

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_{DRM}	750V
Non-Repetitive Peak Forward Voltage ($T_J = +100^\circ\text{C}$), V_{DSM}	800V
Repetitive Peak Reverse Voltage, V_{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_{TSM}	
50Hz	60A
60Hz	70A
Critical Rate-of-Rise of On-State Current, di/dt	200A/ μs
Peak Gate Power Dissipation (Note 2), P_{GM}	25W
Average Gate Power Dissipation, $P_{\text{G(AV)}}$	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 μs duration

Electrical Characteristics:

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Peak Off-State Current	I_{DRM}	$V_{\text{DRM}} = 750\text{V}$, $T_J = +100^\circ\text{C}$	–	–	1.5	mA
Peak On-State Voltage	V_{TM}	$I_{\text{TM}} = 20\text{A}$, $T_C = +25^\circ\text{C}$	–	–	3.0	V
DC Gate Trigger Current	I_{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	μs
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/ μs

