



OPTICALLY COUPLED RANDOM PHASE NON-ZERO CROSSING TRIAC DRIVERS

DESCRIPTION

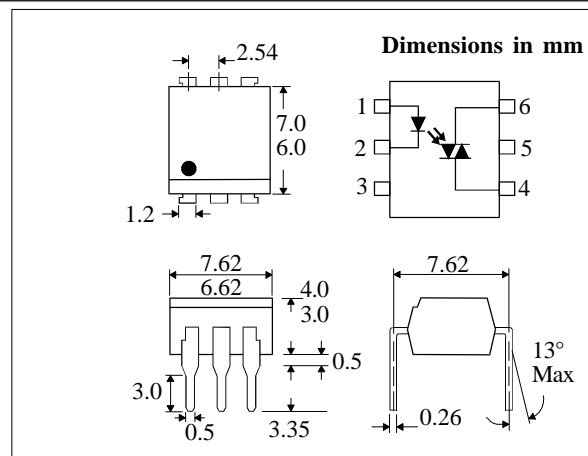
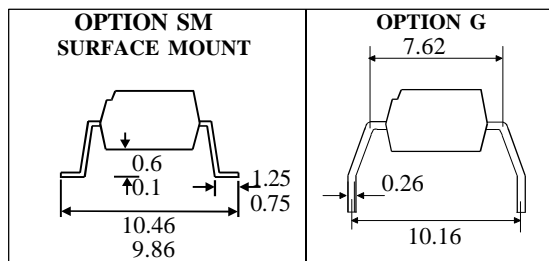
The IS3052 is an optically coupled isolator consisting of a Gallium Arsenide infrared emitting diode coupled with a light activated silicon bilateral switch performing the functions of a triac mounted in a standard 6 pin dual-in-line package. The IS3052 provides random phase control of high current triacs 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_{RMS}, 7.5kV_{PK})
- 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)

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

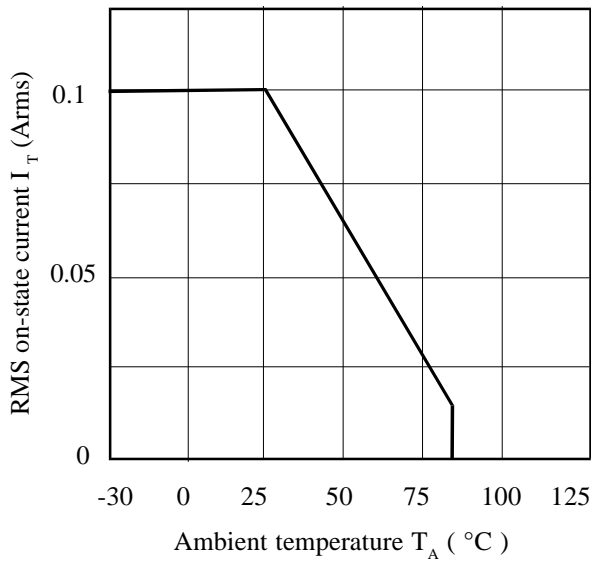
PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage (V_F) Reverse Current (I_R)		1.2	1.5 100	V μA	$I_F = 10\text{mA}$ $V_R = 3\text{V}$
Output	Peak Off-state Current (I_{DRM}) Peak Blocking Voltage (V_{DRM})	550		100	nA V	$V_{\text{DRM}} = 550\text{V}$ (note 1) $I_{\text{DRM}} = 100\text{nA}$
	On-state Voltage (V_{TM})		1.5	3.0	V	$I_{\text{TM}} = 100\text{mA}$ (peak)
	Critical rate of rise of off-state Voltage@ 400V (dv/dt) (note 1)	1000			$\text{V}/\mu\text{s}$	
Coupled	Input Current to Trigger (I_{FT})(note 2)			10	mA	$V_D = 3\text{V}$ (note 2)
	Holding Current , either direction (I_H)		200		μA	
	Input to Output Isolation Voltage V_{ISO}	5300 7500			V_{RMS} V_{PK}	See note 3 See note 3

