



## OPTICALLY COUPLED BILATERAL SWITCH LIGHT ACTIVATED ZERO VOLTAGE CROSSING TRIAC

### DESCRIPTION

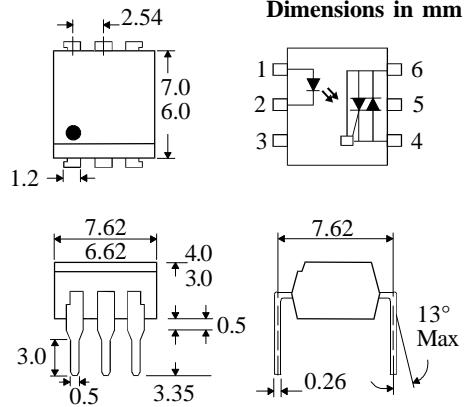
The MOC308\_ Series are optically coupled isolators consisting of a Gallium Arsenide infrared emitting diode coupled with a monolithic silicon detector performing the functions of a zero crossing bilateral triac mounted in a standard 6 pin dual-in-line package.

### FEATURES

- Options :-  
10mm lead spread - add G after part no.  
Surface mount - add SM after part no.  
Tape&reel - add SMT&R after part no.
- High Isolation Voltage (5.3kV<sub>RMS</sub>, 7.5kV<sub>PK</sub>)
- Zero Voltage Crossing
- 800V Peak Blocking Voltage
- All electrical parameters 100% tested
- Custom electrical selections available

### APPLICATIONS

- CRTs
- Power Triac Driver
- Motors
- Consumer appliances
- Printers



### ABSOLUTE MAXIMUM RATINGS (25 °C unless otherwise noted)

Storage Temperature	-40°C - +150°C
Operating Temperature	-40°C - +100°C
Lead Soldering Temperature	260°C (1.6mm from case for 10 seconds)
Input-to-output Isolation Voltage (Pk)	7500 Vac (60 Hz, 1sec. duration)

### INPUT DIODE

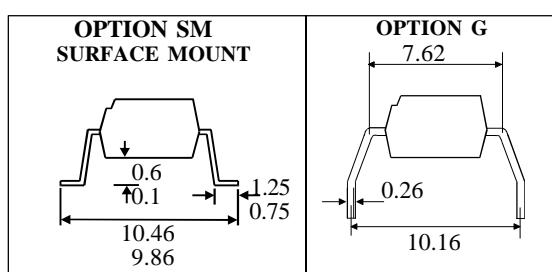
Forward Current	50mA
Reverse Voltage	6V
Power Dissipation	120mW (derate linearly 1.41mW/°C above 25°C)

### OUTPUT PHOTO TRIAC

Off-State Output Terminal Voltage	800V
RMS Forward Current	100mA
Forward Current (Peak)	1.2A
Power Dissipation	150mW (derate linearly 1.76mW/°C above 25°C)

### POWER DISSIPATION

Total Power Dissipation	250mW (derate linearly 2.94mW/°C above 25°C)
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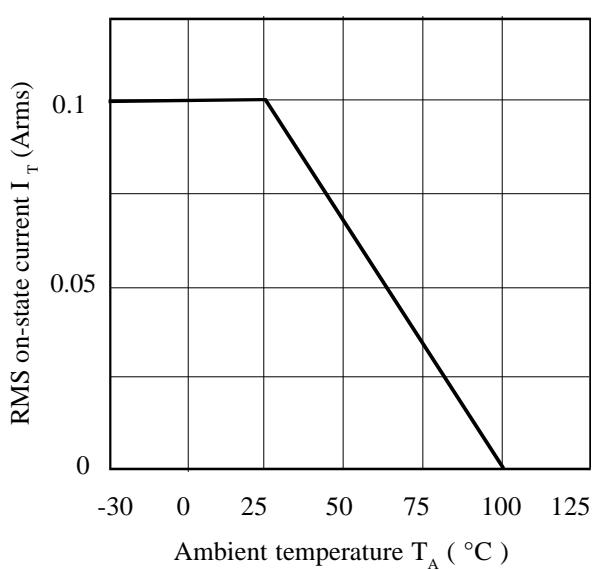
**ELECTRICAL CHARACTERISTICS (  $T_A = 25^\circ\text{C}$  Unless otherwise noted )**

PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage ( $V_F$ ) Reverse Current ( $I_R$ )		1.2	1.5 100	V $\mu\text{A}$	$I_F = 30\text{mA}$ $V_R = 6\text{V}$
Output	Peak Off-state Current ( $I_{DRM}$ ) Peak Blocking Voltage ( $V_{DRM}$ ) On-state Voltage ( $V_{TM}$ )  Critical rate of rise of off-state Voltage ( $\text{dv}/\text{dt}$ )	800	1.8	300 3.0	nA V V	$V_{DRM} = 800\text{V}$ (note 1) $I_{DRM} = 300\text{nA}$ $I_{TM} = 100\text{mA}$ ( peak )
Coupled	Input Current to Trigger ( $I_{FT}$ )(note 2) MOC3080 MOC3081 MOC3082 MOC3083  Holding Current , either direction ( $I_H$ ) Input to Output Isolation Voltage $V_{ISO}$			30 15 10 5	mA $\mu\text{A}$ $V_{RMS}$ $V_{PK}$	$V_{TM} = 3\text{V}$ ( note 2 )  See note 3 See note 3
Zero Crossing Charact-eristic	Inhibit Voltage ( $V_{IH}$ )  Leakage in Inhibited State ( $I_S$ )			35 500	V $\mu\text{A}$	$I_F = \text{Rated } I_{FT}$ MT1-MT2 Voltage above which device will not trigger $I_F = \text{Rated } I_{FT}$ $V_{DRM} = 800\text{V}$ off-state

