

IS6003, IS6005, IS6010, IS6015, IS6030



OPTICALLY COUPLED BILATERAL SWITCH NON-ZERO CROSSING TRIAC

APPROVALS

- UL recognised, File No. E91231

'X' SPECIFICATION APPROVALS

- VDE 0884 pending

DESCRIPTION

The IS600_ 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.

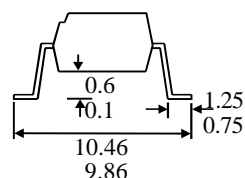
FEATURE

- 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 ($5.3kV_{RMS}$, $7.5kV_{PK}$)
- 600V Peak Blocking Voltage
- All electrical parameters 100% tested
- Custom electrical selections available

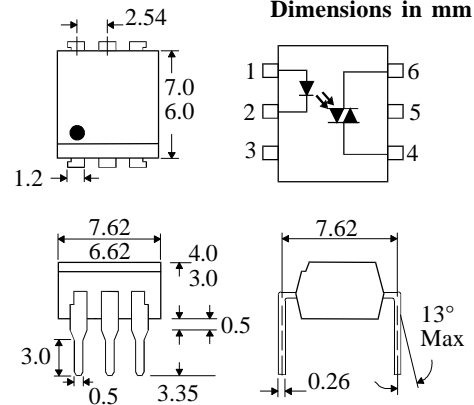
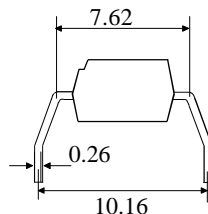
APPLICATIONS

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

OPTION SM SURFACE MOUNT



OPTION G



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 ____ 600V
 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)

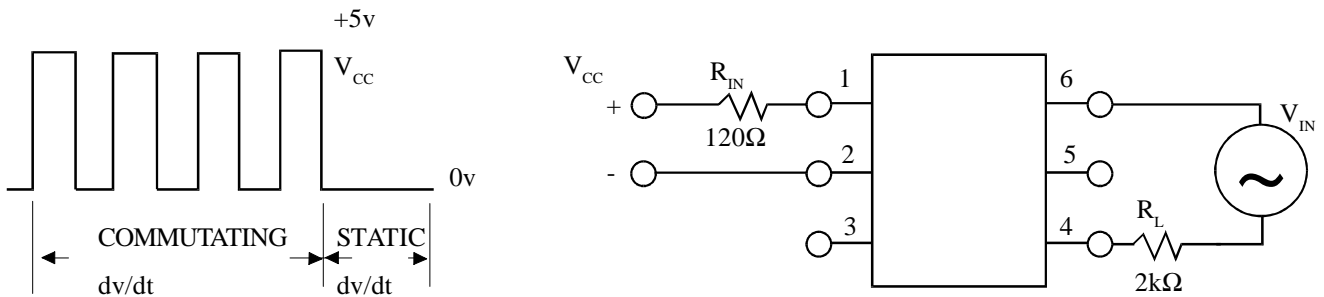
PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage (V_F) Reverse Current (I_R)		1.2	1.5	V μA	$I_F = 10\text{mA}$ $V_R = 3\text{V}$
Output	Peak Off-state Current (I_{DRM}) Peak Blocking Voltage (V_{DRM}) On-state Voltage (V_{TM}) Critical rate of rise of off-state Voltage (dv/dt) (note 1) Critical rate of rise of commutating Voltage (dv/dt) (note 1)	600		100	nA V V $\text{V}/\mu\text{s}$ $\text{V}/\mu\text{s}$	$V_{\text{DRM}} = 600\text{V}$ (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) IS6003 IS6005 IS6010 IS6015 IS6030 Holding Current , either direction (I_H) Input to Output Isolation Voltage V_{ISO}					
				3 5 10 15 30	mA mA mA mA mA	$V_D = 3\text{V}$ (note 2)
			100		μA	
		5300 7500			V_{RMS} V_{PK}	See note 3 See note 3

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

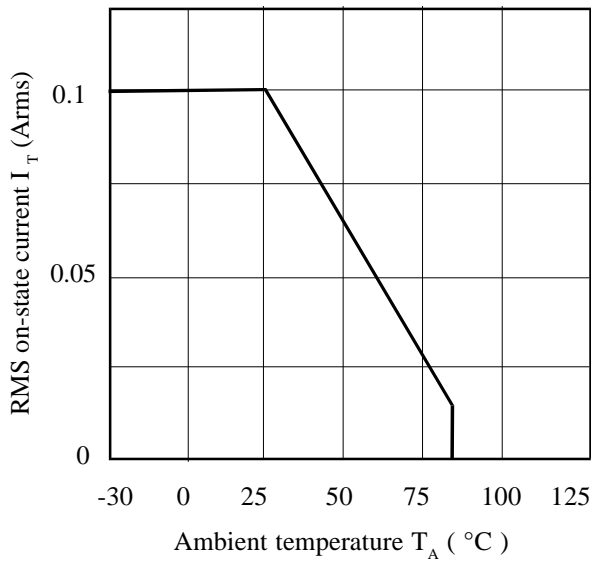
Note 2. Guaranteed to trigger at an I_F value less than or equal to max. I_{FT} , recommended I_F lies between Rated I_{FT} and absolute max. I_{FT} .

