



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

## 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, $T_J$ .....	$-40^\circ$ to $+120^\circ\text{C}$
Storage Temperature Range, $T_{stg}$ .....	$-50^\circ$ 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	$G_{\text{off}}$	$V_D = 100\text{V}, I_T = 25\text{A}, t_{\text{off}} = 10\mu\text{s}$	14.7	20.0	-	
Off-State Anode Current	$I_{\text{DRM}}$	$V_D = 1000\text{V}, V_{\text{GK}} = 0$	-	-	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	-	$\mu\text{s}$
	$t_r$		-	1.3	-	$\mu\text{s}$
Turn-Off Time	$t_{\text{stg}}$	$V_D = 100\text{V}, I_T = 5\text{A}, I_{\text{GR}} = 9\text{V}$	-	0.22	-	$\mu\text{s}$
	$t_f$		-	0.09	-	$\mu\text{s}$
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

