

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



**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**

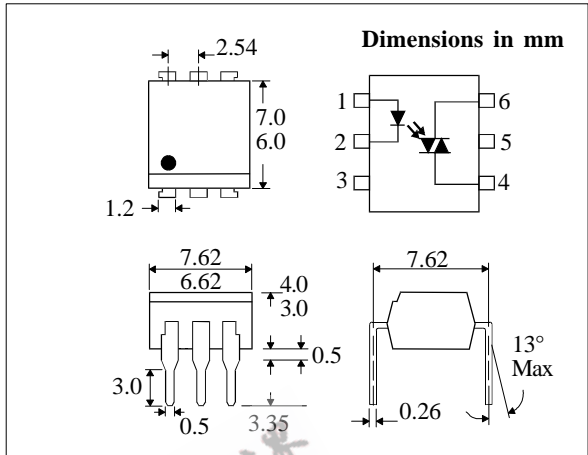
The MOC302\_ series are optically coupled isolators consisting of a Gallium Arsenide infrared emitting diode coupled with a light activated silicon bilateral switch performing the functions of a triac mounted in a standard 6 pin dual-in-line package.

**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**

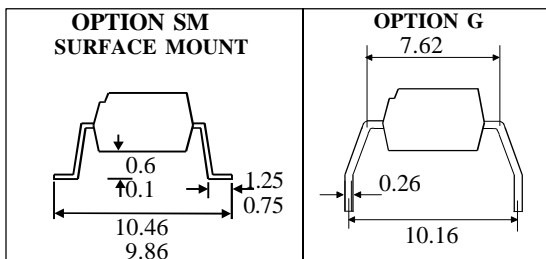
Forward Current	50mA
Reverse Voltage	6V
Power Dissipation	70mW (derate linearly 0.93mW/°C above 25°C)

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

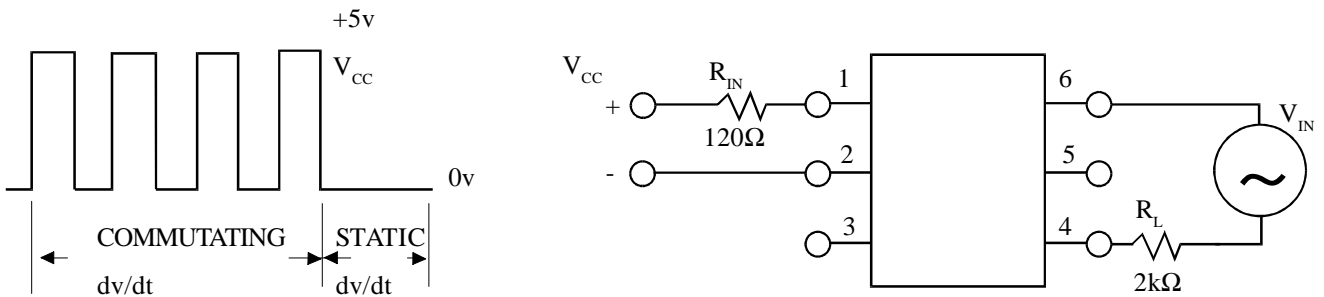
PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage ( $V_F$ ) Reverse Current ( $I_R$ )		1.2	1.5	V $\mu\text{A}$	$I_F = 10\text{mA}$ $V_R = 6\text{V}$
Output	Peak Off-state Current ( $I_{\text{DRM}}$ ) Peak Blocking Voltage ( $V_{\text{DRM}}$ ) On-state Voltage ( $V_{\text{TM}}$ ) Critical rate of rise of off-state Voltage ( $dv/dt$ ) ( note 1 ) Critical rate of rise of commutating Voltage ( $dv/dt$ ) ( note 1 )	400		100 3.0	nA V V	$V_{\text{DRM}} = 400\text{V}$ ( note 1 ) $I_{\text{DRM}} = 100\text{nA}$ $I_{\text{TM}} = 100\text{mA}$ ( peak )
Coupled	Input Current to Trigger ( $I_{\text{FT}}$ ) (note 2 ) MOC3020 MOC3021 MOC3022 MOC3023			30 15 10 5	mA mA mA mA	$V_D = 3\text{V}$ ( note 2 )
	Holding Current , either direction ( $I_H$ )		100		$\mu\text{A}$	
	Input to Output Isolation Voltage $V_{\text{ISO}}$	5300 7500			$V_{\text{RMS}}$ $V_{\text{PK}}$	See note 3 See note 3

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

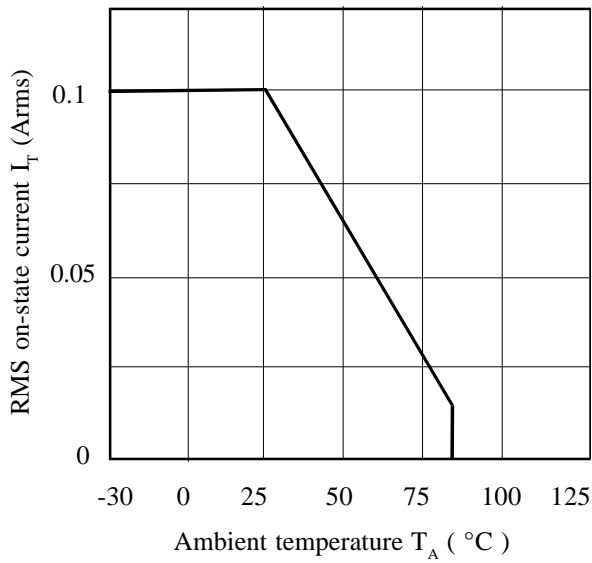
Note 2. Guaranteed to trigger at an  $I_F$  value less than or equal to max.  $I_{\text{FT}}$ , recommended  $I_F$  lies between Rated  $I_{\text{FT}}$  and absolute max.  $I_{\text{FT}}$ .

