

NTE5539 & NTE5540

Silicon Controlled Rectifier (SCR)

55 Amps

Features:

- High Voltage Capability
- High Surge Capability
- Glass Passivated Chip

Electrical Characteristics: ($T_A = +25^\circ\text{C}$, 60Hz, Resistive load unless otherwise specified)

Repetitive Peak Off-State Forward & Reverse Voltage, V_{DRM} , V_{RRM}

NTE5539	400V
NTE5540	800V

Maximum RMS On-State Current, $I_{\text{T(RMS)}}$ 55A

Average On-State Current, $I_{\text{T(AV)}}$ 35A

DC Gate Trigger Current ($V_D = 12\text{V}$, $R_L = 30\Omega$), I_{GT}

Minimum	5mA
Maximum	40mA

Maximum Peak Off-State Forward & Reverse Current (At rated V_{DRM} , V_{RRM}), I_{DRM} , I_{RRM}

($T_C = +25^\circ\text{C}$)

NTE5539	10 μA
NTE5540	20 μA

($T_C = +100^\circ\text{C}$)

NTE5539	1.0mA
NTE5540	1.5mA

($T_C = +125^\circ\text{C}$)

NTE5539	2.0mA
NTE5540	3.0mA

Peak On-State Voltage ($I_{\text{T(RMS)}} = 55\text{A}$, $T_C = +25^\circ\text{C}$), V_{TM} 1.8V

Maximum DC Gate Trigger Voltage ($T_C = +25^\circ\text{C}$, $V_D = 12\text{V}$, $R_L = 30\Omega$), V_{GT} 1.5V

Minimum DC Gate Trigger Voltage ($T_C = +125^\circ\text{C}$, $V_D = 12\text{V}$, $R_L = 30\Omega$), V_{GT} 0.2V

Maximum DC Holding Current (Gate Open, Initial On-State Current = 400mA(DC)), I_{H} 60mA

Peak Gate Current (Pulse Width $\leq 10\mu\text{s}$), I_{GM} 4A

Peak Gate Power Dissipation (Pulse Width $\leq 10\mu\text{s}$), P_{GM} 40W

Average Gate Power Dissipation, $P_{\text{G(AV)}}$ 800mW

Peak One Cycle Surge Forward Current, I_{TSM}

50Hz	550A
60Hz	650A

Minimum Critical Rate-of-Applied Forward Voltage, dv/dt

($T_C = +100^\circ\text{C}$)

NTE5539	650V/ μs
NTE5540	500V/ μs

($T_C = +125^\circ\text{C}$)

NTE5539	550V/ μs
NTE5540	475V/ μs

Electrical Characteristics (Cont'd): ($T_A = +25^\circ\text{C}$, 60Hz, Resistive load unless otherwise specified)

RMS Surge (Non-Repetitive) On-State Current for Fusing (8.3ms), I^2t 1750A²sec

Maximum Rate-of-Change of On-State Current ($I_{GT} = 150\text{mA}$, $t_r = 0.1\mu\text{s}$), di/dt 175A/ μs

Gate Controlled Turn-On Time (Gate Pulse = 150mA, Min Width = 15 μs , $t_r \leq 0.1\mu\text{s}$), t_{gt} ... 2.5 μs

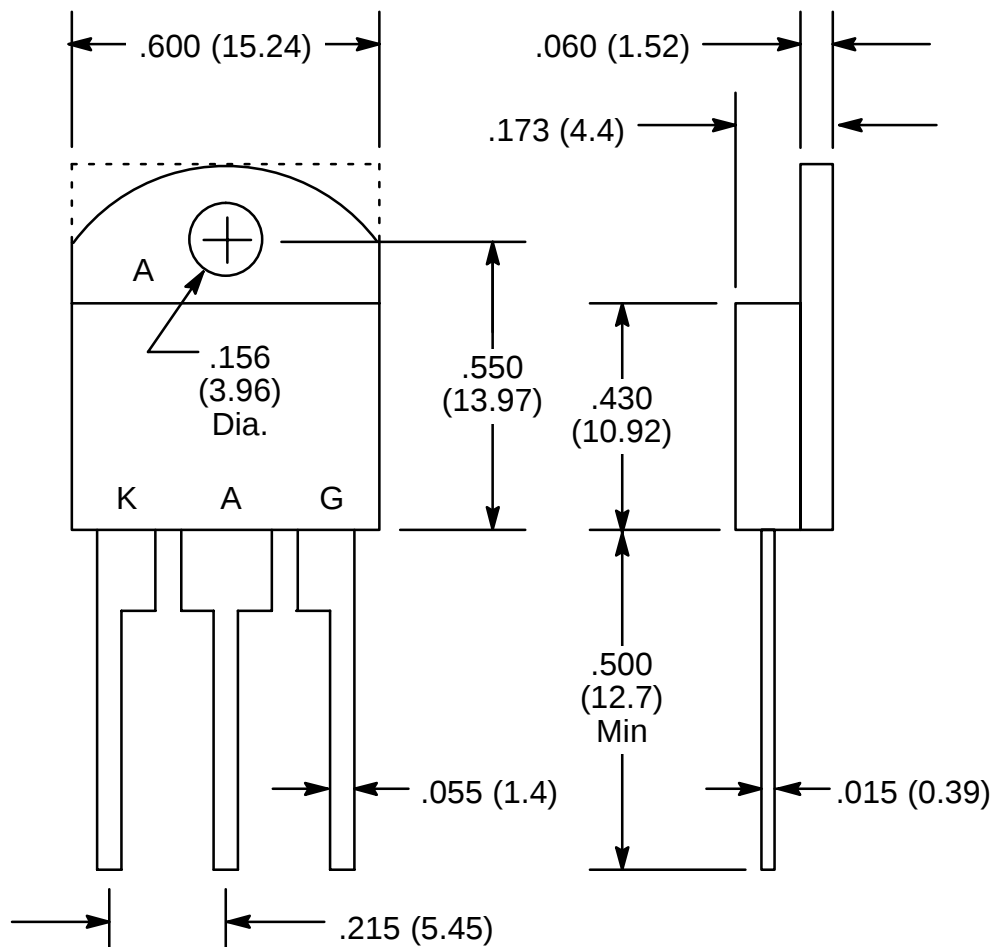
Circuit Commutated Turn-Off Time (Note 1), t_q 35 μs

Operating Temperature Range, T_J -40° to $+125^\circ\text{C}$

Storage Temperature Range, T_{stg} -40° to $+125^\circ\text{C}$

Lead Temperature (During Soldering, 1/16" from case, 10sec max), T_L $+230^\circ\text{C}$

Note 1. $i_T = 2\text{A}$, Pulse Duration = 50 μs , $dv/dt = 20\text{V}/\mu\text{s}$, $di/dt = -30\text{A}/\mu\text{s}$, $I_{GT} = 200\text{mA}$ at Turn-On



NOTE: Dotted line indicates that case may have square corners.