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**NTE5552-I, NTE5554-I,  
 NTE5556-I, NTE5558-I  
 Silicon Controlled Rectifier (SCR)  
 25 Amp, TO220AB  
 Isolated Tab**

**Description:**

The NTE5552-I thru NTE5558-I are 25 Amp SCR's designed primarily for half-wave AC control applications, such as motor controls, overvoltage crowbar protection, capacitive discharge ignition, voltage regulation, and welding equipment.

**Features:**

- Suitable for General Purpose AC Switching
- $I_{GT}$  40mA Max.
- Isolated Tab

**Absolute Maximum Ratings:** ( $T_A = +25^\circ C$  unless otherwise specified)

Repetitive Peak Off-State Voltage, $V_{DRM}$	
NTE5552-I .....	200V
NTE5554-I .....	400V
NTE5556-I .....	600V
NTE5558-I .....	800V
Peak Reverse Blocking Voltage, $V_{RRM}$	
NTE5552-I .....	200V
NTE5554-I .....	400V
NTE5556-I .....	600V
NTE5558-I .....	800V
Maximum Peak Reverse Gate Voltage, $V_{RGM}$ .....	
5V	
RMS On-State Current (Full Sine Wave, $T_C = +75^\circ C$ ), $I_{T(RMS)}$ .....	
25A	
Average On-State Current ( $T_C = +75^\circ C$ ), $I_{T(AV)}$ .....	
16A	
Non-Repetitive Surge Peak On-State Current (Full Cycle, $T_J$ Initial = $+25^\circ C$ ), $I_{TSM}$	
F = 50Hz .....	320A
F = 60Hz .....	350A
$I^2t$ Value for Fusing ( $t_p = 10ms$ ), $I^2t$ .....	
510A <sup>2</sup> s	
Critical Rate of Rise of On-State Current ( $I_G = 2 \times I_{GT}$ , $t_r < 100ns$ , $T_J = +125^\circ C$ ), $di/dt$	
NTE5552-I, NTE5554-I, NTE5556-I .....	100A/ $\mu$ s
NTE5558-I .....	50A/ $\mu$ s
Forward Peak Gate Current ( $t_p = 20\mu s$ , $T_J = +125^\circ C$ ), $I_{GM}$	
NTE5552-I, NTE5554-I, NTE5556-I .....	2A
NTE5558-I .....	4A
Average Gate Power Dissipation ( $T_J = +125^\circ C$ ), $P_{G(AV)}$ .....	
1W	
Isolation Voltage, $V_{ISO}$ .....	
2500V $_{RMS}$	

**Absolute Maximum Ratings (Cont'd):** ( $T_A = +25^\circ\text{C}$  unless otherwise specified)

Operating Junction Temperature Range,  $T_J$  .....  $-40^\circ$  to  $+125^\circ\text{C}$   
 Storage Temperature Range,  $T_{stg}$  .....  $-40^\circ$  to  $+150^\circ\text{C}$   
 Thermal Resistance, Junction-to-Case,  $R_{thJC}$  .....  $1.9^\circ\text{C/W}$   
 Thermal Resistance, Junction-to-Ambient,  $R_{thJA}$  .....  $60^\circ\text{C/W}$

**Electrical Characteristics:** ( $T_C = +25^\circ\text{C}$  unless otherwise noted.)

Parameter	Symbol	Min	Typ	Max	Unit
Gate Trigger Current ( $V_D = 12\text{V}$ , $R_L = 30\Omega$ )	$I_{GT}$	-	-	40	mA
Gate Trigger Voltage ( $V_D = 12\text{V}$ , $R_L = 30\Omega$ )	$V_{GT}$	-	-	1.3	V
Gate Non-Trigger Voltage ( $V_D = \text{Rated } V_{DRM}$ , $R_L = 3.3\text{k}\Omega$ , $T_J = +125^\circ\text{C}$ )	$V_{GD}$	0.2	-	-	V
Holding Current ( $I_T = 500\text{mA}$ , Gate Open)	$I_H$	-	-	50	mA
Latching Current ( $I_G = 1.2 I_{GT}$ )	$I_L$	-	-	90	mA
Critical Rate of Rise of Off-State Voltage ( $V_D = 67\% V_{DRM}$ , Gate Open, $T_J = +125^\circ\text{C}$ )	dv/dt	1000	-	-	V/ $\mu\text{s}$
Forward "ON" Voltage NTE5558-I ( $I_{TM} = 32\text{A}$ , $t_p = 380\mu\text{s}$ , $T_J = +25^\circ\text{C}$ ) All Other Devices ( $I_{TM} = 50\text{A}$ , $t_p = 380\mu\text{s}$ , $T_J = +25^\circ\text{C}$ )	$V_{TM}$	-	-	1.6	V
Peak Forward or Reverse Blocking Current, (Rated $V_{DRM}$ or $V_{RRM}$ ) $T_J = +25^\circ\text{C}$ $T_J = +125^\circ\text{C}$	$I_{DRM}$ , $I_{RRM}$	-	-	5 4	$\mu\text{A}$ mA