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

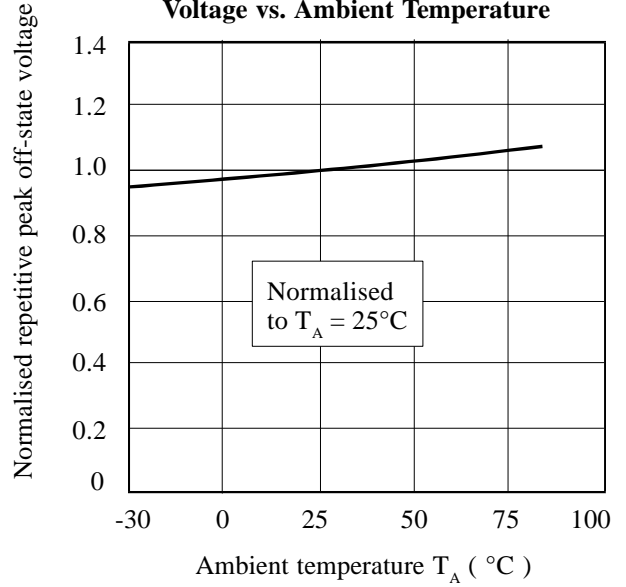
**FIGURE 1**



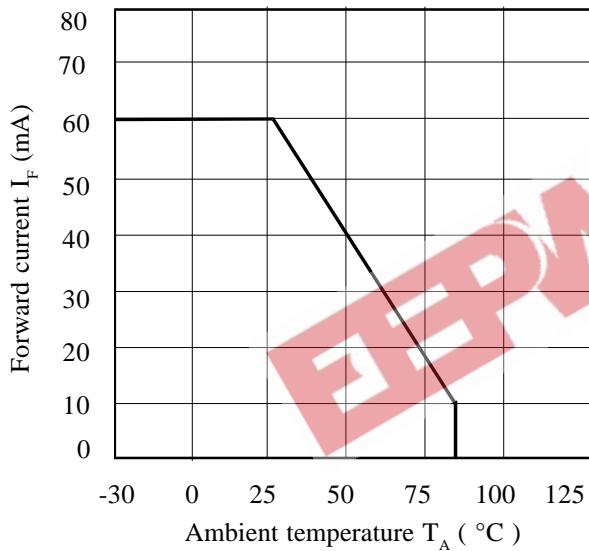
**RMS On-state Current vs. Ambient Temperature**



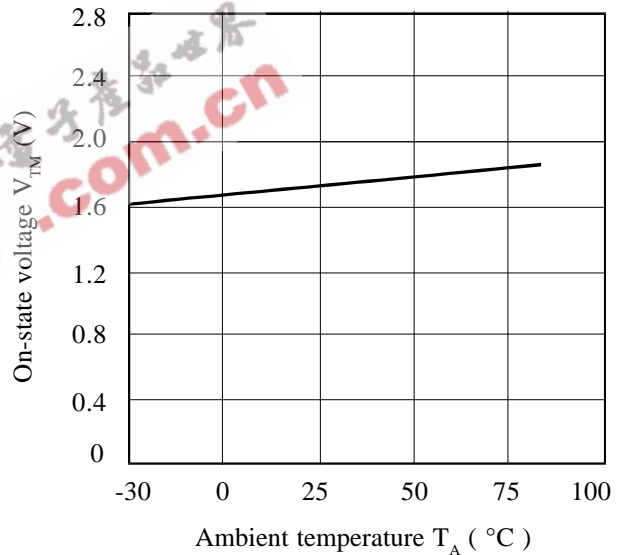
**Normalised Repetitive Peak Off-state Voltage vs. Ambient Temperature**



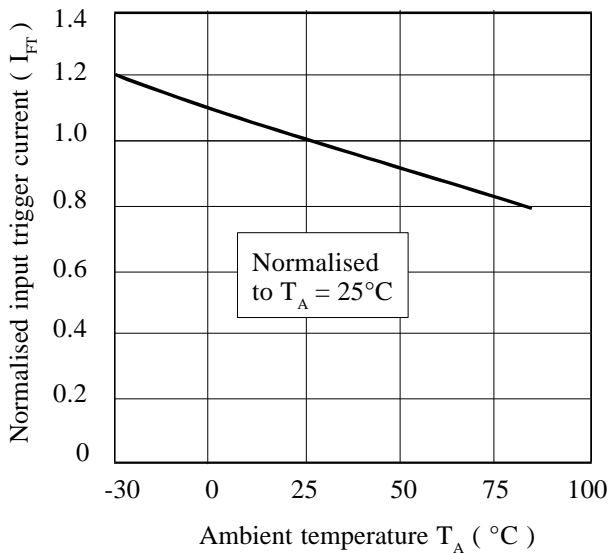
**Forward Current vs. Ambient Temperature**



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



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



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

