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NTE56066 & NTE56067 TRIAC, 16A, High Commutation

Description:

The NTE56066 and NTE56067 are glass passivated, high commutation TRIACs in a TO220 type package designed for use in circuits where static and dynamic dV/dt and high dI/dt can occur. These devices will commute the full rated RMS current at the maximum rated junction temperature, without the aid of a snubber.

Absolute Maximum Ratings:

Repetitive Peak Off-State Voltage (Note 1), V_{DRM}

NTE56066	600V
NTE56067	800V

RMS On-State Current (Full Sine Wave, $T_{MB} \leq 99^\circ\text{C}$), $I_T(\text{RMS})$ 16A

Non-Repetitive Peak On-State Current, I_{TSM}

(Full Sine Wave, $T_J = +25^\circ\text{C}$ prior to Surge)

$t = 20\text{ms}$	140A
$t = 16.7\text{ms}$	150A

I^2t for Fusing ($t = 10\text{ms}$), I^2t 98A²sec

Repetitive Rate-of-Rise of On-State Current after Triggering, dI_T/dt

($I_{TM} = 20\text{A}$, $I_G = 0.2\text{A}$, $dI_G/dt = 0.2\text{A}/\mu\text{s}$) 100A/ μs

Peak Gate Current, I_{GM} 2A

Peak Gate Voltage, V_{GM} 5V

Peak Gate Power, P_{GM} 5W

Average Gate Power (Over Any 20ms Period), $P_{G(AV)}$ 500mW

Operating Junction Temperature, T_J $+125^\circ\text{C}$

Storage Temperature Range, T_{stg} -40° to $+150^\circ\text{C}$

Thermal Resistance, Junction-to-Mounting Base, R_{thJMB}

Full Cycle	1.2K/W
Half Cycle	1.7K/W

Typical Thermal Resistance, Junction-to-Ambient, R_{thJA} 60K/W

Note 1. Although not recommended, off-state voltages up to 800V may be applied without damage, but the TRIAC may switch to the on-state. The rate-of-rise of current should not exceed 15A/ μs .



Electrical Characteristics: ($T_J = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Gate Trigger Current MT ₂ (+), G (+)	I _{GT}	V _D = 12V, I _T = 0.1A, Note 2	2	18	50	mA
MT ₂ (+), G (–)			2	21	50	mA
MT ₂ (–), G (–)			2	34	50	mA
Latching Current MT ₂ (+), G (+)	I _L	V _D = 12V, I _T = 0.1A	–	31	60	mA
MT ₂ (+), G (–)			–	34	90	mA
MT ₂ (–), G (–)			–	30	60	mA
Holding Current	I _H	V _D = 12V, I _T = 0.1A	–	31	60	mA
On–State Voltage	V _T	I _T = 20A	–	1.2	1.5	V
Gate Trigger Voltage	V _{GT}	V _D = 12V, I _T = 0.1A	–	0.7	1.5	V
		V _D = 400V, I _T = 0.1A, T _J = +125°C	0.25	0.4	–	V
Off–State Leakage Current	I _D	V _D = V _{DRMmax} , T _J = +125°C	–	0.1	0.5	mA
Dynamic Characteristics						
Critical Rate–of–Rise of Off–State Voltage	dV _D /dt	V _{DM} = 67% V _{DRMmax} , T _J = +125°C, Exponential Waveform, Gate Open	1000	4000	–	V/μs
Critical Rate–of–Change of Commutating Current	dI _{com} /dt	V _{DM} = 400V, T _J = +125°C, I _T RMS = 16A, without Snubber, Gate Open	–	28	–	A/ms
Gate Controlled Turn–On Time	t _{gt}	I _{TM} = 12A, V _D = V _{DRMmax} , I _G = 0.1A, dI _G /dt = 5A/μs	–	2	–	μs

Note 2. Device does not trigger in the MT₂ (–), G (+) quadrant.

