

MOC3080, MOC3081, MOC3082, MOC3083



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

### DESCRIPTION

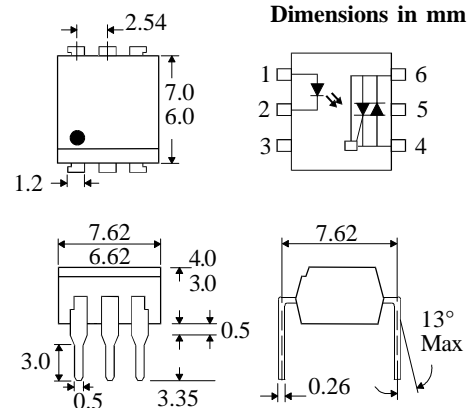
The MOC308\_ Series are optically coupled isolators consisting of a Gallium Arsenide infrared emitting diode coupled with a monolithic silicon detector performing the functions of a zero crossing bilateral triac mounted in a standard 6 pin dual-in-line package.

### 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 ( $5.3kV_{RMS}$ ,  $7.5kV_{PK}$ )
- 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)

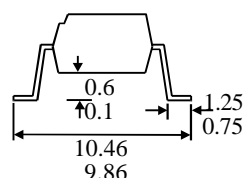
### OUTPUT PHOTO TRIAC

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)

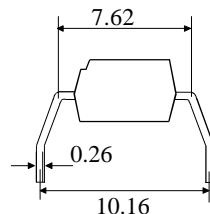
### POWER DISSIPATION

Total Power Dissipation \_\_\_\_\_ 250mW  
 (derate linearly 2.94mW/°C above 25°C)

#### OPTION SM SURFACE MOUNT



#### OPTION G



#### ISOCOM COMPONENTS LTD

Unit 25B, Park View Road West,  
 Park View Industrial Estate, Brenda Road  
 Hartlepool, TS25 1YD England Tel: (01429)863609  
 Fax : (01429) 863581 e-mail sales@isocom.co.uk  
<http://www.isocom.com>

#### ISOCOM INC

1024 S. Greenville Ave, Suite 240,  
 Allen, TX 75002 USA  
 Tel: (214)495-0755 Fax: (214)495-0901  
 e-mail info@isocom.com  
<http://www.isocom.com>

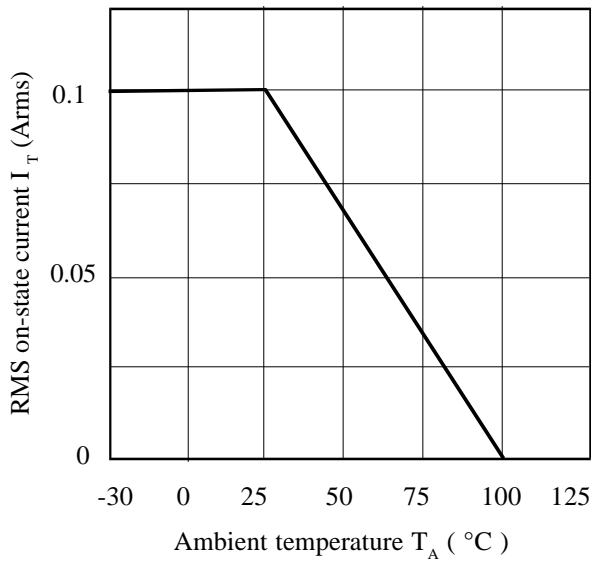
**ELECTRICAL CHARACTERISTICS (  $T_A = 25^\circ\text{C}$  Unless otherwise noted )**

| PARAMETER                                |   | MIN          | TYP | MAX                 | UNITS  | TEST CONDITION  |
|--|---|--------------|-----|---------------------|--|---|
| Input                                    | Forward Voltage ( $V_F$ )<br>Reverse Current ( $I_R$ )  |              | 1.2 | 1.5<br>100          | V<br>$\mu\text{A}$                                   | $I_F = 30\text{mA}$<br>$V_R = 6\text{V}$  |
| Output                                   | Peak Off-state Current ( $I_{\text{DRM}}$ )<br>Peak Blocking Voltage ( $V_{\text{DRM}}$ )<br>On-state Voltage ( $V_{\text{TM}}$ )<br><br>Critical rate of rise of<br>off-state Voltage ( $dv/dt$ )          | 800          |     | 300<br>1.8<br>3.0   | nA<br>V<br>V<br><br>$\text{V}/\mu\text{s}$           | $V_{\text{DRM}} = 800\text{V}$ (note 1)<br>$I_{\text{DRM}} = 300\text{nA}$<br>$I_{\text{TM}} = 100\text{mA}$ ( peak )   |
| Coupled                                  | Input Current to Trigger ( $I_{\text{FT}}$ )(note 2 )<br>MOC3080<br>MOC3081<br>MOC3082<br>MOC3083<br><br>Holding Current , either direction ( $I_H$ )<br>Input to Output Isolation Voltage $V_{\text{ISO}}$ |              |     |                     |  |   |
|  |   |              |     | 30<br>15<br>10<br>5 | mA<br>mA<br>mA<br>mA                                 | $V_{\text{TM}} = 3\text{V}$ ( note 2 )  |
|  |   | 5300<br>7500 | 100 |                     | $\mu\text{A}$<br>$V_{\text{RMS}}$<br>$V_{\text{PK}}$ | See note 3<br>See note 3  |
| Zero<br>Crossing<br>Charact-<br>-eristic | Inhibit Voltage ( $V_{\text{IH}}$ )<br><br>Leakage in Inhibited State ( $I_S$ )   |              |     | 35<br><br>500       | V<br><br>$\mu\text{A}$                               | $I_F = \text{Rated } I_{\text{FT}}$<br>MT1-MT2 Voltage<br>above which device<br>will not trigger<br>$I_F = \text{Rated } I_{\text{FT}}$<br>$V_{\text{DRM}} = 800\text{V}$ off-state |

