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NTE3046
Optoisolator
SCR Photothyristor Output

Description:

The NTE3046 consists of a photo SCR coupled to a gallium arsenide infrared diode in a 6–Lead DIP type plastic package.

Features:

- Built–In Memory
- AC Switch (SPST)
- High Current Carrying Capability

Absolute Maximum Ratings:

LED (GaAs Diode)

Reverse Voltage 3V
Forward Current
  Continuous 60mA
  Peak (50μs pulse, 120 pps) 500mA
Power Dissipation (T_A = +25°C) 90mW
  Derate Linearly Above 25°C . . . . . 1.2mW/°C

Detector (Photo SCR)

DC Anode Current 100mA
Peak Pulse Current (100μs pulse, 120 pps) 1.0A
Average Gate Current 25mA
Reverse Gate Current 1.0mA
Anode Voltage (DC or Peak AC) 400V
Power Dissipation (T_A = +25°C) 200mW
  Derate Linearly Above 25°C . . . . . 2.67mW/°C

Total Device

Isolation Surge Voltage 3550V
Power Dissipation (T_A = +25°C) 250mW
  Derate Linearly Above 25°C . . . . . 3.3mW/°C
Operating Temperature Range . . . . . –30° to +100°C
Storage Temperature Range . . . . . –55° to +150°C
Lead Temperature (During Soldering for 7sec) . . . . . +260°C

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input Diode						
Forward Voltage	V_F	I_F = 20mA	–	1.25	1.5	V
Reverse Voltage	V_R	I_R = 10µA	3.0	–	–	V
Junction Capacitance	C_J	V_R = 0	–	50	–	pF
Detector						
Forward Leakage Current	I_{FX}	V_{FX} = Rated V_{FX}, R_{GK} = 27kΩ	–	0.02	2.0	µA
Reverse Leakage Current	I_{RX}	V_{RX} = Rated V_{RX}, R_{GK} = 27kΩ	–	0.02	2.0	µA
Forward Blocking Voltage	V_{FSM}, V_{DM}	R_{GK} = 10kΩ, T_A = +100°C	400	–	–	V
Reverse Blocking Voltage	V_{ROM}		400	–	–	V
ON Voltage	V_{TM}	I_T = 100mA	–	0.98	1.3	V
Holding Current	I_{HX}	R_{GK} = 27kΩ	0.01	0.16	0.50	mA
Gate Trigger Voltage	V_{GT}	V_{FX} = 100V	–	0.6	1.0	V
Gate Trigger Current	I_{GT}	V_{FX} = 100V, R_L = 10kΩ, R_{GK} = 27kΩ	–	23	100	µA
Coupled						
Turn–On Current (Threshold)	I_{FT}	V_{FX} = 100V, R_{GK} = 27kΩ	0.5	5.0	14.0	mA
Switching	$t_r + t_d$	V_{CC} = 20V, I_F = 30mA, R_{GK} = 27kΩ	–	7	–	µs
Steady State Voltage		t = 1min	3500	–	–	V
		t = 1min	2500	–	–	V_{rms}
Surge Isolation Rating	V_{ISO}	t = 1sec	4000	–	–	V
		t = 1sec	3000	–	–	V_{rms}
Isolation Resistance	R_{ISO}	V = 500V	10^{11}	10^{12}	–	Ω
Isolation Capacitance	C_{ISO}	f = 1MHz	–	1	2	pF

Pin Connection Diagram