SOLID STATE OPTRONICS

TD3052



Random Switching
Triac Driver

RoHS compliant

DESCRIPTION

The TD3052 consists of an AlGaAs LED optically coupled to a Random Phase triac driver chip. The TD3052 provides high input-to-output isolation and is designed to drive high-powered triacs. Typical uses include interfacing logic level control signals to equipment powered from 110Vac and 220Vac lines.

FEATURES

- Random phase switching
- 600V blocking voltage
- High input-to-output isolation (5kV MIN)
- 10mA turn-on (trigger) current
- High reliability

APPLICATIONS

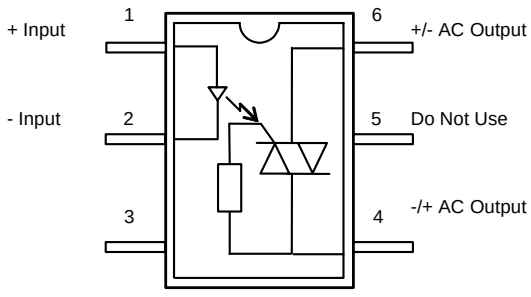
- Home Appliances
- Motor Control
- Solid State Relays
- Valve Control
- Solenoids
- Dimmers
- High Power Triacs

OPTIONS/SUFFIXES*

- -H 0.4" Lead Spacing (see mechanical dimensions)
- -S Surface Mount Leadform Option
- -TR Tape and Reel Option
- -V Signifies VDE approval

NOTE: Suffixes listed above are not included in marking on device for part number identification.

SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS*

PARAMETER	UNIT	MIN	TYP	MAX
Storage Temperature	°C	-55		125
Operating Temperature	°C	-40		85
Continuous Input Current	mA			40
Transient Input Current	mA			400
Peak Repetitive Surge Current (PW=100ms, 120pps)	A			1
Reverse Input Control Voltage	V	6		
Output Power Dissipation	mW			500

*The values indicated are absolute stress ratings. Functional operation of the device is not implied at these or any conditions in excess of those defined in electrical characteristics section of this document. Exposure to Absolute Ratings may cause permanent damage to the device and may adversely affect reliability.

APPROVALS

- UL / C-UL Approved File #E201932
- VDE Approved, Lic # 40011225

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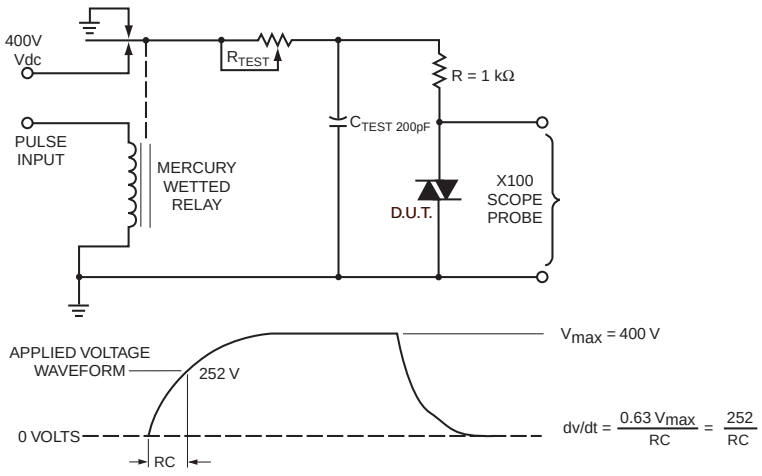
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ELECTRICAL CHARACTERISTICS - 25°C

PARAMETER	UNIT	MIN	TYP	MAX	TEST CONDITIONS
INPUT SPECIFICATIONS					
LED Forward Voltage	V		1.2	1.5	If = 10mA
LED Reverse Voltage	V	6	12		Ir = 10uA
Turn-On Current (See Note 1 below)	m A		5	10	Io = 100mA
Turn-Off Current	m A		0.5		
OUTPUT SPECIFICATIONS					
Blocking Voltage	V	600			Io = 1uA
Continuous Load Current	m A			100	Iin = 5mA
Holding Current	μ A		250		
Leakage Current	μ A			1	Vo =600V
On-State Voltage	V		2	3	Iin = 5mA
Critical Rate of Rise	V / μ s	1000	1500		
COUPLED SPECIFICATIONS					
Isolation Voltage	V	5000			T = 1 minute
Coupled Capacitance	p F		2		

