



OPTICALLY COUPLED BILATERAL SWITCH LIGHT ACTIVATED ZERO VOLTAGE CROSSING TRIAC

APPROVALS

- UL recognised, File No. E91231

DESCRIPTION

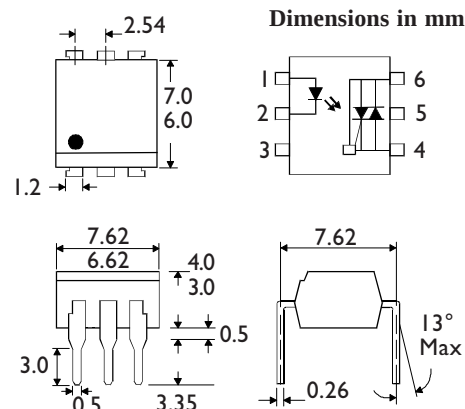
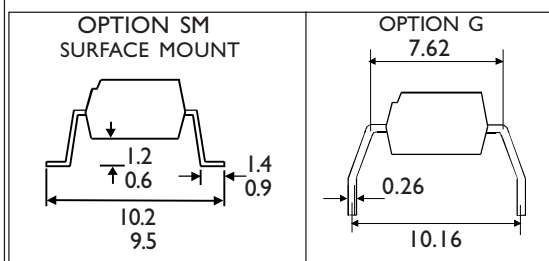
The IS42_ Series are optically coupled isolators consisting of a Gallium Arsenide infrared emitting diode coupled with a monolithic silicon detector performing the functions of a zero crossing bilateral triac mounted in a standard 6 pin dual-in-line package.

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



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 _____ 120mW
(derate linearly 1.41mW/°C above 25°C)

OUTPUT PHOTO TRIAC

Off-State Output Terminal Voltage _____ 400V
RMS Forward Current _____ 100mA
Forward Current (Peak) _____ 1.2A
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 ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

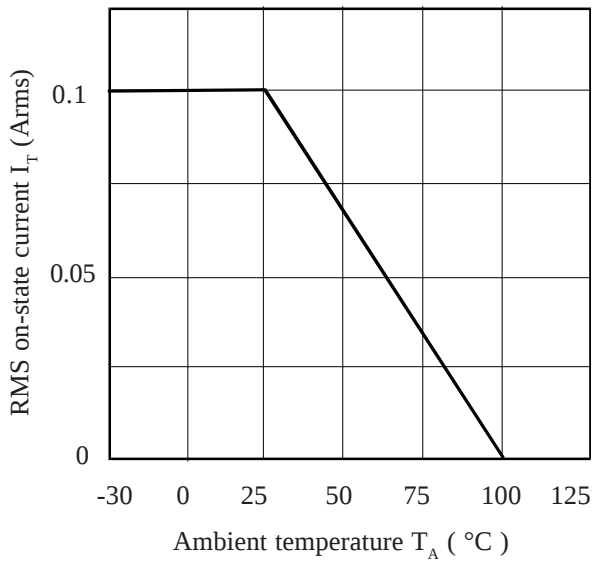
PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION	
Input	Forward Voltage (V _F) Reverse Current (I _R)		1.2	1.5 100	V μA	I _F V _R	= 30mA = 6V
Output	Peak Off-state Current (I _{DRM}) Peak Blocking Voltage (V _{DRM}) On-state Voltage (V _{TM})	400		300	nA V	V _{DRM} I _{DRM}	= 400V (note 1) = 300nA
	1.8		3.0	V	I _{TM}	= 100mA(peak)	
	Critical rate of rise of off-state Voltage (dv/dt)	100			V/μs		
Coupled	Input Current to Trigger (I _{FT})(note 2) IS420 IS421 IS422 IS423	5300 7500	100	30 15 10 7	mA mA mA mA	V _{TM}	= 3V (note 2)
	Holding Current , either direction (I _H) Input to Output Isolation Voltage V _{ISO}			μA V _{RMS} V _{PK}	See note 3 See note 3		
Zero Crossing Charact- -eristic	Inhibit Voltage (V _{IH})			35	V	I _F = Rated I _{FT} MT1-MT2 Voltage above which device will not trigger	
	Leakage in Inhibited State (I _S)			500	μA	I _F = Rated I _{FT} V _{DRM} = 400V off-state	