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

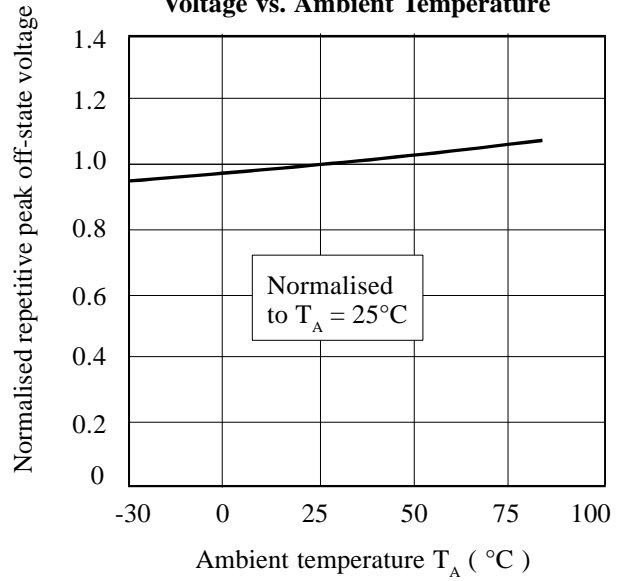
FIGURE 1



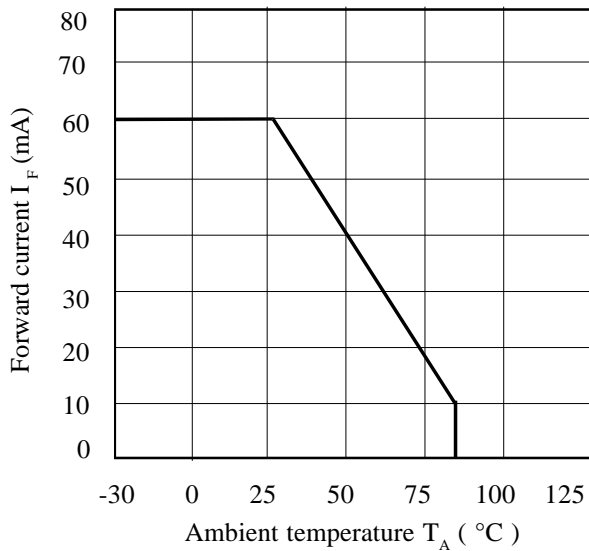
RMS On-state Current vs. Ambient Temperature



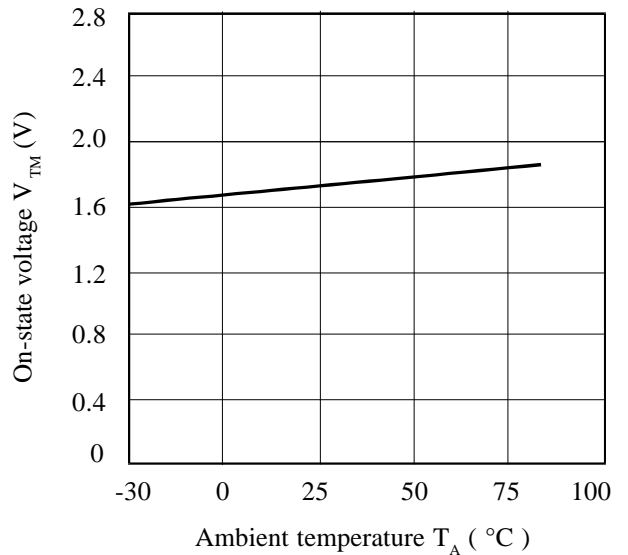
Normalised Repetitive Peak Off-state Voltage vs. Ambient Temperature



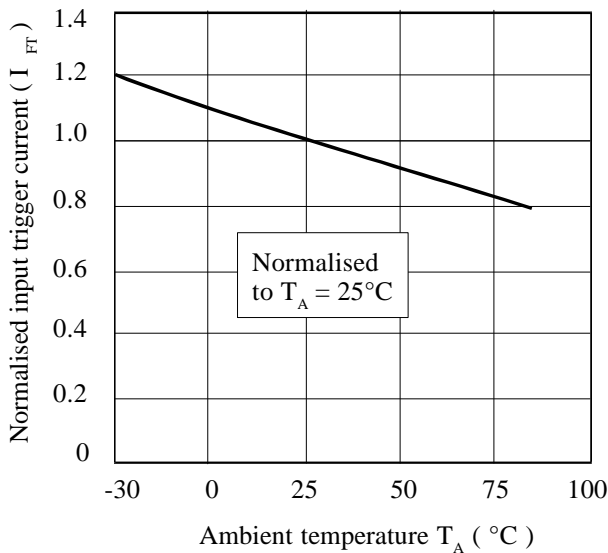
Forward Current vs. Ambient Temperature



On-state Voltage vs. Ambient Temperature



Normalised Input Trigger Current vs. Ambient Temperature



On-state Current vs. On-state Voltage