Note 1: Resistive load. For inductive loads, higher drive current is recommended

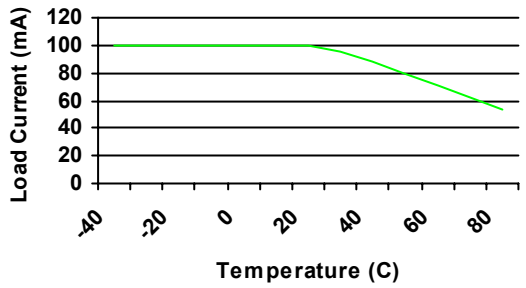
STATIC dV/dt TEST CIRCUIT



PERFORMANCE DATA

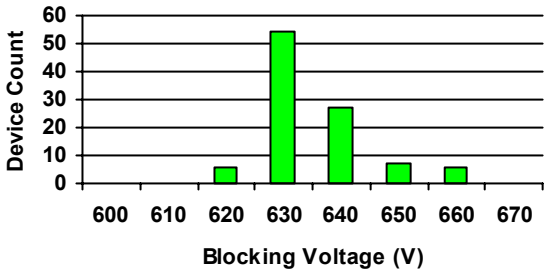
TD3052

Maximum Load Current vs. Temperature

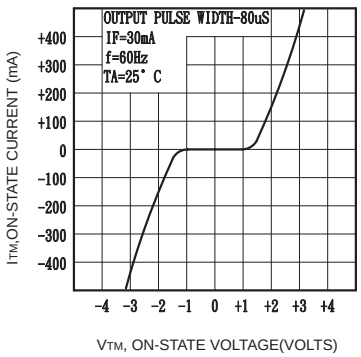


TD3052

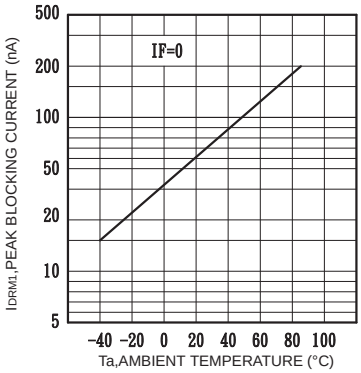
Typical Blocking Voltage Distribution
N = 100, Ambient Temperature = 25°C



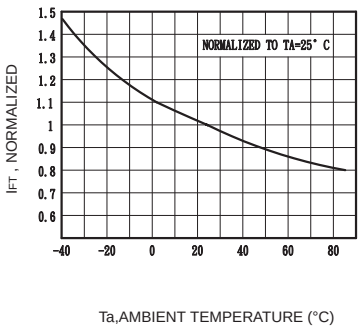
TD3052 On-State Characteristics



TD3052; Leakage with LED Off vs. Temperature

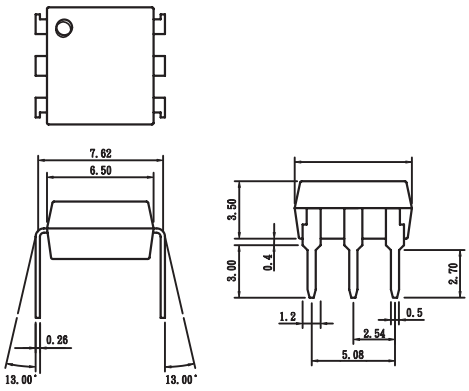


TD3052: Trigger Current vs. Temperature



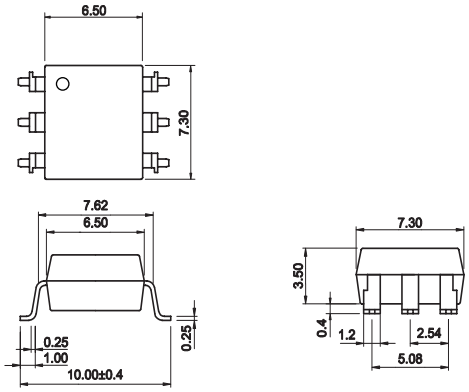
MECHANICAL DIMENSIONS

6 PIN DUAL-IN-LINE PACKAGE (Through-hole)

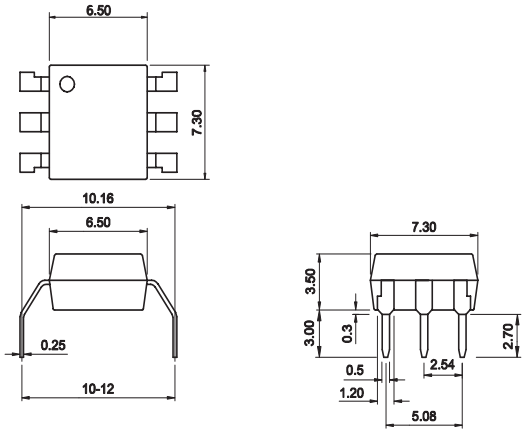


TOLERANCE :± 0.25mm

6 PIN SURFACE MOUNT DEVICE (SMD)



-H Suffix (0.4" / 10mm Lead Spacing)



Unit (mm)

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