



ELECTRONICS, INC.
44 FARRAND STREET
BLOOMFIELD, NJ 07003
(973) 748-5089
<http://www.nteinc.com>

NTE5437 & NTE5438 Silicon Controlled Rectifier (SCR) 8 Amp Sensitive Gate, TO220

Description:

The NTE5437 and NTE5438 are silicon controlled rectifiers (SCR) in a TO220 type package designed to provide a high dv/dt rate with strong resistance to electromagnetic interfaces. They are especially recommended for use on residual current circuit breakers, straight hair, igniters, etc.

Absolute Maximum Ratings:

Non-Repetitive Peak Off-State Voltage, V_{DSM}	
NTE5437	400V
NTE5438	600V
Non-Repetitive Peak Reverse Voltage, V_{RSM}	
NTE5437	400V
NTE5438	600V
RMS On-State Current ($T_C = +90^\circ\text{C}$), $I_{T(RMS)}$	8A
Non-Repetitive Surge Peak On-State Current ($t_p = 10\text{ms}$), I_{TSM}	100A
Fusing Current ($t_p = 10\text{ms}$), I^2t	50A ² s
Critical rate of Rise of ON-State Current, di/dt	50A/ μs
Peak Gate Current ($t_p = 20\mu\text{s}$, $T_J = +110^\circ\text{C}$), I_{GM}	1.2A
Peak Gate Dissipation ($t_p = 20\mu\text{s}$, $T_J = +110^\circ\text{C}$), P_{GM}	3W
Average Gate Dissipation ($T_J = +110^\circ\text{C}$), $P_{G(AV)}$	0.2W
Operating Junction Temperature Range, T_J	-40° to +110°C
Storage Temperature Range, T_{stg}	-40° to +150°C
Thermal Resistance, Junction-to-Case, R_{thJC}	2.3°C/W

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Gate Trigger Current	I_{GT}	$V_D = 12\text{V}$, $R_L = 33\Omega$	–	60	200	μA
Gate Trigger Voltage	V_{GT}	$V_D = 12\text{V}$, $R_L = 33\Omega$	–	–	0.8	V
Gate Non-Trigger Voltage	V_{GD}	$V_D = V_{DRM}$, $T_J = +110^\circ\text{C}$	0.2	–	–	V
Latching Current	I_L	$I_G = 1.2 I_{GT}$	–	–	6	mA
Holding Current	I_H	$I_T = 0.05\text{A}$	–	–	5	mA
Critical Rate of Voltage Rise	dV/dt	$V_D = 526\text{V}$, $R_{GK} = 100\Omega$, $T_J = +110^\circ\text{C}$	50	100	–	V/ μs

Rev. 11-19



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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Maximum On-State Voltage	V_{TM}	$I_{TM} = 24\text{A}$, $t_p = 380\mu\text{s}$	–	–	1.6	V
Off-State Leakage Current	I_{DRM} , I_{RRM}	$V_D = V_{DRM}$, $V_R = V_{RRM}$	–	–	10	μA
		$T_J = +110^{\circ}\text{C}$	–	–	2	mA

