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

OPTICALLY COUPLED BILATERAL SWITCH LIGHT ACTIVATED ZERO VOLTAGE CROSSING TRIAC

'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.

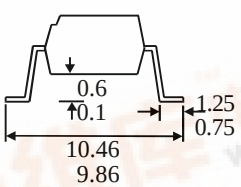
FEATURES

- 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

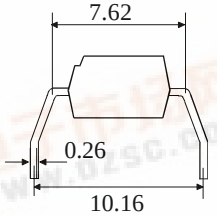
APPLICATIONS

- CRTs
- Power Triac Driver
- Motors
- Consumer appliances
- Printers

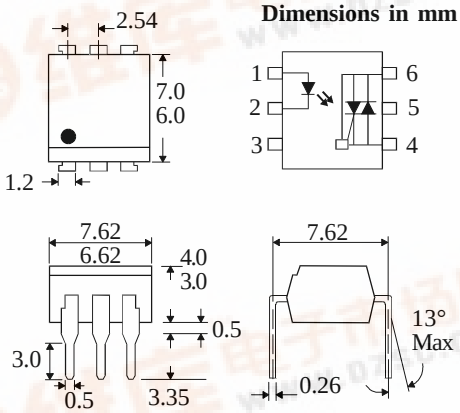
OPTION SM
SURFACE MOUNT



OPTION G



Dimensions in mm



ABSOLUTE MAXIMUM RATINGS
(25 °C unless otherwise noted)

Storage Temperature	-55°C - +150°C
Operating Temperature	-40°C - +100°C
Lead Soldering Temperature (1.6mm from case for 10 seconds)	260°C

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
Forward Current (Peak)	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°C Unless otherwise noted)

PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage (V_F) Reverse Current (I_R)		1.2	1.4 10	V µA	I_F = 20mA V_R = 6V
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)	 400 600	 1500	500 3.0 	nA V V V/µs	V_{DRM} = 400V (note 1) I_{DRM} = 500nA I_{TM} = 100mA (peak)
Coupled	Input Current to Trigger (I_{FT})(note 2) MOC3040 MOC3041 MOC3042 MOC3043 Holding Current , either direction (I_H) Input to Output Isolation Voltage V_{ISO}	 5300 7500	 400	 30 15 10 5 	 mA mA mA mA µA V_{RMS} V_{PK}	 V_{TM} = 3V (note 2) See note 3 See note 3
Zero Crossing Charact--eristic	Inhibit Voltage (V_{IH}) Leakage in Inhibited State (I_S)			20 500	V mA	I_F = Rated I_{FT} MT1-MT2 Voltage above which device will not trigger I_F = Rated I_{FT} V_{DRM} = Rated V_{DRM} 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_{FT}, recommended I_F lies between Rated I_{FT} and absolute max. I_F.

