



DESCRIPTION

The TD3052 consists of a single input LED optically coupled to a random-phase triac driver. 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 controlling resistive and inductive loads.

FEATURES

- 6-Pin Dip Random-Phase Triac Driver Output
- 600V blocking voltage
- High input-to-output isolation (5000 Vrms)
- High reliability

APPLICATIONS

- Vending Machines
- Motor control
- Solid state relays
- Valve control
- Solenoids
- Traffic Lights

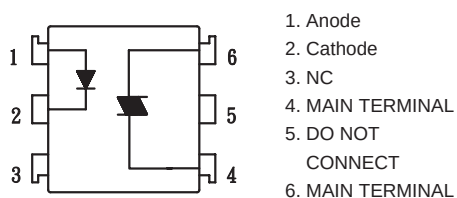
OPTIONS/SUFFIXES

- -S Surface Mount Option
- -TR Tape and Reel Option
- -H 0.4" Lead Spacing Option

MAXIMUM RATINGS

PARAMETER	UNIT	MIN	TYP	MAX
Storage Temperature	°C	-40		125
Operating Temperature	°C	-40		85
Soldering Temperature 10s	°C			260
Transient Input Current	A			1
Reverse Input Control Voltage	V			6
Total Power Dissipation	mW			330
Peak Repetitive Surge Current	A			1
Input Forward Current	mA			50

SCHEMATIC DIAGRAM



APPROVALS

- UL and C-UL Approved File #E201932
- VDE Approved, License #40011225

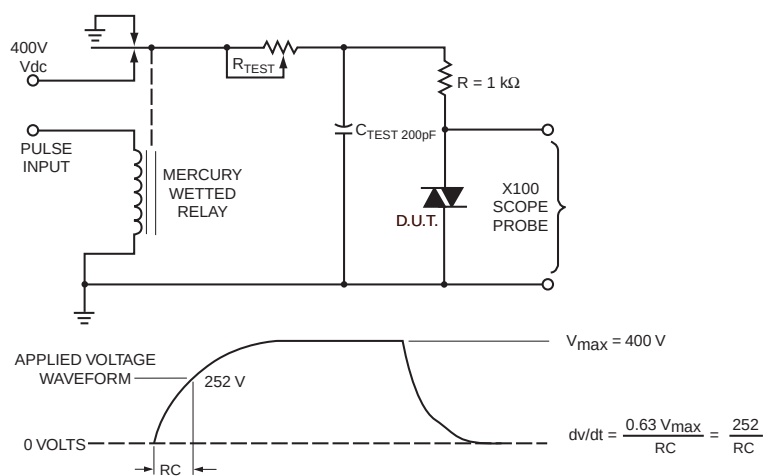


Random-Phase
Triac Driver

ELECTRICAL CHARACTERISTICS - 25°

PARAMETER	UNIT	MIN	TYP	MAX	TEST CONDITIONS
INPUT SPECIFICATIONS					
LED Forward Voltage	V		1.2	1.5	IF = 10mA
Peak Forward Voltage	V			3.5	IFM= 0.5A
Reverse Leakage Current	uA			10	VR=4V
OUTPUT SPECIFICATIONS					
Blocking Voltage	V	600			Io = 1uA
Peak Blocking Current	nA			100	VDRM=Rated
On-State Voltage	V		1.6	3	ITM= 100mA
COUPLED SPECIFICATIONS					
Critical rate of rise Off-State Voltage	V/us		1000		Refer to test circuit below
Isolation Resistance	Gohm	50			DC500V
Isolation Voltage T=1 Minute	Vrms	5000			
Turn-on time	μs			100	VD=6V, RL=100ohm, IF=20mA
Holding Current	μA		100		
Trigger Current	mA			10	Main Terminal Voltage =3V

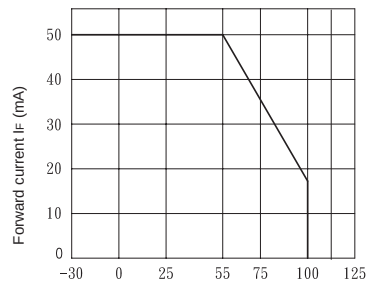
Static dv/dt test circuit





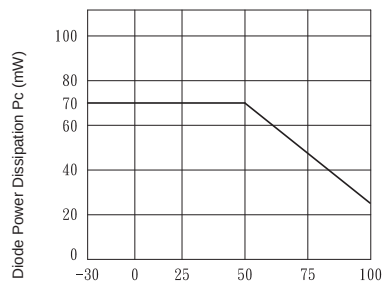
PERFORMANCE DATA

Fig.1 Forward Current vs. Ambient Temperature



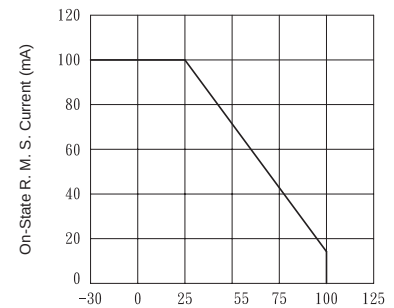
Ambient Temperature T_a (°C)

Fig.2 Diode Power Dissipation vs. Ambient Temperature



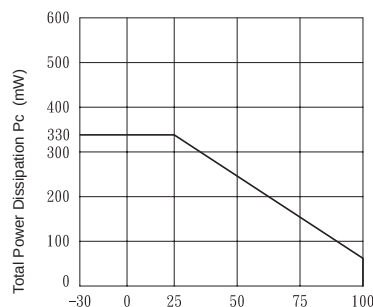
Ambient Temperature T_a (°C)

