ELECTRONICS, INC.
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NTE3047
Optoisolator
TRIAC Driver Output

Description:

The NTE3047 optoisolator consists of a gallium arsenide infrared emitting diode, optically coupled to a silicon bilateral switch and is designed for applications requiring isolated TRIAC triggering, low current isolated AC switching, high electrical isolation (to 7500V peak), high detector standoff voltage, small size, and low cost.

Applications:

- Solenoid/Valve Controls
- Lamp Ballasts
- Motor Controls
- Static AC Power Switch
- Solid State Relays
- Incandescent lamp Dimmers
- Interfacing Microprocessors to 115VAC Preipherals

Absolute Maximum Ratings: (T_A = +25°C unless otherwise specified)

Infrared Emitting Diode

Reverse Voltage, V_R 3V
Continuous Forward Current, I_F 60mA
Total Power Dissipation (T_A = +25°C, Negligible Power in Transistor), P_D 100mW
Derate Above 25°C . . . . . 1.33mW/°C

Output Driver

Off–State Output Terminal Voltage, V_{DRM} 250V
Peak Repetitive Surge Current (PW = 1ms, 120pps), I_{TSM} 1A
Total Power Dissipation (T_A = +25°C), P_D 300mW
Derate Above 25°C . . . . . 4mW/°C

Total Device

Isolation Surge Voltage (Peak AC Voltage, 60Hz, 5sec Duration, Note 1), V_{ISO} 7500VAC
Total Power Dissipation (T_A = +25°C), P_D 330mW
Derate Above 25°C . . . . . 4.4mW/°C
Junction Temperature Range, T_J . . . . . –40° to +100°C
Operating Ambient Temperature Range, T_A . . . . . –40° to +85°C
Storage Temperature Range, T_{stg} . . . . . –40° to +150°C
Lead Temperature (During Soldering, 10s), T_L . . . . . +260°C

Note 1. Isolation surge voltage, V_{ISO}, is an internal device dielectric breakdown rating. For this test, Pin1 and Pin2 are common, and Pin4, Pin5, and Pin6 are common.

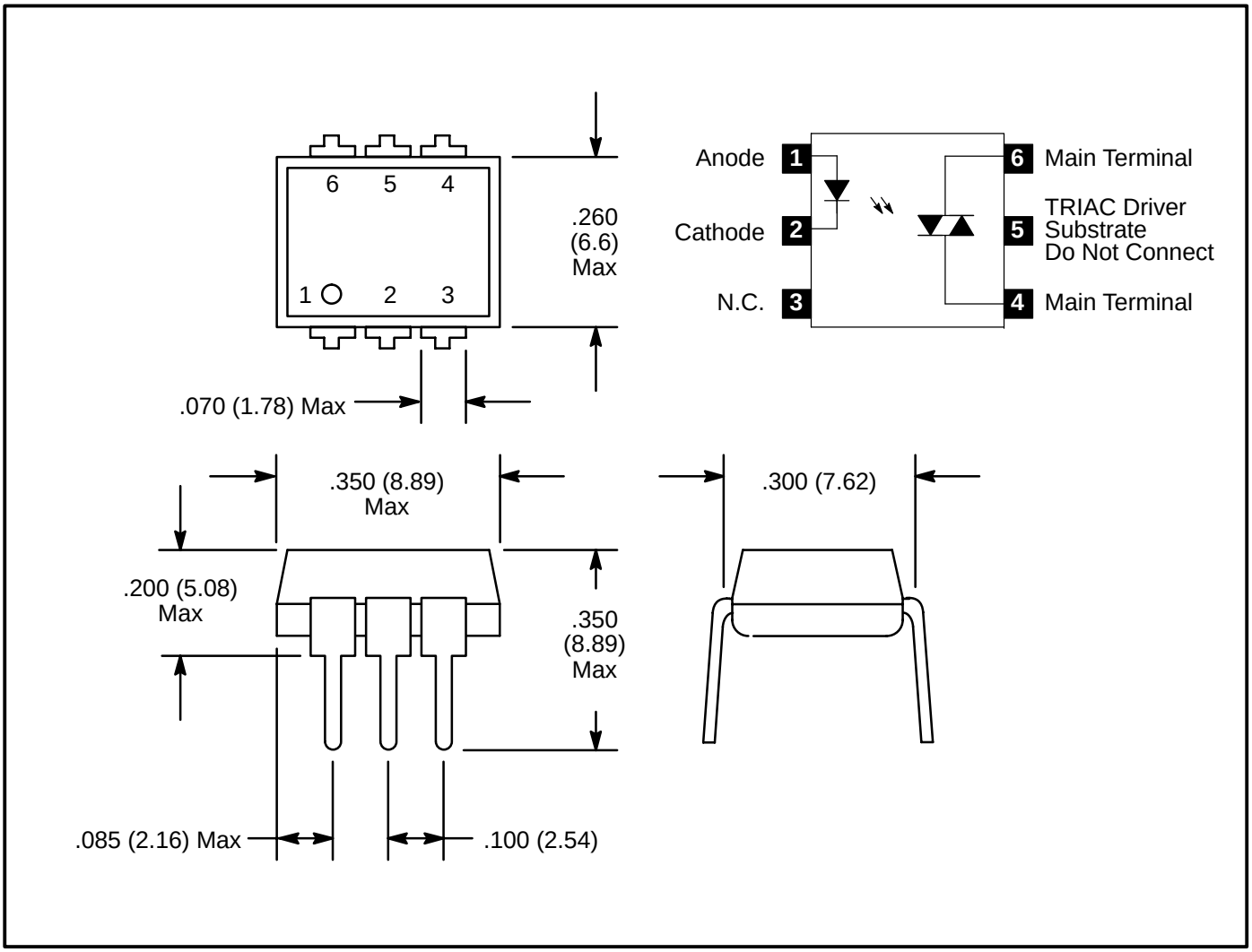
Electrical Characteristics: (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input LED						
Reverse Leakage Current	I_R	V_R = 3V	–	0.05	100	µA
Forward Voltage	V_F	I_F = 10mA	–	1.15	1.5	V
Output Detector (I_F = 0 unless otherwise specified)						
Peak Blocking Current, Either Direction	I_{DRM}	Rated V_{DRM}, Note 2	–	10	100	nA
Peak On–State Voltage, Either Direction	V_{TM}	I_{TM} = 100mA Peak	–	1.8	3.0	V
Critical Rate of Rise of Off–State Voltage	dv/dt	Note 3	–	10	–	V/µs
Coupled						
LED Trigger Current, Current Required to Latch Output	I_{FT}	Main Terminal Voltage = 3V, Note 4	–	8	15	mA
Holding Current, Either Direction	I_H		–	100	–	µA

Note 2. Test voltage must be applied within dv/dt rating.

Note 3. This is static dv/dt. Commutating dv/dt is a function of the load–driving thyristor(s) only.

Note 4. This device is guaranteed to trigger at an I_F value les than or equal to max. I_{FT}. Therefore, recommended operating I_F lies between max. I_{FT} (15mA) and absolute max. I_F (60mA).



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