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NTE276 Silicon Controlled Rectifier (SCR) Gate Controlled Switch

Features:

- Gate Turn-Off Thyristor
- High Speed Power Switching
- TV Horizontal Output
- Inverter and Converter Application
- Supplied in a Japanese TO66 Type Package

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

| | |
|---|-------------------------------------|
| Non-Repetitive Peak Off-State Voltage ($T_J = -40^\circ$ to $+120^\circ\text{C}$, $V_{GK} = 0$), V_{DSM} | 1400V |
| Repetitive Peak Off-State Voltage ($T_J = -40^\circ$ to $+120^\circ\text{C}$, $V_{GK} = 0$), V_{DRM} | 1250V |
| DC On-State Anode Current ($T_C = +60^\circ\text{C}$), I_T | 5A |
| Surge On-State Current ($T_C = +60^\circ\text{C}$), I_{TSM} | |
| $t = 100\mu\text{s}$ | 80A |
| $t = 1\text{ms}$ | 33A |
| Peak Forward Gate Current ($T_C = +60^\circ\text{C}$, $t = 1\text{ms}$), I_{GFM} | 4A |
| Average Forward Gate Power Dissipation ($T_C = +60^\circ\text{C}$), $P_{GF(AV)}$ | 1W |
| Peak Reverse Gate Power Dissipation ($T_C = +60^\circ\text{C}$, $t = 5\mu\text{s}$), P_{GRM} | 30W |
| Average Reverse Gate Power Dissipation ($T_C = +60^\circ\text{C}$), $P_{GR(AV)}$ | 2W |
| Total Power Dissipation ($T_C = +25^\circ\text{C}$), P_T | 47.5W |
| Operating Junction Temperature Range, T_J | -40° to $+120^\circ\text{C}$ |
| Storage Temperature Range, T_{stg} | -50° to $+120^\circ\text{C}$ |
| Thermal Resistance, Junction-to-Case, R_{thJC} | |
| Typical | 1.3°C/W |
| Maximum | 2.0°C/W |

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

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|----------------------------|----------|--|-----|-----|-----|------|
| Controllable Anode Current | I_{TC} | $V_D = 100\text{V}$, $V_{GR} = 9\text{V}$, $R_g = 0$ | 25 | - | - | A |
| On-State Voltage | V_T | $I_T = 5\text{A}$, $I_{GF} = 300\text{mA}$ | - | - | 5.3 | V |
| Gate Trigger Voltage | V_{GT} | $V_D = 10\text{V}$ | - | - | 1.5 | V |
| Gate Trigger Current | I_{GT} | $V_D = 10\text{V}$ | - | - | 120 | mA |

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

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--|----------------------------|---|------|------|-----|------------------------|
| Latching Current | I_L | $V_D = 10\text{V}$ | - | 0.6 | - | A |
| Holding Current | I_H | | - | 300 | - | mA |
| Turn-Off Current Gain | G_{off} | $V_D = 100\text{V}, I_T = 25\text{A}, t_{\text{off}} = 10\mu\text{s}$ | 14.7 | 20.0 | - | |
| Off-State Anode Current | I_{DRM} | $V_D = 1000\text{V}, V_{\text{GK}} = 0$ | - | - | 0.5 | mA |
| Turn-On Time | t_d | $V_D = 100\text{V}, I_T = 5\text{A}, I_{\text{GF}} = 250\text{mA}$ | - | 0.2 | - | μs |
| | t_r | | - | 1.3 | - | μs |
| Turn-Off Time | t_{stg} | $V_D = 100\text{V}, I_T = 5\text{A}, I_{\text{GR}} = 9\text{V}$ | - | 0.22 | - | μs |
| | t_f | | - | 0.09 | - | μs |
| Critical rate of Rise of Off-State Voltage | dv/dt | $V_{\text{DM}} = 1000\text{V}, V_{\text{GK}} = 0$ | 1000 | - | - | $\text{V}/\mu\text{s}$ |
| Gate Breakdown Voltage | $V_{(\text{BR})\text{GR}}$ | $I_{\text{GR}} = 10\text{mA}$ | 9 | 12 | - | V |

