



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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MOC3020X, MOC3021X, MOC3022X, MOC3023X  
MOC3020, MOC3021, MOC3022, MOC3023



**ISOCOM**  
  
**COMPONENTS**

**OPTICALLY COUPLED BILATERAL  
SWITCH NON-ZERO CROSSING  
TRIAC**



**APPROVALS**

- UL recognised, File No. E91231 under Package System 'KK'

**'X' SPECIFICATION APPROVALS**

- VDE 0884 in 3 available lead forms :-  
- STD  
- G form  
- SMD approved to CECC 00802

**DESCRIPTION**

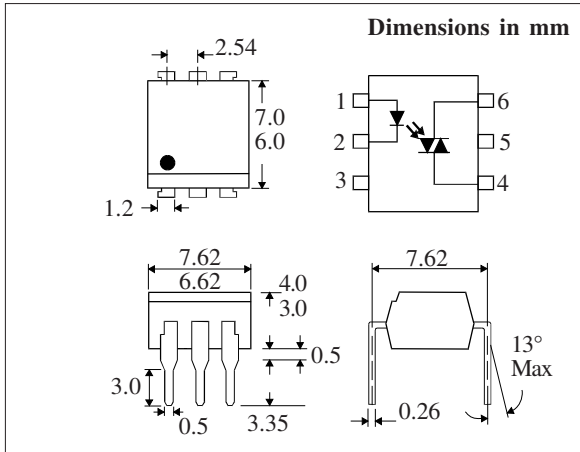
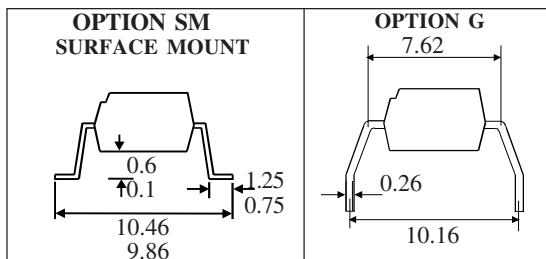
The MOC302\_ series are optically coupled isolators consisting of a Gallium Arsenide infrared emitting diode coupled with a light activated silicon bilateral switch performing the functions of a triac mounted in a standard 6 pin dual-in-line package.

**FEATURE**

- 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>)
- 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 \_\_\_\_\_ 70mW  
(derate linearly 0.93mW/°C above 25°C)

**OUTPUT PHOTO TRIAC**

Off-State Output Terminal Voltage \_\_\_\_\_ 400V  
Forward Current (Peak) \_\_\_\_\_ 1A  
Power Dissipation \_\_\_\_\_ 300mW  
(derate linearly 4.0mW/°C above 25°C)

**POWER DISSIPATION**

Total Power Dissipation \_\_\_\_\_ 330mW  
(derate linearly 4.4mW/°C above 25°C)

**ISOCOM COMPONENTS 2004 LTD**  
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**ELECTRICAL CHARACTERISTICS (  $T_A = 25^\circ\text{C}$  Unless otherwise noted )**