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

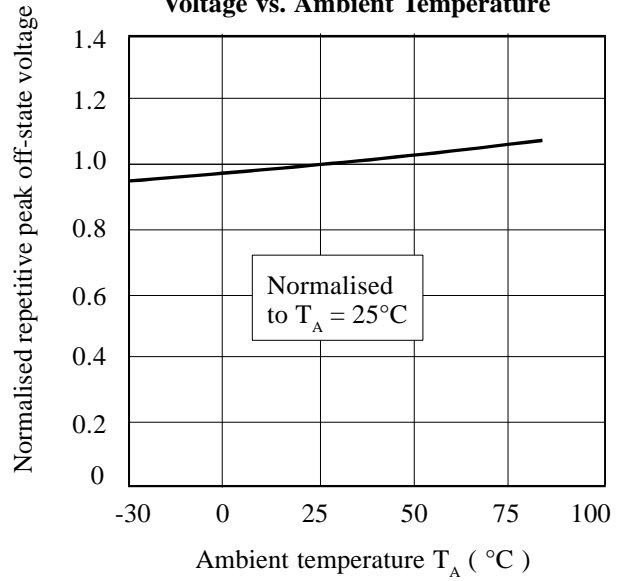
Note 2. Guaranteed to trigger at an I_F value less than or equal to max. I_{FT} , recommended I_F lies between Rated I_{FT} and absolute max. I_{FT} .

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

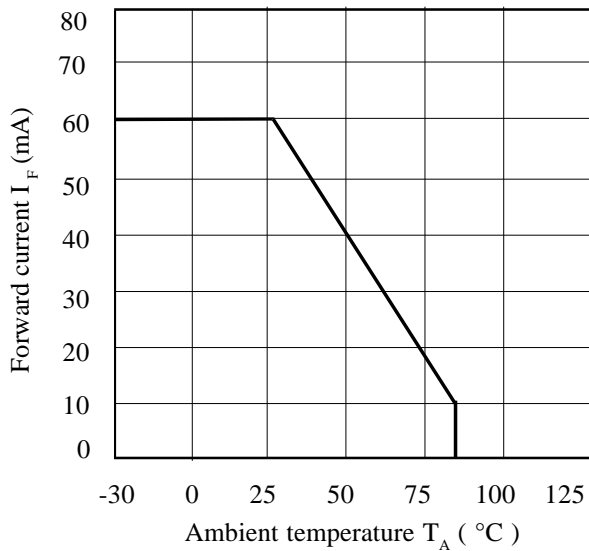
RMS On-state Current vs. Ambient Temperature



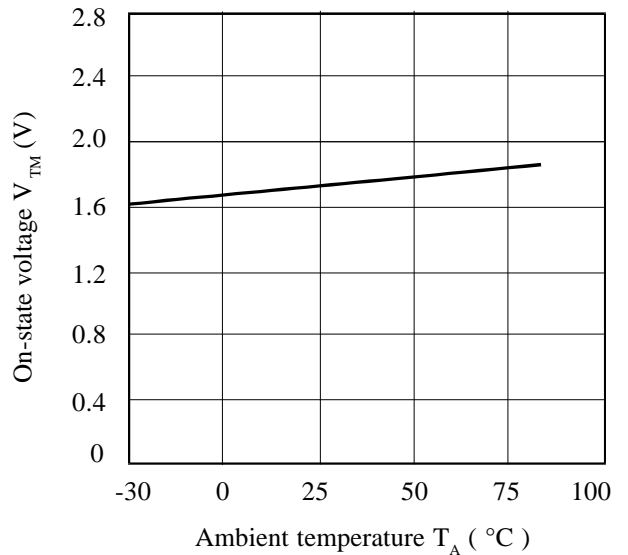
Normalised Repetitive Peak Off-state Voltage vs. Ambient Temperature



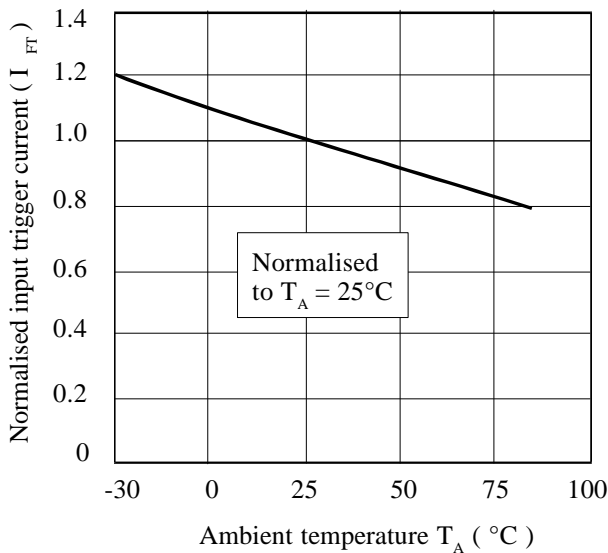
Forward Current vs. Ambient Temperature



On-state Voltage vs. Ambient Temperature



Normalised Input Trigger Current vs. Ambient Temperature



On-state Current vs. On-state Voltage

