

MOC3009X, MOC3010X, MOC3011X, MOC3012X
MOC3009, MOC3010, MOC3011, MOC3012



OPTICALLY COUPLED BILATERAL SWITCH NON-ZERO CROSSING TRIAC

APPROVALS

- UL recognised, File No. E91231

'X' SPECIFICATION APPROVALS

- VDE 0884 in 2 available lead forms : -
- STD
- G form

DESCRIPTION

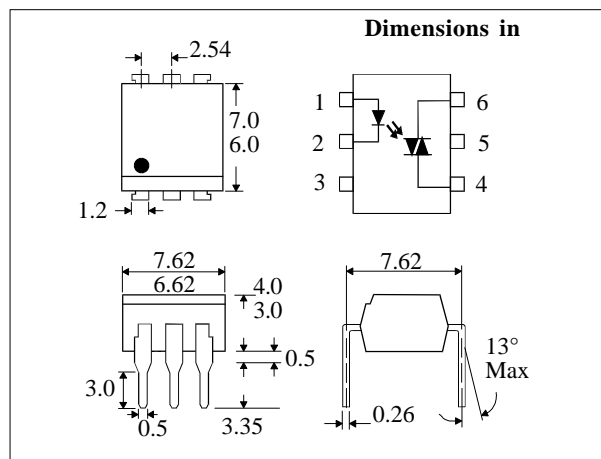
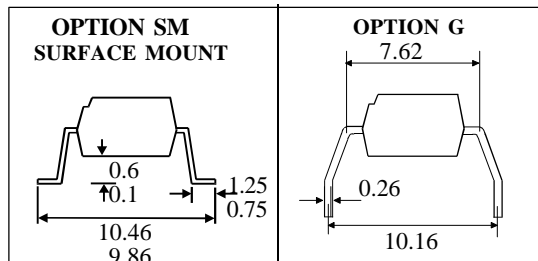
The MOC3009,301_ series are optically coupled isolators consisting of a Gallium Arsenide infrared emitting diode coupled with a light activated silicon bilateral switch performing the functions of a triac mounted in a standard 6 pin dual-in-line package.

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_{RMS}, 7.5kV_{PK})
- 250V 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	70mW
(derate linearly 0.93mW/°C above 25°C)	

OUTPUT PHOTO TRIAC

Off-State Output Terminal Voltage	250V
RMS Forward Current	100mA
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)

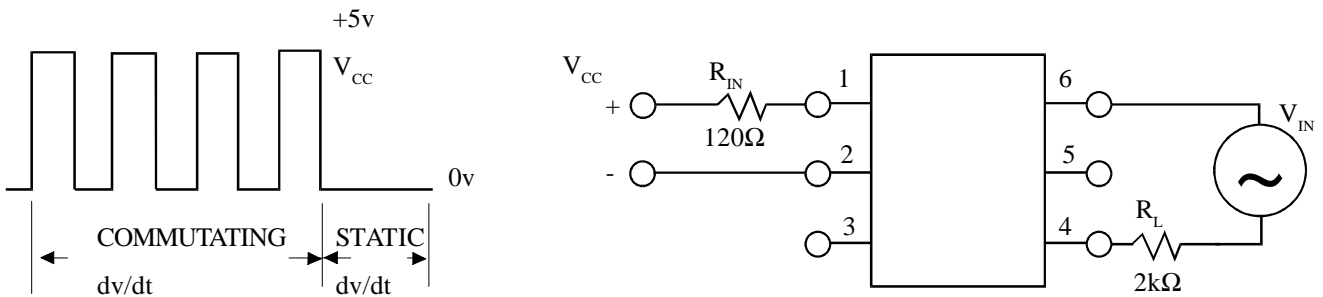
PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage (V_F) Reverse Current (I_R)		1.2	1.5	V μA	$I_F = 10\text{mA}$ $V_R = 6\text{V}$
Output	Peak Off-state Current (I_{DRM}) Peak Blocking Voltage (V_{DRM}) On-state Voltage (V_{TM}) Critical rate of rise of off-state Voltage (dv/dt) (note 1) Critical rate of rise of commutating Voltage (dv/dt) (note 1)	250		100	nA V V $\text{V}/\mu\text{s}$ $\text{V}/\mu\text{s}$	$V_{\text{DRM}} = 250\text{V}$ (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_{FT}) (note 2) MOC3009 MOC3010 MOC3011 MOC3012 Holding Current , either direction (I_H) Input to Output Isolation Voltage V_{ISO}			30 15 10 5	mA mA mA mA μA V_{RMS} V_{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.

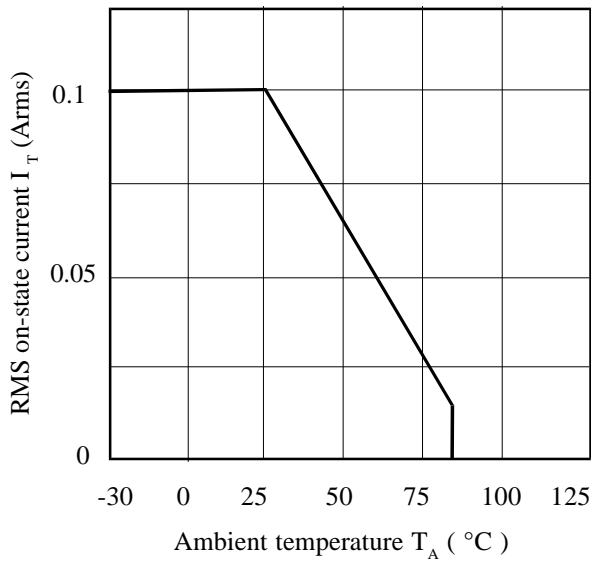
Note 2. Guaranteed to trigger at an I_F value less than or equal to max. I_{FT} , recommended I_F lies between Rated I_{FT} and absolute max. I_{FT} .