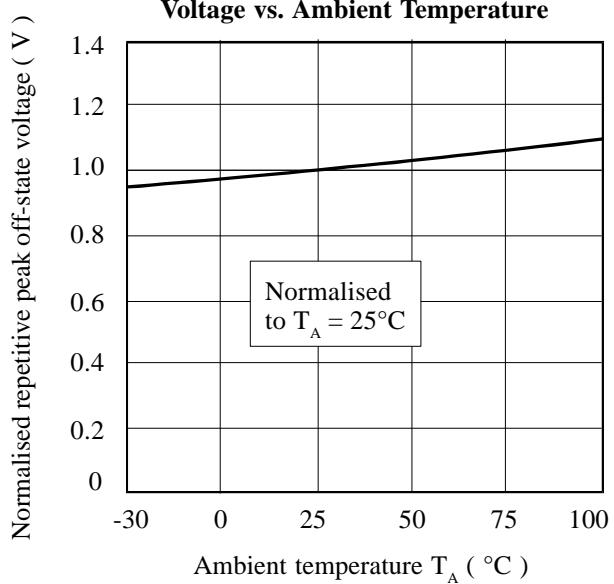
Note 1. Guaranteed to trigger at an  $I_F$  value less than or equal to max.  $I_{FT}$ , recommended  $I_F$  lies between Rated  $I_{FT}$  and absolute max.  $I_F$ .

Note 2. Measured with input leads shorted together and output leads shorted together.

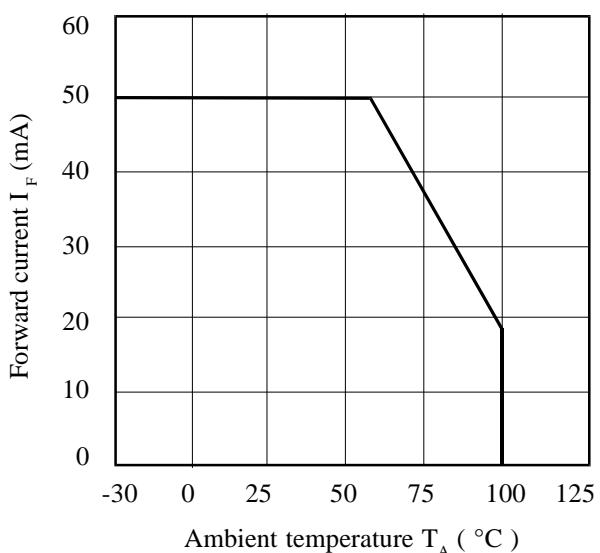
**RMS On-state Current vs. Ambient Temperature**



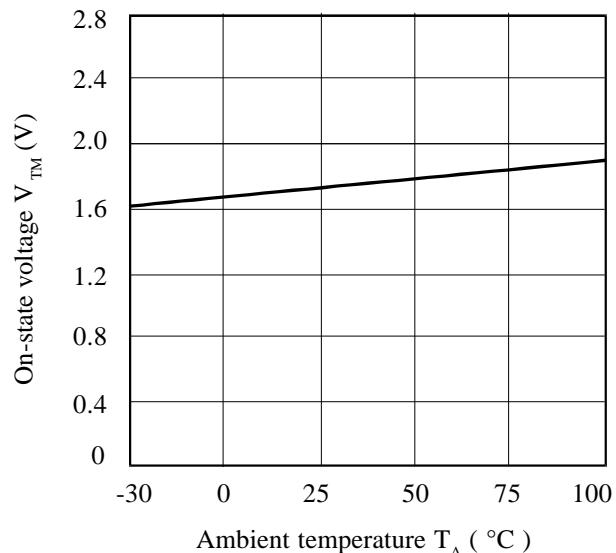
**Normalised Repetitive Peak Off-state Voltage vs. Ambient Temperature**



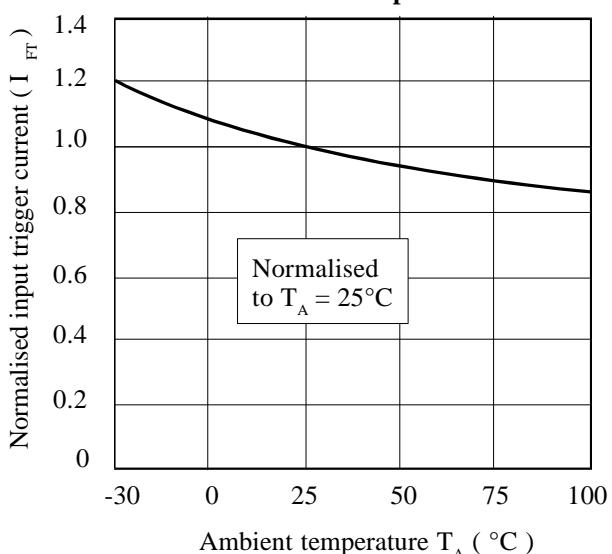
**Forward Current vs. Ambient Temperature**



**On-state Voltage vs. Ambient Temperature**



**Normalised Input Trigger Current vs. Ambient Temperature**



**On-state Current vs. On-state Voltage**