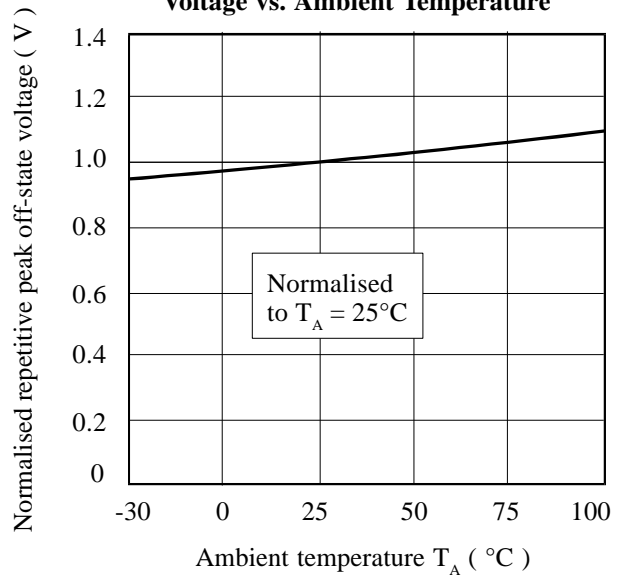
Note 1. Guaranteed to trigger at an  $I_F$  value less than or equal to max.  $I_{\text{FT}}$ , recommended  $I_F$  lies between Rated  $I_{\text{FT}}$  and absolute max.  $I_F$ .

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

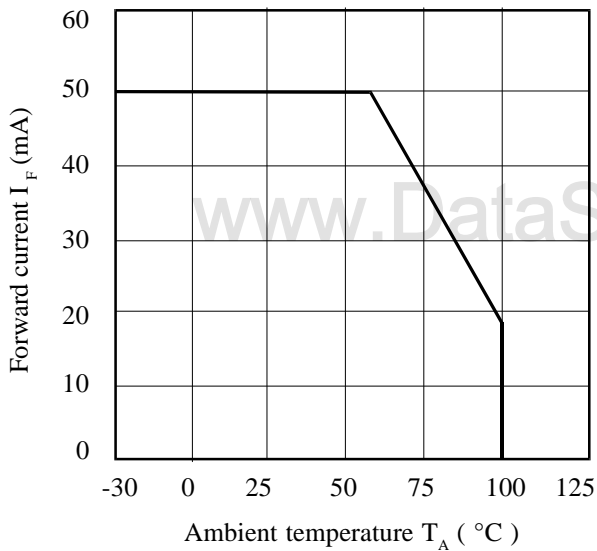
**RMS On-state Current vs. Ambient Temperature**



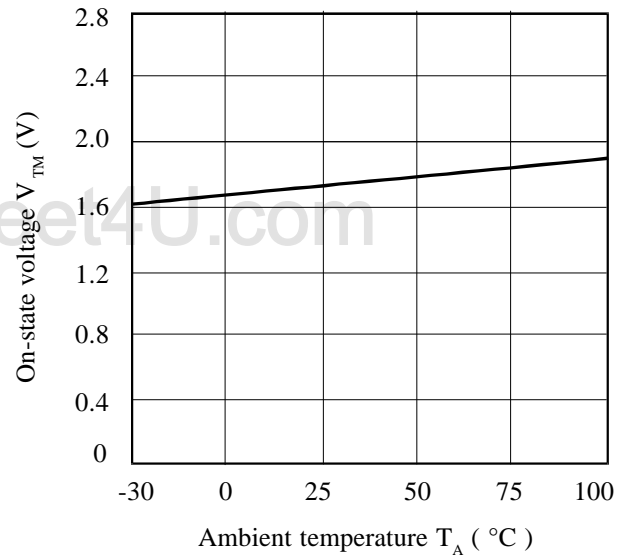
**Normalised Repetitive Peak Off-state Voltage vs. Ambient Temperature**



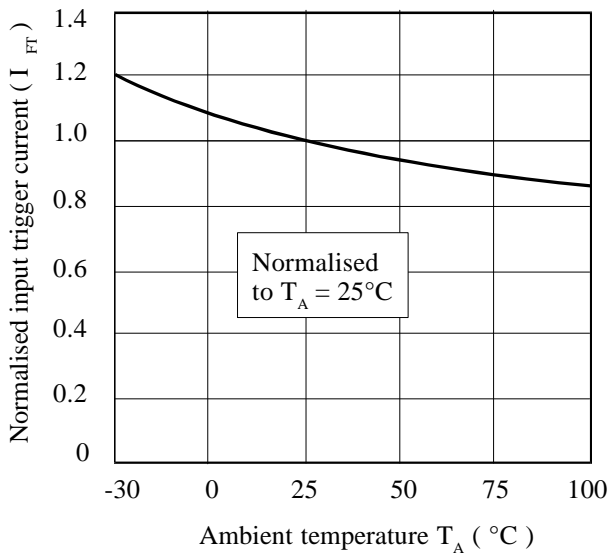
**Forward Current vs. Ambient Temperature**



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



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



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