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

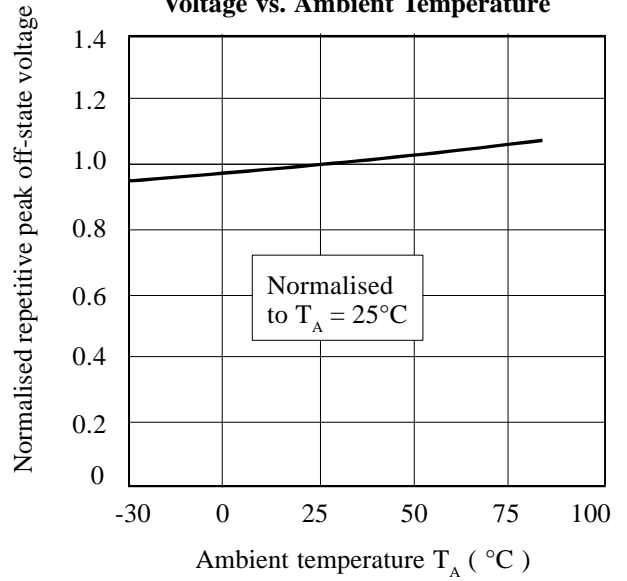
FIGURE 1



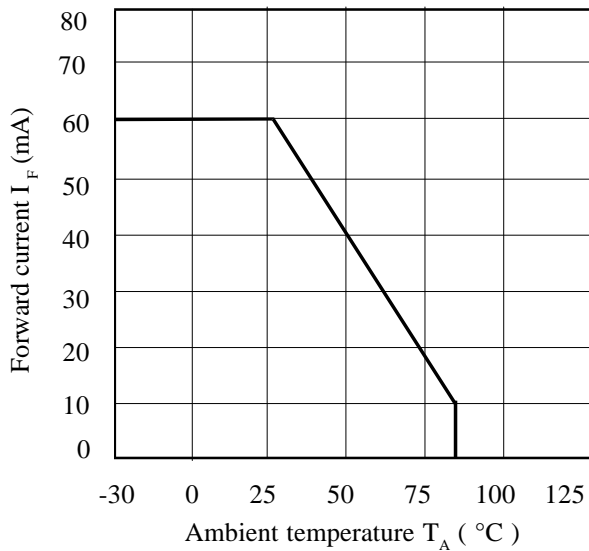
RMS On-state Current vs. Ambient Temperature



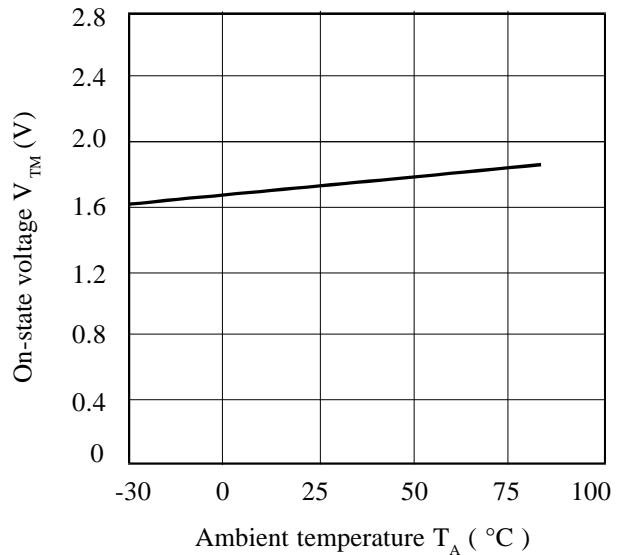
Normalised Repetitive Peak Off-state Voltage vs. Ambient Temperature



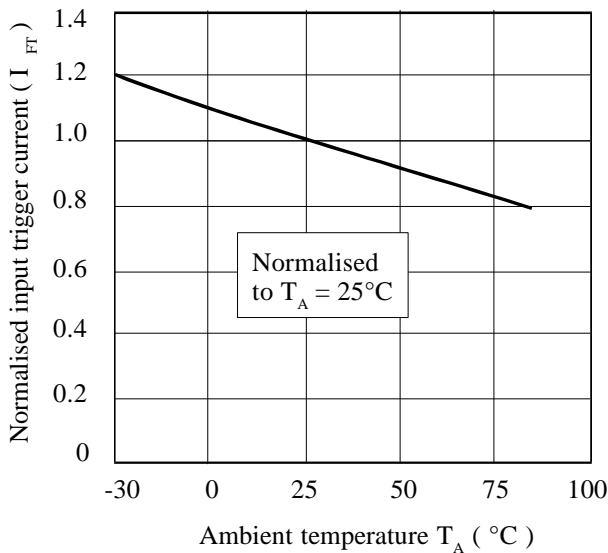
Forward Current vs. Ambient Temperature



On-state Voltage vs. Ambient Temperature



Normalised Input Trigger Current vs. Ambient Temperature



On-state Current vs. On-state Voltage