Fig.3 On-State R. M. S. Current vs. Ambient Temperature



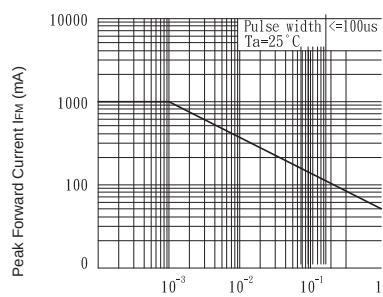
Ambient Temperature T_a (°C)

Fig.4 Total Power Dissipation vs. Ambient Temperature



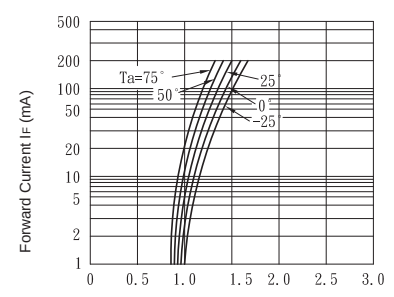
Ambient Temperature T_a (°C)

Fig.5 Peak Forward Current vs. Duty Ratio



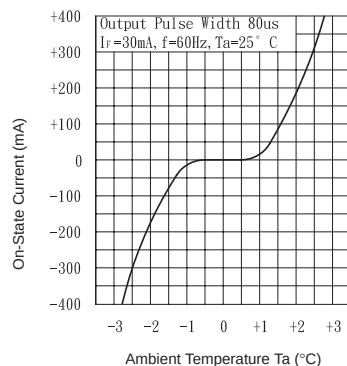
Duty Ratio

Fig.6 Forward Current vs. Forward Voltage



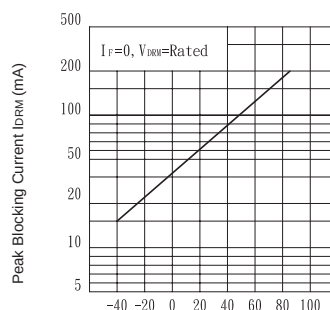
Forward Voltage V_F (V)

Fig.7 On-State Characteristics



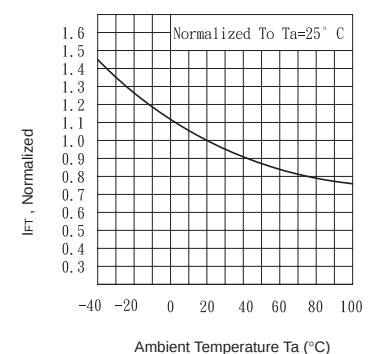
Ambient Temperature T_a (°C)

Fig.8 Leakage with LED off vs. Ambient Temperature



Ambient Temperature T_a (°C)

Fig.9 Trigger Current vs. Ambient Temperature



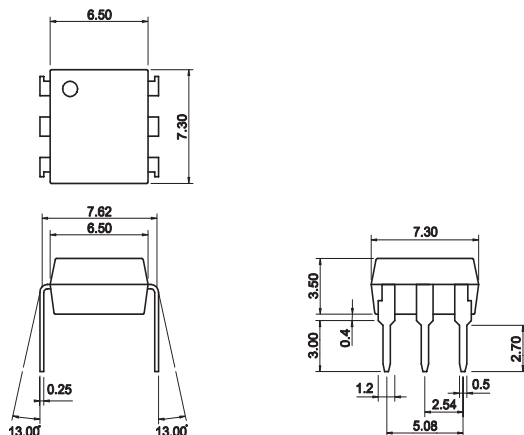
Ambient Temperature T_a (°C)



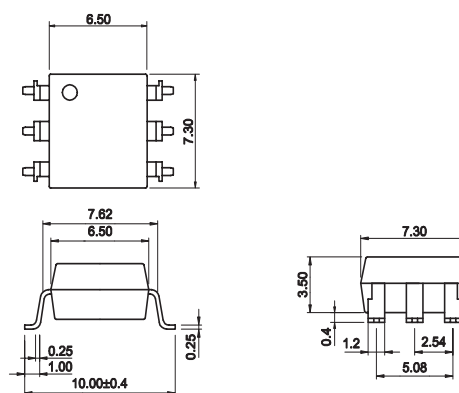
Random-Phase
Triac Driver

MECHANICAL DIMENSIONS

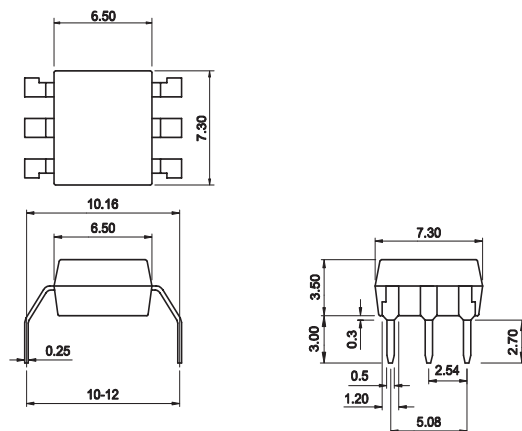
6 PIN DUAL IN-LINE PACKAGE (Through Hole)



6 PIN SURFACE MOUNT DEVICE (SMD)



0.4" Lead Spacing



TOLERANCE :+ 0.25mm

Unit in (mm)