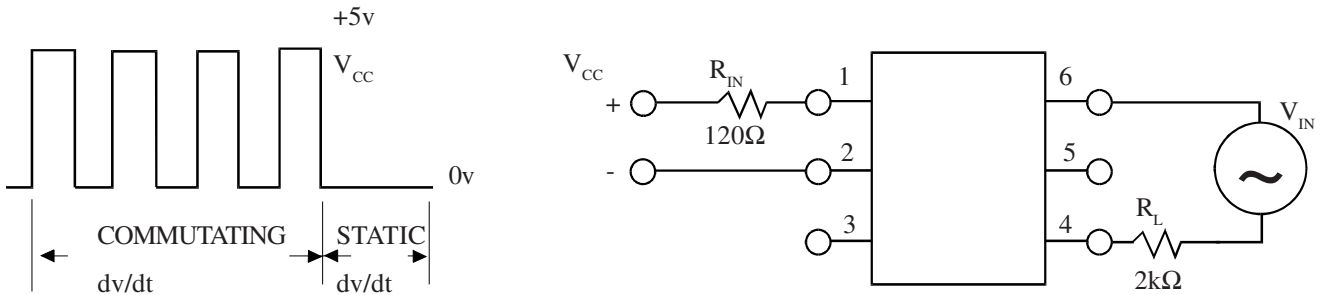
PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage ( $V_F$ ) Reverse Current ( $I_R$ )		1.2	1.5	V $\mu\text{A}$	$I_F = 10\text{mA}$ $V_R = 6\text{V}$
Output	Peak Off-state Current ( $I_{\text{DRM}}$ ) Peak Blocking Voltage ( $V_{\text{DRM}}$ ) On-state Voltage ( $V_{\text{TM}}$ ) Critical rate of rise of off-state Voltage ( $dv/dt$ ) ( note 1 ) Critical rate of rise of commutating Voltage ( $dv/dt$ ) ( note 1 )	400		100	nA V V V/ $\mu\text{s}$ V/ $\mu\text{s}$	$V_{\text{DRM}} = 400\text{V}$ ( note 1 ) $I_{\text{DRM}} = 100\text{nA}$ $I_{\text{TM}} = 100\text{mA}$ ( peak )  $I_{\text{load}} = 15\text{mA}$ , $V_{\text{IN}} = 30\text{V}$ ( fig 1. )
Coupled	Input Current to Trigger ( $I_{\text{FT}}$ ) (note 2 ) MOC3020 MOC3021 MOC3022 MOC3023  Holding Current , either direction ( $I_H$ )  Input to Output Isolation Voltage $V_{\text{ISO}}$			30 15 10 5	mA mA mA mA  $\mu\text{A}$  $V_{\text{RMS}}$ $V_{\text{PK}}$	$V_D = 3\text{V}$ ( note 2 )      See note 3 See note 3

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

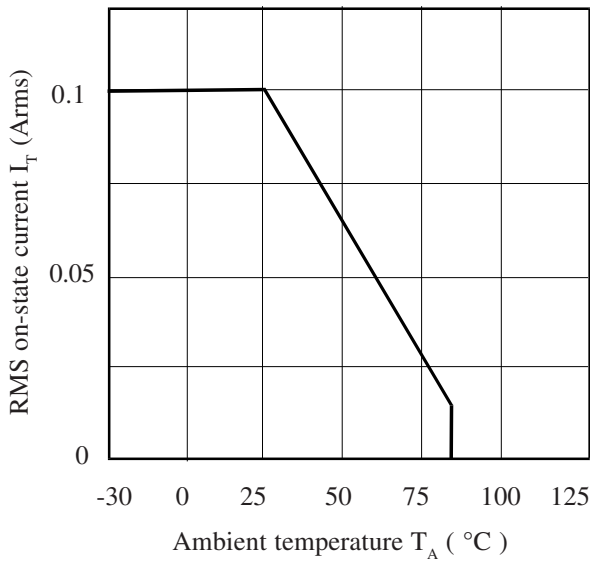
Note 2. Guaranteed to trigger at an  $I_F$  value less than or equal to max.  $I_{\text{FT}}$ , recommended  $I_F$  lies between Rated  $I_{\text{FT}}$  and absolute max.  $I_{\text{FT}}$ .