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

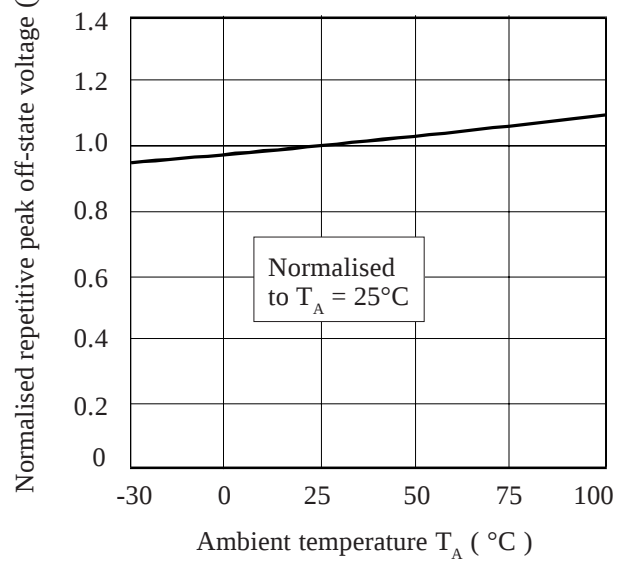
Note 2. Guaranteed to trigger at an I_F value less than or equal to max. I_{FT} , recommended I_F lies between Rated I_{FT} and absolute max. I_{FT} .

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

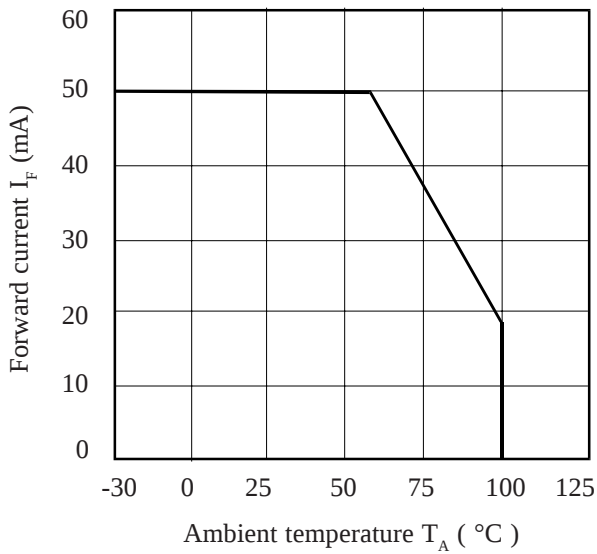
RMS On-state Current vs. Ambient Temperature



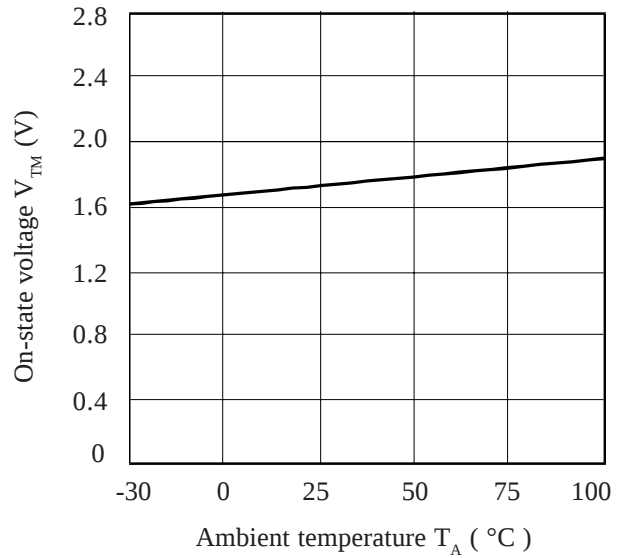
Normalised Repetitive Peak Off-state Voltage vs. Ambient Temperature



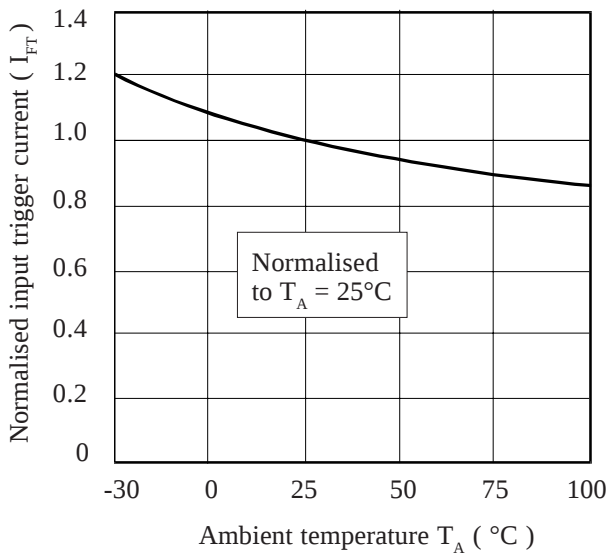
Forward Current vs. Ambient Temperature



On-state Voltage vs. Ambient Temperature



Normalised Input Trigger Current vs. Ambient Temperature



On-state Current vs. On-state Voltage

