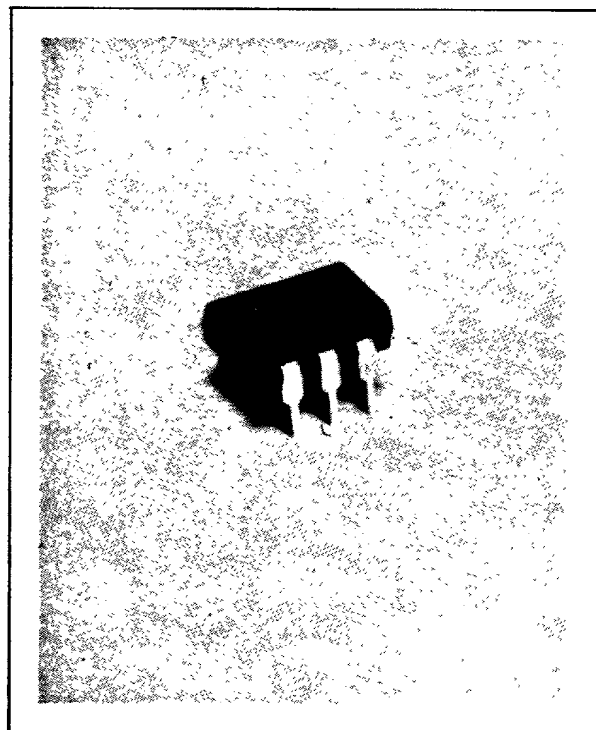




IS 3020, IS 3021

OPTICALLY COUPLED BILATERAL SWITCH

Light Activated TRIAC



FEATURES

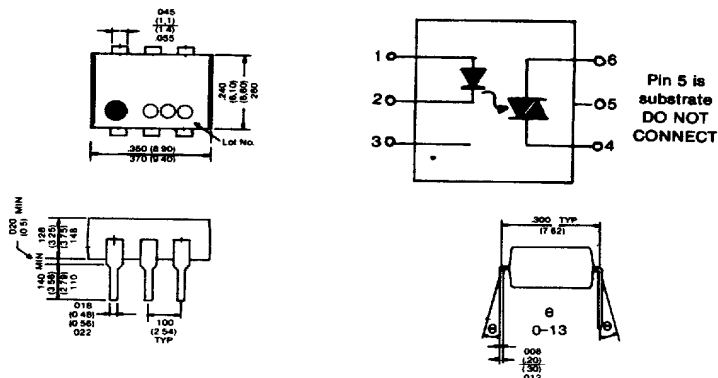
- Photo-Triac Output
- 2500 V Isolation
- 400 V Peak Blocking Voltage
- Low cost dual-in-line package

DESCRIPTION

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

All electrical parameters are 100% tested. Specifications are guaranteed to a cumulative 0.65% AQL.

PACKAGE DIMENSIONS IN INCHES (MM)



ABSOLUTE MAXIMUM RATINGS (25°C unless otherwise noted)

Storage Temperature	-55°C to + 150°C
Operating Temperature	-55°C to + 100°C
Lead Soldering Temperature (1/16 inch (1.6 mm) from case for 10 seconds)	260°C
Input-to-Output Isolation Voltage	±2500 V (Steady State)

Input Diode

Forward D.C. Current	60 mA
Reverse D.C. Voltage	3 V
Peak forward current (1 μ s p.w. 300 pps)	3 A
Power Dissipation (derate linearly 1.33 mW/°C above 25°C)	100 mW

Output Photo Triac

Off-State Output Terminal Voltage	400 V
RMS Forward Current	100 mA
Forward Current (Peak) (P.W. = 10 m.sec, D.C. = 10%)	1.2 A

Total Power Dissipation

(derate linearly 4.0 mW/°C above 25°C)	300 mW
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ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

Parameter		Min.	Typ	Max.	Units	Test Condition
Input	Forward Voltage (V _F)			1.5	Volt	I _F = 10 mA
	Reverse Current (I _R)			10	μA	V _R = 3.0 V
	Reverse Breakdown Voltage (V _R)	3.0			Volt	I _R = 10 μA
Output Photo-Triac	Peak Off-State Current (I _{DRM})			100	nA	V _{DRM} = 400 V
	Peak Blocking Voltage	400			Volt	I _{DRM} = 100 nA
	On-State Voltage (V _{TM})		2.3	3.0	Volt	I _{TM} = 100 mA
	Critical rate of rise of commutating Off-state voltage dv/dt (C)		0.15		V/μ sec	I _{load} = 15 mA, V _{in} = 30 V (RMS) (Fig. 1)
Coupled	Input Current to Trigger			30	mA	Main Terminal Voltage = 3 V
				15	mA	R _L = 150Ω
	Holding current, either direction		100		μA	Main Terminal Voltage = 3 V
	Input-to-Output Isolation Voltage	2500			V(RMS)	Initiating Current = 10 mA (Note 1)

FIGURE 1
COUPLED dv/dt - TEST CIRCUIT

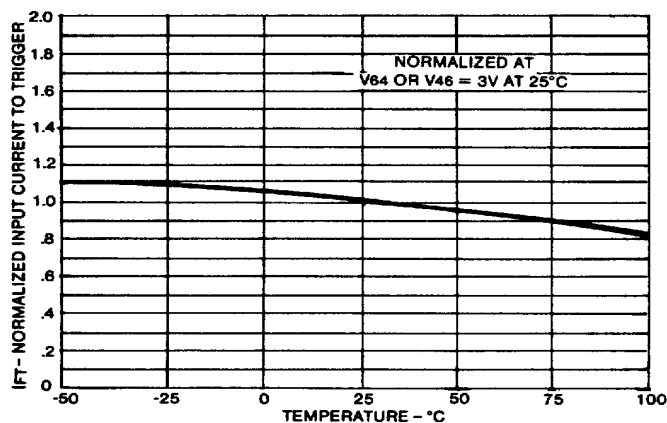
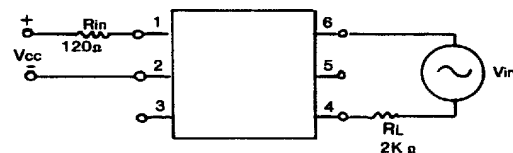
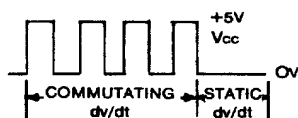


FIGURE 2 INPUT CURRENT TO TRIGGER
VS TEMPERATURE

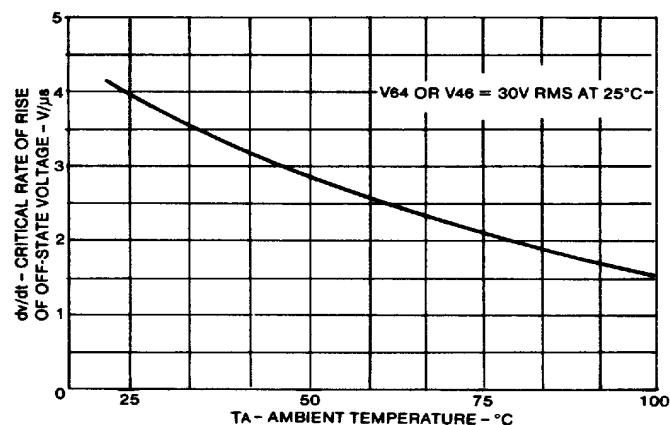


FIGURE 3 dv/dt VS TEMPERATURE

Note 1. Measured with input leads shorted together and output leads shorted together