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NTE56028
TRIAC, 40 Amp

Description:

The NTE56028 is a 40 Amp TRIAC is a TO220 type package designed primarily for full–wave AC control applications such as lighting systems, heater controls, motor controls, and power supplies.

Features:

- Blocking Voltage of 800V
- All Diffused and Glass–Passivated Junctions for Parameter Uniformity and Stability
- Gate Triggering Guaranteed in Four Modes

Absolute Maximum Ratings:

Peak Repetitive Off–State Voltage, V_{DRM}
(T_J = –40° to +125°C, 1/2 Sine Wave 50 to 60Hz, Gate Open, Note 1) 800V
On–State RMS Current (T_C = +75°C, Full Cycle Sine Wave 50 to60Hz, Note 2), I_T(RMS) 40A
Peak Non–Repetitive Surge Current (T_J = +125°C, One Full Cycle, 60Hz), I_{TSM} 350A
Circuit Fusing (t = 8.3ms), I^2t . . . . . 500A^2s
Peak Gate Current ($t \le 2\mu s$), I_{GM} . . . . . ±2A
Peak Gate Voltage ($t \le 2\mu s$), V_{GM} . . . . . ±10V
Peak Gate Power ($t \le 2\mu s$), P_{GM} 20W
Average Gate Power (T_C = +75°C, $t \le 8.3ms$), $P_{G(AV)}$ 0.5W
Operating Junction Temperature Range, T_J . . . . . –40° to +125°C
Storage Temperature Range, T_{stg} . . . . . –40° to +150°C
Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 1°C/W
Thermal Resistance, Junction–to–Ambient, R_{thJA} . . . . . 60°C/W
Mounting Torque . . . . . 8in. lb.

Note 1. Ratings apply for open gate conditions. Devices shall not be tested with a constant current source for blocking voltage such that the voltage applied exceeds the rated blocking voltage.

Note 2. This device is rated for use in applications subject to high surge conditions. Care must be taken to insure proper heat sinking when the device is to be used at high sustained currents.

Electrical Characteristics: (T_C = +25°C and either polarity of MT_1 to MT_2 voltage unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Peak Forward Blocking Current	I_{DRM}	V_{DRM} = 800V, T_J = +25°C	–	–	10	µA
		V_{DRM} = 800V, T_J = +125°C	–	–	2	mA
Peak Reverse Blocking Current	I_{RRM}	V_{RRM} = 800V, T_J = +25°C	–	–	10	µA
		V_{RRM} = 800V, T_J = +125°C	–	–	2	mA
Peak On–State Voltage	V_{TM}	I_{TM} = 56A (Peak), Note 3	–	1.40	1.85	V
Gate Trigger Current (Continuous DC) MT_2 (+), G (+); MT_2 (–), G (–); MT_2 (+), G (–)	I_{GT}	V_D = 12V, R_L = 100Ω,	–	25	50	mA
MT_2 (–), G (+)			–	40	75	mA
Gate Trigger Voltage (Continuous DC) MT_2 (+), G (+); MT_2 (–), G (–); MT_2 (+), G (–)	V_{GT}	V_D = 800V, R_L = 100Ω,	–	1.1	2.0	V
MT_2 (–), G (+)			–	1.3	2.5	V
Gate Non–Trigger Voltage MT_2 (+), G (+); MT_2 (–), G (–); MT_2 (+), G (–)	V_{GD}	V_D = 800V, T_J = +125°C, R_L = 10k,	0.2	–	–	V
MT_2 (–), G (+)			0.2	–	–	V
Holding Current	I_H	V_D = 12V, Gate Open	–	30	75	mA
Gate Controlled Turn–On Time	t_{gt}	V_D = 800V, I_{TM} = 56A (Peak), I_{GT} = 200mA	–	1.5	–	µs
Critical Rate of Rise of Off–State Voltage	dv/dt	V_D = 800V, Exponential Waveform, T_C = +125°C	–	50	–	V/µs
Critical Rate 0f Rise of Commutation Voltage	dv/dt(c)	V_D = 800V, I_{TM} = 56A (Peak), Commutating di/dt = 13.4A/ms, Gate Unenergized, T_C = +75°C	–	5	–	V/µs

Note 3. Pulse Width ≤ 2ms, Duty Cycle ≤ 2%.