



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

NTE5534A Silicon Controlled Rectifier (SCR) 600V, 40A

Description:

The NTE5534A is a general purpose SCR in a TO3 isolated square pack designed for use in power supplies up to 400Hz on resistive or inductive loads.

Features:

- Glass Passivated Chip
- High Stability and Reliability
- High Surge Capability
- High On-State Current
- Easy Mounting (Fast-On Connections)
- Isolated Package: Insulating Voltage = 2500V_{RMS}

Absolute Maximum Ratings: (Limiting Values)

Peak Repetitive Forward Blocking Voltage ($T_J = +110^{\circ}\text{C}$), V_{DRM}	600V
Peak Repetitive Reverse Blocking Voltage ($T_J = +110^{\circ}\text{C}$), V_{RRM}	600V
RMS On-State Current ($T_C = +65^{\circ}\text{C}$, Single Phase Circuit, 180° Conduction Angle), $I_{T(RMS)}$.	40A
Mean On-State Current ($T_C = +65^{\circ}\text{C}$, Single Phase Circuit, 180° Conduction Angle), $I_{T(AV)}$..	25A
Non-Repetitive Surge Peak On-State Current (T_J initial = $+25^{\circ}\text{C}$, Half Sine Wave), I_{TSM}	
t = 8.3ms	525A
t = 10ms	500A
I^2t Value (t = 10ms), I^2t	1250A ² s
Critical Rate of Rise On-State Current ($I_G = 800\text{mA}$, $di_G/dt = 1\text{A}/\mu\text{s}$), di/dt	100A/ μs
Peak Gate Power (t = 10 μs), P_{GM}	50W
Forward Average Gate Power, $P_{G(AV)}$	1W
Forward Peak Gate Current (t = 10 μs), I_{GFM}	2A
Peak Gate Voltage Forward (t = 10 μs), V_{GFM}	15V
Peak Gate Voltage Reverse, V_{GRM}	5V
Operating Junction Temperature Range, T_J	-40° to $+110^{\circ}\text{C}$
Storage Temperature Range, T_{stg}	-40° to $+125^{\circ}\text{C}$
Thermal Resistance, Junction-to-Case, R_{thJC}	0.93 $^{\circ}\text{C}/\text{W}$
Thermal Resistance, Case-to-Heatsink, R_{thCH}	0.10 $^{\circ}\text{C}/\text{W}$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit	
Gate Trigger Current	I_{GT}	$V_D = 12\text{V}$, $R_L = 33\Omega$, $t_p \geq 20\mu\text{s}$	-	-	80	mA	
Gate Trigger Voltage	V_{GT}	$V_D = 12\text{V}$, $R_L = 33\Omega$, $t_p \geq 20\mu\text{s}$	-	-	1.5	V	
Gate Non-Trigger Voltage	V_{GD}	$T_J = +110^\circ\text{C}$, $V_D = 600\text{V}$, $R_L = 3.3\text{k}\Omega$	0.2	-	-	V	
Holding Current	I_{HOLD}	$I_T = 500\text{mA}$, Gate Open	-	20	150	mA	
Peak On-State Voltage	V_{TM}	$I_{TM} = 80\text{A}$, $t_p = 10\text{ms}$	-	-	2	V	
Peak Forward Blocking Current	I_{DRM}	$V_{DRM} = 600\text{V}$	-	-	0.02	mA	
		$T_J = +110^\circ\text{C}$	-	-	6.0	mA	
Peak Reverse Blocking Current	I_{RRM}	$V_{DRM} = 600\text{V}$	-	-	0.02	mA	
		$T_J = +110^\circ\text{C}$	-	-	6.0	mA	
Turn-On Time	t_{gt}	$I_T = 80\text{A}$, $V_D = 600\text{V}$, $I_G = 200\text{mA}$, $di_G/dt = 0.2\text{A}/\mu\text{s}$	-	2	-	μs	
Turn-Off Time	t_q	$T_J = +110^\circ\text{C}$, $I_T = 10\text{A}$, $V_R = 75\text{V}$, $V_D = 0.67V_{DRM}$, $di_R/dt = 30\text{A}/\mu\text{s}$, $dv/dt = 20\text{V}/\mu\text{s}$, Gate Open	-	100	-	μs	
Critical Rise of Off-State Voltage	dv/dt	$T_J = 110^\circ\text{C}$, Gate Open, Linear slope up to $0.67V_{DRM}$ specified	$V_{DRM} \leq 800\text{V}$	500	-	-	$\text{V}/\mu\text{s}$
			$V_{DRM} \geq 1000\text{V}$	250	-	-	$\text{V}/\mu\text{s}$

