

IS6051



LOW INPUT CURRENT INFRA-RED EMITTING DIODE & LIGHT ACTIVATED SCR

APPROVALS

- UL recognised, File No. E91231

DESCRIPTION

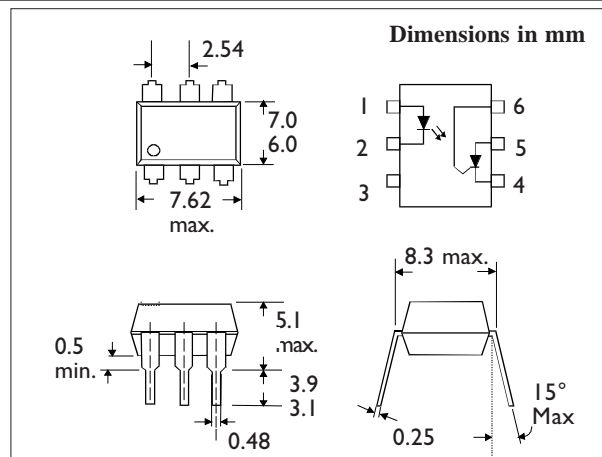
The IS6051 is an optically coupled isolator consisting of infrared light emitting diode and a light activated silicon controlled rectifier in a standard 6pin dual in line plastic package.

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 ($5.3kV_{RMS}, 7.5kV_{PK}$)
- High Surge Anode Current (5.0 A)
- High Blocking Voltage (400V*1)
- Low Turn on Current (5mA typical)
- All electrical parameters 100% tested
- Custom electrical selections available

APPLICATIONS

- 10A, T²L compatible, Solid State Relay
- 25W Logic Indicator Lamp Driver
- 400V Symmetrical transistor coupler



ABSOLUTE MAXIMUM RATINGS (25°C unless otherwise specified)

Storage Temperature _____ -55°C to + 150°C
 Operating Temperature _____ -55°C to + 100°C
 Lead Soldering Temperature
 (1/16 inch (1.6mm) from case for 10 secs) 260°C

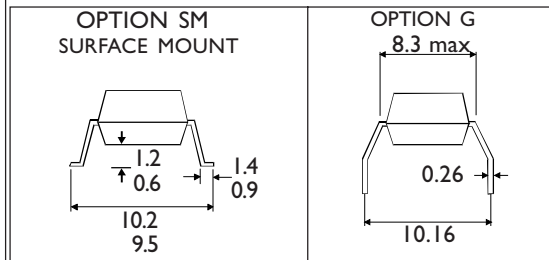
INPUT DIODE

Forward Current _____ 60mA
 Forward Current (Peak)
 (1µs pulse, 300pps) _____ 3A
 Reverse Voltage _____ 6V
 Power Dissipation _____ 100mW

DETECTOR

Peak Forward Voltage
 IS605 _____ 400V*1
 Peak Reverse Gate Voltage _____ 6V
 RMS On-state Current _____ 300mA
 Peak On-state Current
 (100µs, 1% duty cycle) _____ 10A
 Surge Current (10ms) _____ 5A
 Power Dissipation _____ 300mW

*1 IMPORTANT : A resistor must be connected between gate and cathode (pins 4 & 6) to prevent false firing ($R_{GK} < 56k\Omega$)



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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)		1.2	1.5	V	$I_F = 10\text{mA}$
	Reverse Voltage (V_R)	3			V	$I_R = 10\mu\text{A}$
Output (note 2)	Peak Off-state Voltage (V_{DM})	400			V	$R_{GK} = 10\text{k}\Omega, I_D = 2\mu\text{A}$
	Peak Reverse Voltage (V_{RM})	400			V	$R_{GK} = 10\text{k}\Omega, I_D = 2\mu\text{A}$
	On-state Voltage (V_{TM})		1.1	1.3	V	$I_{TM} = 300\text{mA}$
	Off-state Current (I_{DM})			2	μA	$R_{GK} = 10\text{k}\Omega, I_F = 0,$ $V_{DM} = 400\text{V}$
	Reverse Current (I_R)			2	μA	$R_{GK} = 10\text{k}\Omega, I_F = 0,$ $V_{DM} = 400\text{V}$
Coupled	Input Current to Trigger (I_{FT}) (note 2)			3	mA	$V_{AK} = 100\text{V}, R_{GK} = 27\text{k}\Omega$
	Turn on Time (t_{on})			50	μs	$R_{GK} = 27\text{k}\Omega, I_F = 30\text{mA},$ $V_{AK} = 20\text{V}, R_L = 200\Omega$
	Coupled dv/dt, Input to Output (dv/dt)	500			V/ μs	
	Input to Output Isolation Voltage V_{ISO}	5300			V_{RMS}	See note 1
	Input-output Isolation Resistance R_{ISO}	7500			V_{PK}	See note 1
	Input-output Capacitance C_f	10^{11}		2	Ω pF	$V_{IO} = 500\text{V}$ (note 1) $V = 0, f = 1\text{MHz}$

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

Note 2 Special Selections are available on request. Please consult the factory.