IS3020
IS3021,IS3022

OPTICALLY COUPLED BILATERAL SWITCH NON-ZERO CROSSING TRIAC

DESCRIPTION

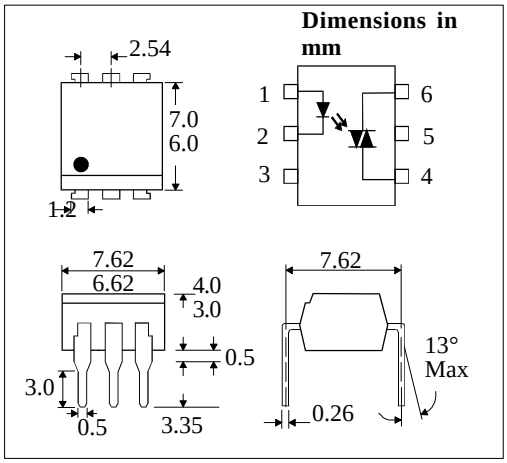
The IS3020, IS3021 and IS3022 are optically coupled isolators consisting of a Gallium Arsenide infrared emitting diode coupled with a light activated silicon bilateral switch performing the functions of a triac mounted in a standard 6 pin dual-in-line package.

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 ($5.3kV_{RMS}$,$7.5kV_{PK}$)
- 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°C
Operating Temperature	-40°C - +100°C
Lead Soldering Temperature (1.6mm from case for 10 seconds)	260°C
Input-to-output Isolation Voltage (Pk) (60 Hz , 1sec. duration)	7500 Vac

INPUT DIODE

Forward Current	50mA
Reverse Voltage	6V
Power Dissipation (derate linearly 1.33mW/°C above 25°C)	70mW

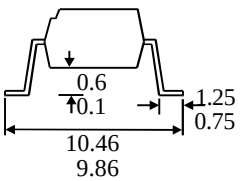
OUTPUT PHOTO TRIAC

Off-State Output Terminal Voltage	400V
Forward Current (Peak)	1A
Power Dissipation (derate linearly 4.0mW/°C above 25°C)	300mW

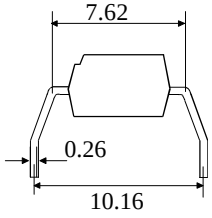
POWER DISSIPATION

Total Power Dissipation (derate linearly 4.4mW/°C above 25°C)	330mW

OPTION SM
SURFACE MOUNT



OPTION G



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ELECTRICAL CHARACTERISTICS (T_A = 25°C Unless otherwise noted)

PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage (V_F)		1.2	1.5	V	I_F = 10mA
	Reverse Current (I_R)			100	µA	V_R = 6V
Output	Peak Off-state Current (I_{DRM})			100	nA	V_{DRM} = 400V (note 1)
	Peak Blocking Voltage (V_{DRM})	400			V	I_{DRM} = 100nA
	On-state Voltage (V_{TM})		1.5	3.0	V	I_{TM} = 100mA (peak)
	Critical rate of rise of off-state Voltage (dv/dt) (note 1)		10		V/µs	
	Critical rate of rise of commutating Voltage (dv/dt) (note 1)	0.1	0.2		V/µs	I load = 15mA, V_{IN} = 30V (fig 1.)
Coupled	Input Current to Trigger (I_{FT})(note 2)					
	IS3020			30	mA	V_D = 3V (note 2)
	IS3021			15	mA	
	IS3022			10	mA	
	Holding Current , either direction (I_H)		100		µA	
	Input to Output Isolation Voltage V_{ISO}	5300			V_{RMS}	See note 3
		7500			V_{PK}	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.
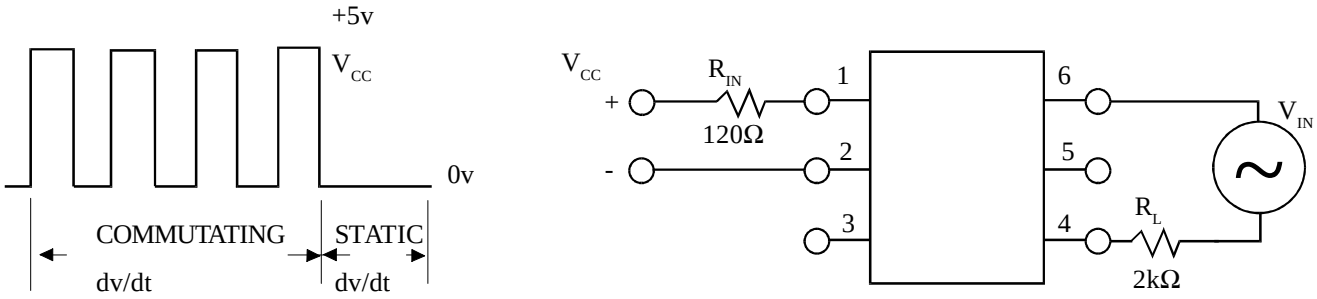
FIGURE 1