



ELECTRONICS, INC.
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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/ μs
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 μs 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	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

