

MOC3040, MOC3041, MOC3042, MOC3043  
MOC3040X, MOC3041X, MOC3042X, MOC3043X



# ISOCOM

COMPONENTS

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



### APPROVALS

- UL recognised, File No. E91231  
Package Code "GG" or "TT"
- 'X' SPECIFICATION APPROVALS
  - VDE 0884 in 3 available lead form : -
    - STD
    - G form
    - SMD approved to CECC 00802

### DESCRIPTION

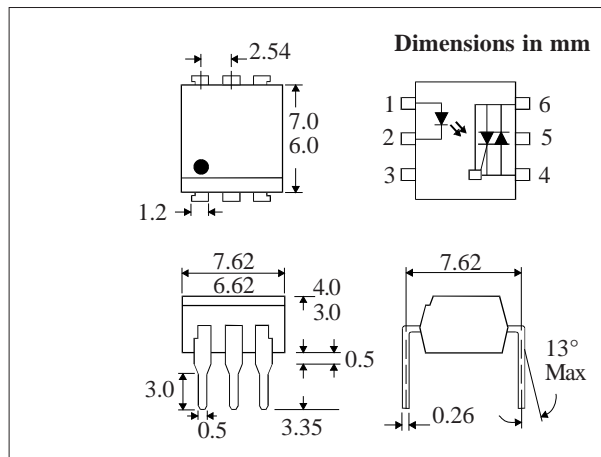
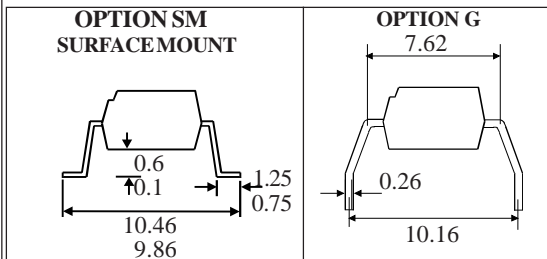
The MOC304\_ Series are optically coupled isolators consisting of a Gallium Arsenide infrared emitting diode coupled with a monolithic silicon detector performing the functions of a zero crossing bilateral triac mounted in a standard 6 pin dual-in-line package.

### 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
- 400V 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 \_\_\_\_\_ -55°C - +150°C  
Operating Temperature \_\_\_\_\_ -40°C - +100°C  
Lead Soldering Temperature \_\_\_\_\_ 260°C  
(1.6mm from case for 10 seconds)

### 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 \_\_\_\_\_ 400V  
Peak Repetitive Surge Current  
(PW=100µs, 120pps) \_\_\_\_\_ 1A  
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 ( $V_F$ )<br>Reverse Current ( $I_R$ )   |              | 1.2 | 1.4<br>10           | V<br>$\mu\text{A}$                                   | $I_F = 20\text{mA}$<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 ( $dv/dt$ )         | 400          |     | 500<br><br>3.0      | nA<br>V<br>V   | $V_{\text{DRM}} = 400\text{V}$ (note 1)<br>$I_{\text{DRM}} = 500\text{nA}$<br>$I_{\text{TM}} = 100\text{mA}$ ( peak )   |
| Coupled                                  | Input Current to Trigger ( $I_{\text{FT}}$ )(note 2)<br>MOC3040<br>MOC3041<br>MOC3042<br>MOC3043<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 | 400 |                     | $\mu\text{A}$<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 ( $I_S$ )  |              |     | 20<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>$V_{\text{DRM}} = \text{Rated } V_{\text{DRM}}$<br>Off-state |

Note 1. Test voltage must be applied within  $dv/dt$  rating.

Note 2. 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 3. Measured with input leads shorted together and output leads shorted together.

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