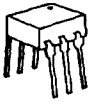
MOC3009-MOC3012

Optoisolator
GaAs Infrared Emitting Diode and Light Activated Triac Driver

The MOC3009-MOC3012 series consists of a gallium arsenide, infrared emitting diode coupled with a light activated silicon bilateral switch, which functions like a triac, in a dual in-line package.

These devices are especially designed for triggering power triacs while maintaining dielectric isolation from the trigger control circuit. They are mounted in dual in-line packages. These devices are also available in surface-mount packaging.



absolute maximum ratings: (25° C)

INFRARED EMITTING DIODE		
Power Dissipation	*100	milliwatts
Forward Current (Continuous)	50	milliamps
Forward Current (Peak) (Pulse width 1 μsec. 300 pps)	3	amperes
Reverse Voltage	3	volts

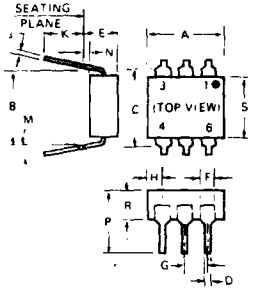
*Derate 1.33mW/°C above 25°C ambient.

OUTPUT DRIVER		
Off-State Output Terminal Voltage	250	Volts
On-State RMS Current (Full Cycle Sine Wave, 50 to 60 Hz)	100	milliamps
Peak Nonrepetitive Surge Current (PW = 10 ms, DC = 10%)	1.2	amperes
Total Power Dissipation @ T_A = 25°C	**300	milliwatts

**Derate 4.0 mW/°C above 25°C ambient.

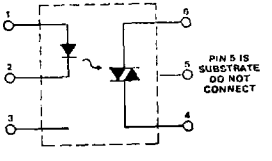
TOTAL DEVICE
Storage Temperature -55°C to +150°C
Operating Temperature -40°C to +100°C
Lead Soldering Time (at 260°C) 10 seconds
Isolation Surge Voltage: (Input to Output) 7500VAC (Peak AC Voltage, 60 Hz, 5 second duration)

Covered under U.L. component recognition program, reference file E51868



SYMBOL	MILLIMETERS MIN.	MILLIMETERS MAX.	INCHES MIN.	INCHES MAX.	NOTES
A	8.38	8.89	.330	.350	
B	7.62 REF		.300 REF		1
C		8.64		.340	2
D	.406	.508	0.16	.020	
E		5.08		.200	3
F	1.01	1.78	.040	.070	
G	2.28	2.80	.090	.110	
H		2.16		.085	4
I	.203	.305	.008	.012	
K	2.54		.100		
M		15°		15°	
N	.381		.015		
P		9.53		.375	
R	2.92	3.43	.115	.135	
S	6.10	6.86	.240	.270	

NOTES
1. INSTALLED POSITION LEAD CENTERS
2. OVERALL INSTALLED DIMENSION
3. THESE MEASUREMENTS ARE MADE FROM THE SEATING PLANE
4. FOUR PLACES



individual electrical characteristics (25° C)

EMITTER	SYMBOL	TYP.	MAX.	UNITS
Forward Voltage (I_F = 10 mA)	V_F	1.2	1.5	volts
Reverse Current (V_R = 3V)	I_R	—	100	microamps
Capacitance (V = 0, f = 1 MHz)	C_J	50	-	picofarads

DETECTOR See Note 1		SYMBOL	TYP.	MAX.	UNITS
Peak Off-State Current	V_{DRM} 250 V	I_{DRM}	—	100	nanoamps
Peak On-State Voltage	I_{TM} = 100 mA	V_{TM}	2.5	3.0	volts
Critical Rate-of-Rise of Off-State Voltage	T_A = 85°C	dv/dt	12.0	—	volts/μsec.

coupled electrical characteristics (25° C)

		SYMBOL	TYP.	MAX.	UNITS
IRED Trigger Current, Current Required to Latch Output	MOC3009	I_{FT}	—	30	milliamps
(Main Terminal Voltage = 3.0 V, R_L = 150 Ω	MOC3010	I_{FT}	—	15	milliamps
	MOC3011	I_{FT}	—	10	milliamps
	MOC3012	I_{FT}		5	milliamps
Holding Current, Either Direction		I_H	100	—	microamps

NOTE 1: Ratings apply to either polarity of Pin 6 – referenced to Pin 4. Voltages must be applied within dv/dt rating.

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