



## OPTICALLY COUPLED RANDOM PHASE NON-ZERO CROSSING TRIAC DRIVERS

### DESCRIPTION

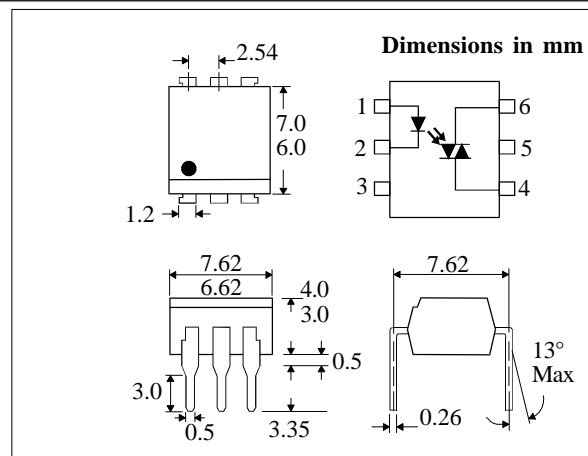
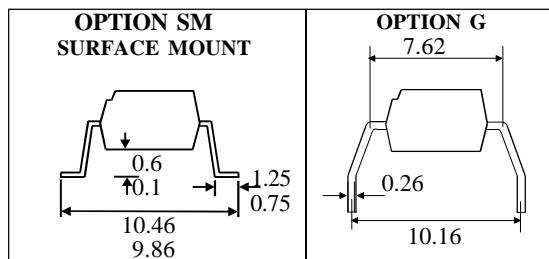
The IS3052 is an optically coupled isolator consisting of a Gallium Arsenide infrared emitting diode coupled with a light activated silicon bilateral switch performing the functions of a triac mounted in a standard 6 pin dual-in-line package. The IS3052 provides random phase control of high current triacs or thyristors. The IS3052 features greatly enhanced static dv/dt capability to ensure stable switching performance of inductive loads.

### 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>)
- 550V Peak Blocking Voltage
- All electrical parameters 100% tested
- Custom electrical selections available

### APPLICATIONS

- Solenoid / Valve Controls
- Lamp Ballasts
- Static AC Power Switch
- Interfacing Microprocessors to 115 and 240Vac Peripherals
- Solid State Relays
- Incandescent Lamp Dimmers
- Temperature Controls
- Motor Controls



### ABSOLUTE MAXIMUM RATINGS (25 °C unless otherwise noted)

Storage Temperature \_\_\_\_\_ -40°C - +100°C  
Operating Temperature \_\_\_\_\_ -40°C - +85°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 \_\_\_\_\_ 60mA  
Reverse Voltage \_\_\_\_\_ 3V  
Power Dissipation \_\_\_\_\_ 100mW  
(derate linearly 1.33mW/°C above 25°C)

### OUTPUT PHOTO TRIAC

Off-State Output Terminal Voltage \_\_\_\_\_ 550V  
RMS Forward Current \_\_\_\_\_ 100mA  
Forward Current (Peak) \_\_\_\_\_ 1.2A  
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)

### ISOCOMCOMPONENTSLTD

Unit 25B, Park View Road West,  
Park View Industrial Estate, Brenda Road  
Hartlepool, TS25 1YD England Tel: (01429)863609  
Fax: (01429)863581 e-mail sales@isocom.co.uk  
<http://www.isocom.com>

### ISOCOM INC

1024 S. Greenville Ave, Suite 240,  
Allen, TX 75002 USA  
Tel: (214)495-0755 Fax: (214)495-0901  
e-mail info@isocom.com  
<http://www.isocom.com>

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

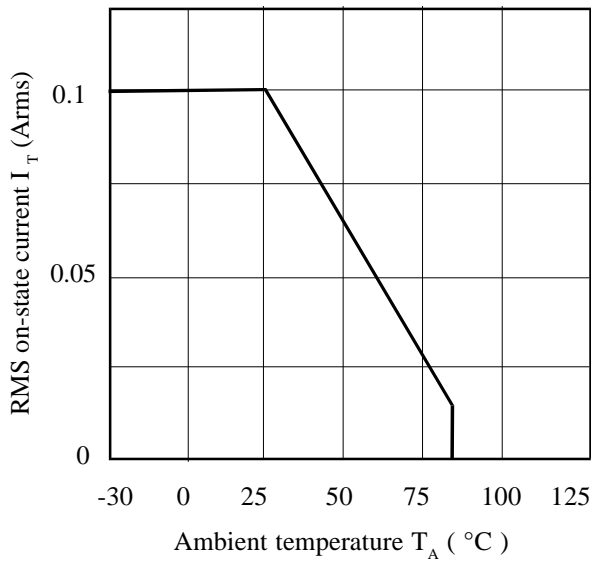
PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage ( $V_F$ ) Reverse Current ( $I_R$ )		1.2	1.5 100	V $\mu\text{A}$	$I_F = 10\text{mA}$ $V_R = 3\text{V}$
Output	Peak Off-state Current ( $I_{\text{DRM}}$ ) Peak Blocking Voltage ( $V_{\text{DRM}}$ )  On-state Voltage ( $V_{\text{TM}}$ )  Critical rate of rise of off-state Voltage@ 400V ( dv/dt ) ( note 1 )	550		100 3.0	nA V V V/ $\mu\text{s}$	$V_{\text{DRM}} = 550\text{V}$ (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 )  Holding Current , either direction ( $I_H$ )  Input to Output Isolation Voltage $V_{\text{ISO}}$			10	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.

