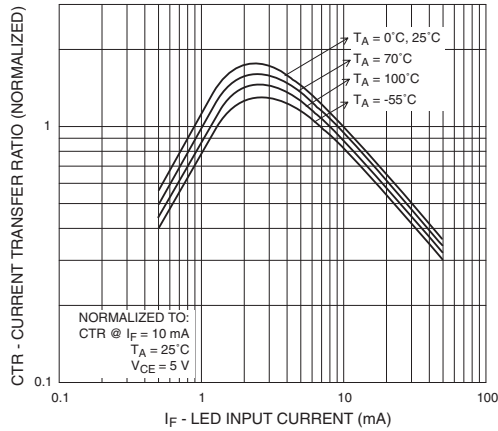


Fig. 1 Output Current vs. Input Current

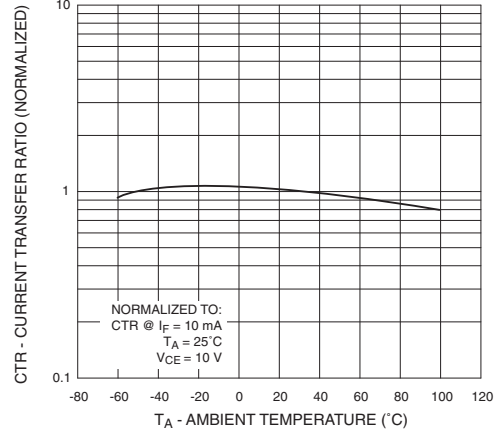


Fig. 2 Current Transfer Ratio vs. Ambient Temperature

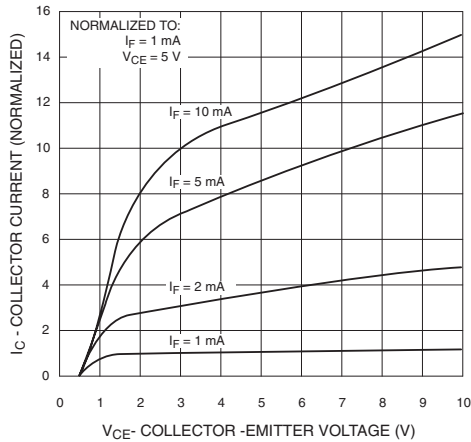


Fig. 3 Collector Current vs. Collector-Emitter Voltage

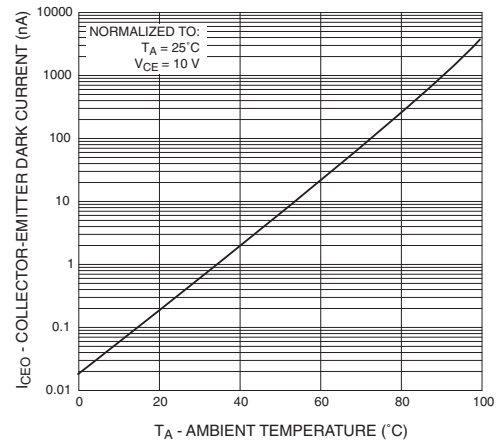


Fig. 4 Dark Current vs. Ambient Temperature

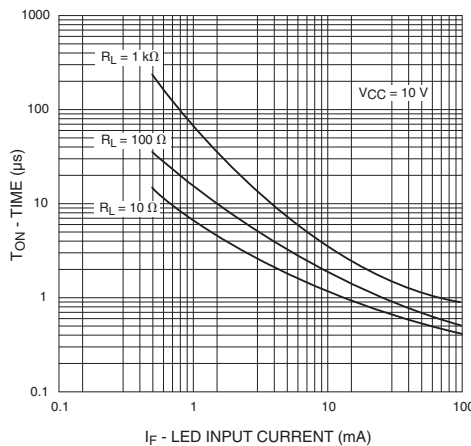


Fig. 5 Turn-On Time vs. Input Current

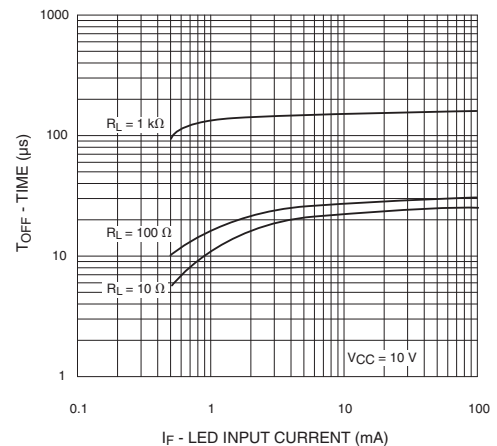


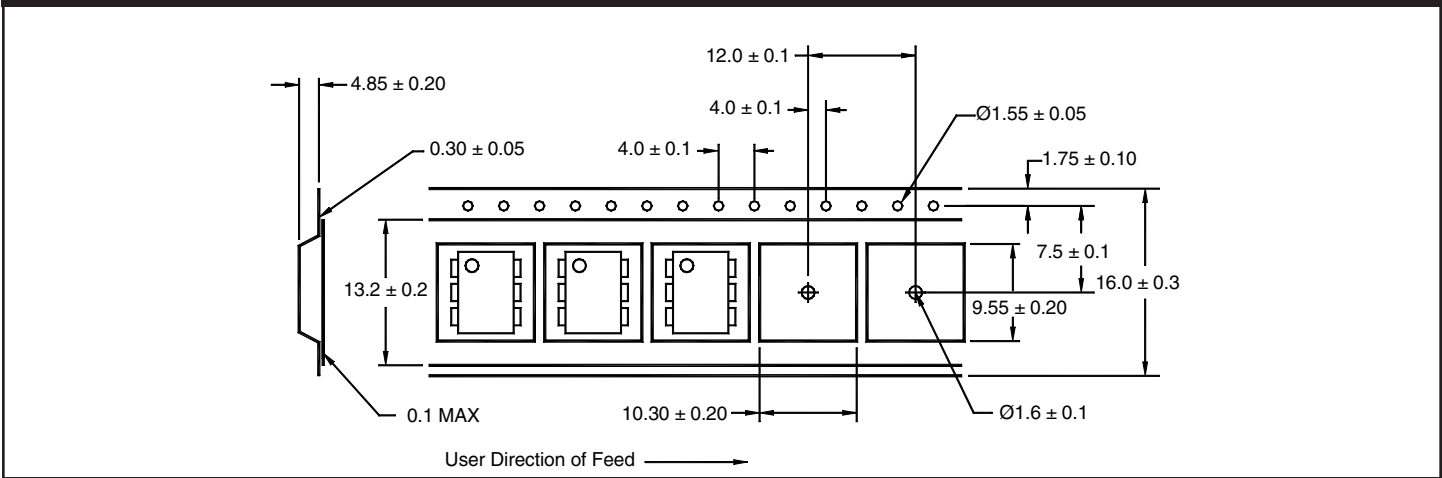
Fig. 6 Turn-Off Time vs. Input Current

**MOC8030  
MOC8050**

**ORDERING INFORMATION**

Option	Order Entry Identifier	Description
S	.S	Surface Mount Lead Bend
SD	.SD	Surface Mount; Tape and reel
W	.W	0.4" Lead Spacing
300	.300	VDE 0884
300W	.300W	VDE 0884, 0.4" Lead Spacing
3S	.3S	VDE 0884, Surface Mount
3SD	.3SD	VDE 0884, Surface Mount, Tape & Reel

**QT Carrier Tape Specifications ("D" Taping Orientation)**



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