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## NTE231 Silicon Controlled Rectifier (SCR) TV Deflection Circuit

**Features:**

- CTV 110° – CRT Horizontal Deflection
- Comutater Switch

**Absolute Maximum Ratings:**

Repetitive Peak Off–State Voltage ( $T_J = +100^{\circ}\text{C}$ ), $V_{DRM}$ .....	700V
Non–Repetitive Peak Forward Voltage ( $T_J = +100^{\circ}\text{C}$ ), $V_{DSM}$ .....	750V
Repetitive Peak Reverse Voltage, $V_{RRM}$ .....	5V
RMS On–State Current (Note 1), $I_{T(RMS)}$ .....	5A
Average On–State Current (Note 1), $I_{T(AV)}$ .....	3.2A
Surge Current (Note 1), $I_{TSM}$	
50Hz .....	60A
60Hz .....	70A
Critical Rate–of–Rise of On–State Current, $di/dt$ .....	200A/ $\mu\text{s}$
Peak Gate Power Dissipation (Note 2), $P_{GM}$ .....	25W
Average Gate Power Dissipation, $P_{G(AV)}$ .....	500mW
Minimum Peak Reverse Gate Voltage, $V_{GM}$ .....	–30V
Operating Junction Temperature Range, $T_J$ .....	–40° to +100°C
Storage Temperature Range, $T_{stg}$ .....	–40° to +150°C
Thermal Resistance, Junction–to–Case, $R_{thJC}$ .....	4°C/W

Note 1. Single Phase, Half Sine Wave at 50Hz,  $T_C = +60^{\circ}\text{C}$

Note 2. 10 $\mu\text{s}$  duration

**Electrical Characteristics:**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit	
Peak Off–State Current	$I_{DRM}$	$V_{DRM} = 700\text{V}, T_J = +100^{\circ}\text{C}$	–	–	1.5	mA	
Peak On–State Voltage	$V_{TM}$	$I_{TM} = 20\text{A}, T_C = +25^{\circ}\text{C}$	–	–	3.0	V	
DC Gate Trigger Current	$I_{GT}$	$V_D = 6\text{V}, R_L = 10\Omega$	$T_C = -40^{\circ}\text{C}$	–	–	75	mA
			$T_C = +25^{\circ}\text{C}$	–	–	45	mA

**Electrical Characteristics (Cont'd):**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
DC Gate Non-Trigger Voltage	$V_{GD}$	$V_D = 700V, T_C = +100^\circ C$	0.2	-	-	V
DC Gate Non-Trigger Current	$I_{GD}$	$V_D = 700V, T_C = +100^\circ C$	1.0	-	-	mA
Holding Current	$I_H$	$V_D = 6V, R_L = 10\Omega$	-	-	100	mA
Turn-Off Time	$t_q$	$I_{TM} = 8A, di/dt = 20A/\mu s,$ $V_D = 610V, dv/dt = 700V/\mu s,$ $f = 15.7kHz, T_C = +70^\circ C, V_G = 25V$	-	-	4.5	$\mu s$
Critical Exponential Rate-of-Rise of Forward Blocking State Voltage	$dv/dt$	$V_{DRM} = 500V, V_G = -2.5V,$ $T_C = +70^\circ C, R_G = 100\Omega$	700	-	-	$V/\mu s$

