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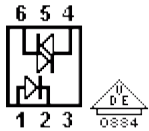
[Circuit](#)
[Features](#)
[Description](#)
[Absolute Maximum Ratings](#)
[Electrical Characteristics](#)

[Similar Optocouplers](#)
[Home Page](#)

IS3051, IS3052

OPTICALLY COUPLED ISOLATORS

Circuit



Features

- Rated Impulse Voltage (Transient Overvoltage)
- Insulation Test Voltage (Partial Discharge Test Voltage) $V_{PD}=1.6$ kV
- Creeping Current Resistance according to VDE 0303/IEC 112
- Rated Insulation Voltage (RMS includes DC) $V_{IOWM}=600$ V_{RMS} (848 Vpeak)
- Rated Recurring Peak Voltage (Repetitive) $V_{IORM}=600$ V_{RMS}
- Comparative Tracking Index CTI=275

Description

The IS3051 and IS3052 are constructed from a Gallium Arsenide Infrared Emitting Diode and Silicon Triac Bidirectional (double Thyristor) Detector, housed in a plastic package. Surface Mount Option Available. All electrical parameters are 100% tested by manufacturing. Specifications are guaranteed to a cumulative 0.65% AQL.

Absolute Maximum Ratings

Emitter

Reverse Voltage:	6V
Forward Current:	60mA
Forward Surge Current:	3A
Power Dissipation:	100mW
Derate Linearly:	1.33mW/°C above 25°C
Junction Temperature:	125°C

Detector

Off-State Output Terminal Voltage:	600V
On-State RMS Current:	100mA
Peak Surge Current:	1.2A
Collector Peak On-State Current:	2A
Power Dissipation:	300mW
Junction Temperature:	125°C

Coupled Device (Max)

Total Power Dissipation:	330mW
Storage Temperature Range:	-55°C to +125°C
Ambient Temperature Range:	-40°C to +100°C
Soldering Temperature:	260°C

Electro-optical Characteristics (Ta=25°C)

EMITTER	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
V _F	Forward Voltage	I _F =50mA		1.25	1.6	V
V _{BR}	Breakdown Voltage	I _R =10μA	5			V
C _J	Junction Capacitance	V _R =0, f=1MHz		50		pF
DETECTOR						
V _{DRM}	Off-State Output Terminal Voltage	I _{DRM} =100nA	600			V
V _{TM}	Peak On-State Voltage	I _{TM} =100mA, I _{FT} =30mA		1.5	3	V
dV/dt cr2	Critical Rate of Rise of Off-State-Voltage	I _F =0, V _S =240Vrms		50		V/μs
dV/dt crq2		I _F =30mA, V _S =60Vrms	0.13	0.25		V/μs
COUPLED	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
I _{FT}	Emitter Diode IS3051	V _T =6V, R _L =150ohm		10	15	mA
	Trigger Current IS3052			5	10	mA
I _H	Holding Current	I _F >=10mA, V _S >=3V		1		mA