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

CHARACTERISTIC CURVES

Fig.1 Forward Current vs. Ambient Temperature

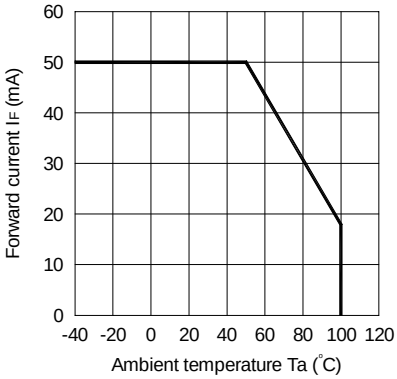


Fig.2 On-state Current vs. Ambient Temperature

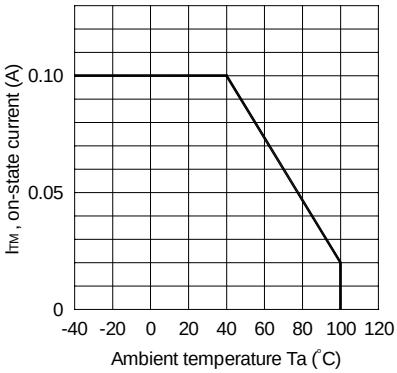


Fig.3 Minimum Trigger Current vs. Ambient Temperature

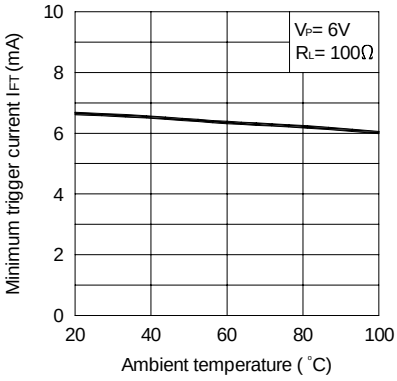


Fig.4 Forward Current vs. Forward Voltage

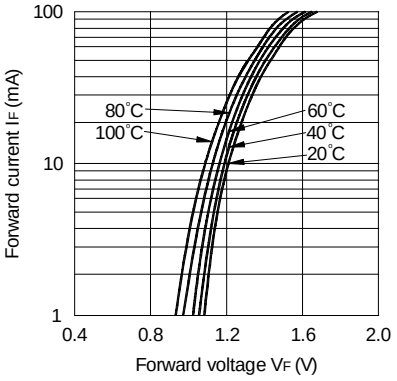


Fig.5 On-state Voltage vs. Ambient Temperature

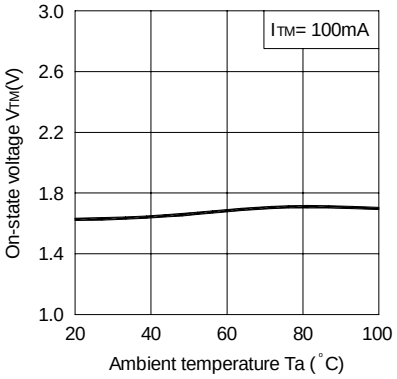
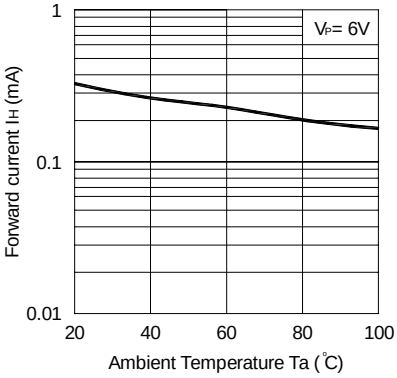


Fig.6 Holding Current vs. Ambient Temperature



CHARACTERISTIC CURVES

Fig.7 Turn-on Time vs. Forward Current

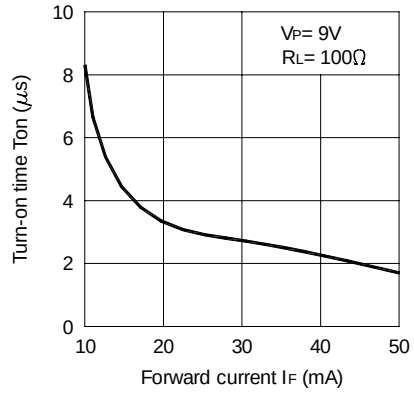


Fig.8 Repetitive Peak Off-state Current vs. Temperature

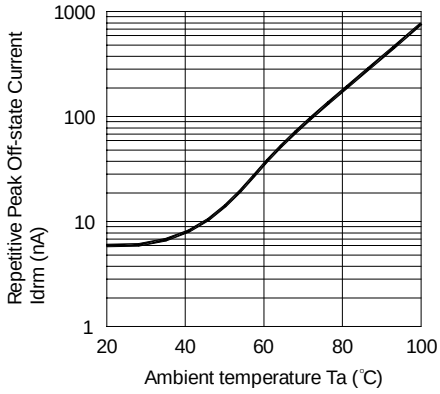
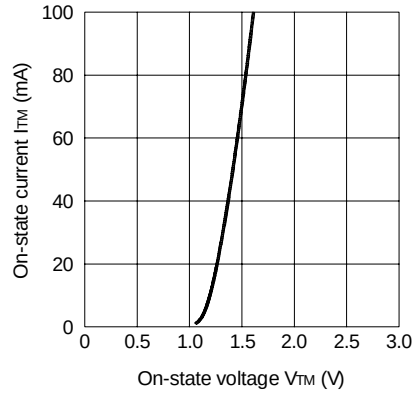


Fig.9 On-state Current vs. On-state Voltage



Static dv/dt Test Circuit