

## NTE230 Silicon Controlled Rectifier (SCR) TV Deflection Circuit

### **Features:**

- CTV 110° – CRT Horizontal Deflection
- Tracer Switch

### **Absolute Maximum Ratings:**

Repetitive Peak Off-State Voltage ( $T_J = +100^\circ\text{C}$ ), $V_{\text{DRM}}$	750V
Non-Repetitive Peak Forward Voltage ( $T_J = +100^\circ\text{C}$ ), $V_{\text{DSM}}$	800V
Repetitive Peak Reverse Voltage, $V_{\text{RRM}}$	5V
RMS On-State Current (Note 1), $I_{\text{T(RMS)}}$	5A
Average On-State Current (Note 1), $I_{\text{T(AV)}}$	3.2A
Surge Current (Note 1), $I_{\text{TSM}}$	
50Hz	60A
60Hz	70A
Critical Rate-of-Rise of On-State Current, $di/dt$	200A/ $\mu\text{s}$
Peak Gate Power Dissipation (Note 2), $P_{\text{GM}}$	25W
Average Gate Power Dissipation, $P_{\text{G(AV)}}$	500mW
Minimum Peak Reverse Gate Voltage, $V_{\text{GM}}$	-30V
Operating Junction Temperature Range, $T_J$	-40° to +100°C
Storage Temperature Range, $T_{\text{stg}}$	-40° to +150°C
Thermal Resistance, Junction-to-Case, $R_{\text{thJC}}$	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	$I_{\text{DRM}}$	$V_{\text{DRM}} = 750\text{V}$ , $T_J = +100^\circ\text{C}$	–	–	1.5	mA
Peak On-State Voltage	$V_{\text{TM}}$	$I_{\text{TM}} = 20\text{A}$ , $T_C = +25^\circ\text{C}$	–	–	3.0	V
DC Gate Trigger Current	$I_{\text{GT}}$	$T_C = -40^\circ\text{C}$ $V_D = 6\text{V}$ , $R_L = 10\Omega$	–	–	50	mA
		$T_C = +25^\circ\text{C}$	–	–	30	mA

## Electrical Characteristics (Cont'd):

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
DC Gate Non-Trigger Voltage	$V_{GD}$	$V_D = 750V$ , $T_C = +100^\circ C$	0.2	–	–	V
DC Gate Non-Trigger Current	$I_{GD}$	$V_D = 750V$ , $T_C = +100^\circ C$	1.0	–	–	mA
Holding Current	$I_H$	$V_D = 6V$ , $R_L = 10\Omega$	–	–	100	mA
Turn-Off Time	$t_q$	$I_{TM} = 8A$ , $di/dt = 20A/\mu s$ , $V_D = 610V$ , $dv/dt = 700V/\mu s$ , $f = 15.7kHz$ , $T_C = +70^\circ C$ , $V_G = 25V$	–	–	2.5	$\mu s$
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	–	–	$V/\mu s$

