



OPTICALLY COUPLED BILATERAL SWITCH NON-ZERO CROSSING TRIAC

DESCRIPTION

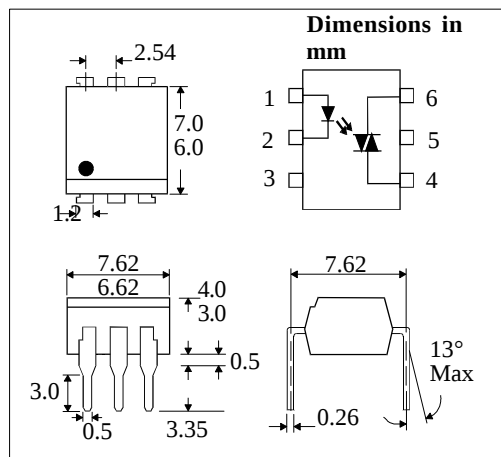
The IS3020, IS3021 and IS3022 are optically coupled isolators consisting of a Gallium Arsenide infrared emitting diode coupled with a light activated silicon bilateral switch performing the functions of a triac mounted in a standard 6 pin dual-in-line package.

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 ($5.3\text{kV}_{\text{RMS}}$, 7.5kV_{PK})
- 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 - $+150^{\circ}\text{C}$
 Operating Temperature _____ -40°C - $+100^{\circ}\text{C}$
 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 _____ 70mW
 (derate linearly $1.33\text{mW}/^{\circ}\text{C}$ above 25°C)

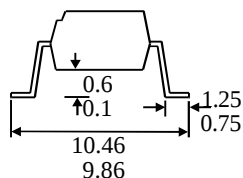
OUTPUT PHOTO TRIAC

Off-State Output Terminal Voltage _____ 400V
 Forward Current (Peak) _____ 1A
 Power Dissipation _____ 300mW
 (derate linearly $4.0\text{mW}/^{\circ}\text{C}$ above 25°C)

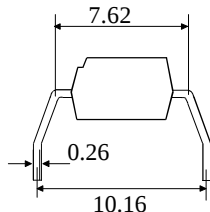
POWER DISSIPATION

Total Power Dissipation _____ 330mW
 (derate linearly $4.4\text{mW}/^{\circ}\text{C}$ above 25°C)

OPTION SM SURFACE MOUNT



OPTION G



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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)		1.2 100	1.5 100	V μA	$I_F = 10\text{mA}$ $V_R = 6\text{V}$
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)	400	1.5 10 0.1	100 3.0	nA V V $\text{V}/\mu\text{s}$ $\text{V}/\mu\text{s}$	$V_{\text{DRM}} = 400\text{V}$ (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) IS3020 IS3021 IS3022 Holding Current , either direction (I_H) Input to Output Isolation Voltage V_{ISO}			30 15 10 100	mA mA mA μA	$V_D = 3\text{V}$ (note 2) See note 3 See note 3
		5300 7500			V_{RMS} V_{PK}	

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