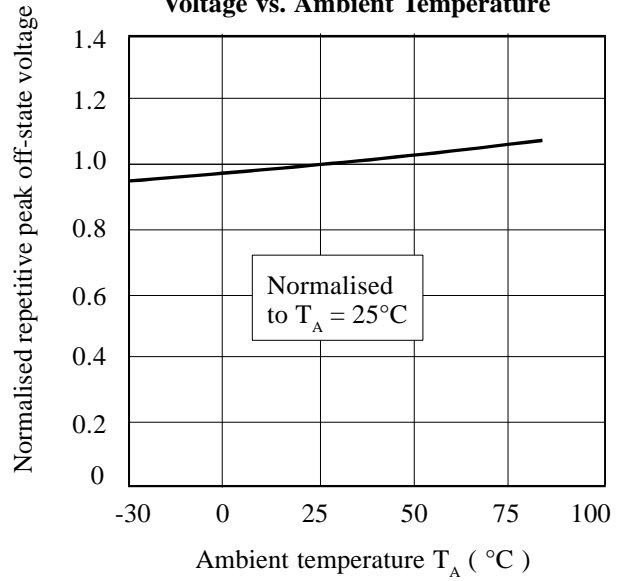
Note 2. Guaranteed to trigger at an  $I_F$  value less than or equal to max.  $I_{\text{FT}}$ , recommended  $I_F$  lies between Rated  $I_{\text{FT}}$  and absolute max.  $I_{\text{FT}}$ .

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

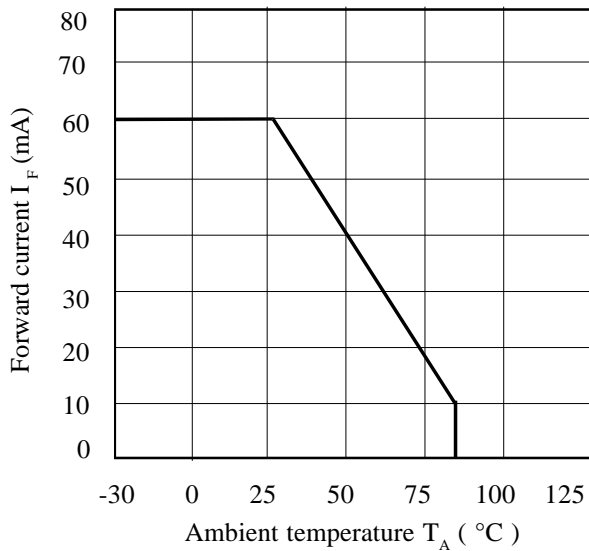
**RMS On-state Current vs. Ambient Temperature**



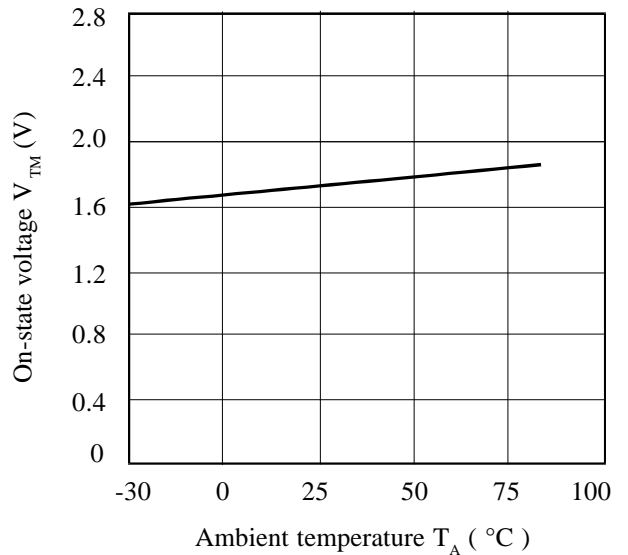
**Normalised Repetitive Peak Off-state Voltage vs. Ambient Temperature**



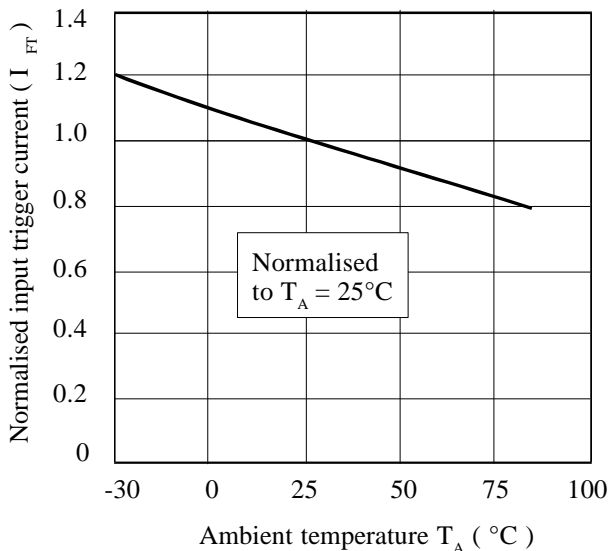
**Forward Current vs. Ambient Temperature**



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



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



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