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

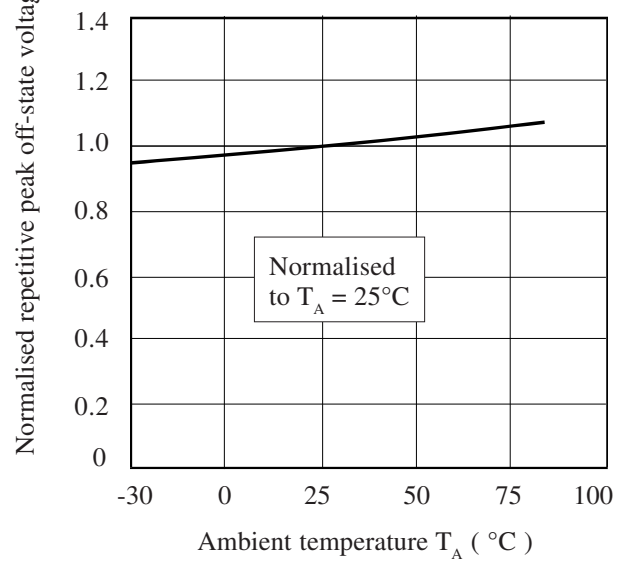
**FIGURE 1**



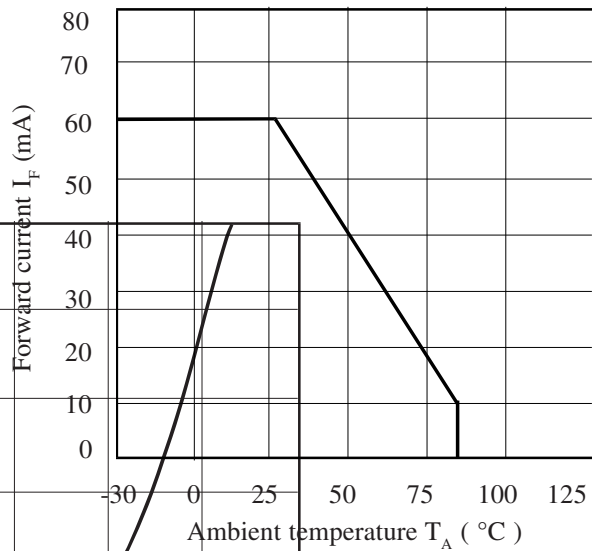
**RMS On-state Current vs. Ambient Temperature**



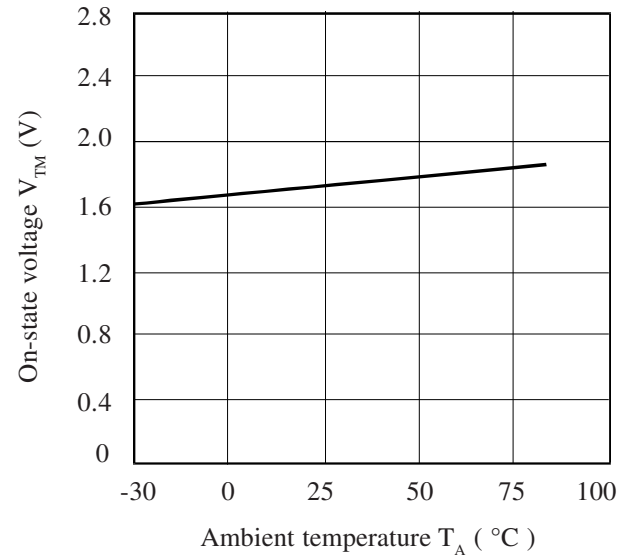
**Normalised Repetitive Peak Off-state Voltage vs. Ambient Temperature**



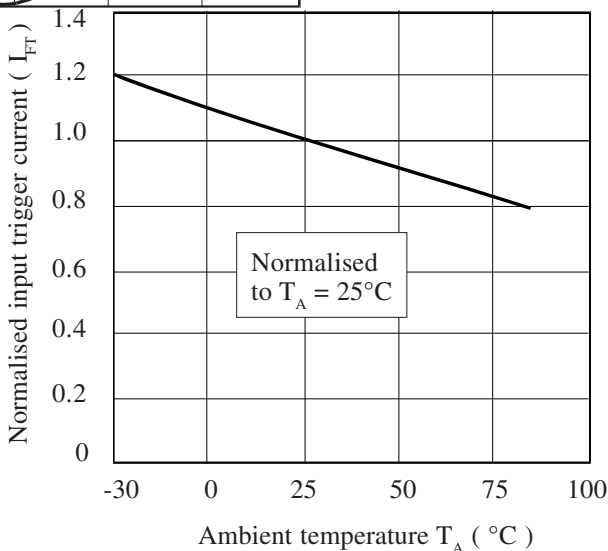
**Forward Current vs. Ambient Temperature**



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



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



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

