



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



NTE5728 Powerblock Thyristor Module

Features:

- Electrically Isolated Base Plate
- Pressure Contact Technology with Increased Power Cycling Capability
- Space and Weight Savings

Applications:

- AC/DC Motor Drives
- Various Rectifiers
- DC Supply for PWM Inverter

Ratings and Characteristics: ($T_J = +125^\circ\text{C}$ unless otherwise specified)

Maximum Mean On-State Current, $I_{T(AV)}$ ($T_C = +70^\circ\text{C}$, 180° , Half Sine Wave, 50Hz, Single Side Cooled)	250A
Maximum RMS On-State Current, $I_{T(RMS)}$	393A
Maximum Repetitive Peak Off-State Voltage ($V_{DSM} = 1800\text{V}$, $t_p = 10\text{ms}$), V_{DRM}	1600V
Maximum Repetitive Peak Reverse Voltage ($V_{RSM} = 1800\text{V}$, $t_p = 10\text{ms}$), V_{RRM}	1600V
Maximum Repetitive Peak Current, I_{DRM} , I_{RRM}	30mA
Maximum Surge On-State Current (10ms Half Sine Wave, $V_R = 960\text{V}$), I_{TSM}	8.5KA
Maximum I^2t for Fusing Coordination (10ms Half Sine Wave, $V_R = 960\text{V}$), I^2t	$360\text{A}^2\text{s} * 10^3$
Maximum Threshold Voltage, V_{TO}	0.9V
On-State Slope Resistance, r_T	0.93m Ω
Maximum Peak On-State Voltage ($I_{TM} = 750\text{A}$), $T_J = +25^\circ\text{C}$), V_{TM}	1.73V
Critical Rate of Rise of Off-State Voltage ($V_{DM} = 1072\text{V}$), dv/dt	800V/ μs
Critical Rate of Rise of On-State Current, di/dt ($I_{TM} = 500\text{A}$, Gate Source 1.5A, $t_r \leq 0.5\mu\text{s}$ Repetitive)	100A/ μs
RMS Isolation Voltage (50Hz, $t = 1\text{s}$ Min, $I_{ISO} = 1\text{mA}$ Max), V_{ISO}	3600V
Storage Temperature Range, T_{stg}	-40° to $+125^\circ\text{C}$
Thermal Resistance, Junction-to-Case (Single Side Cooled), R_{thJC}	0.12 $^\circ\text{C}/\text{W}$
Thermal Resistance, Case-to-Sink (Single Side Cooled), R_{thCS}	0.04 $^\circ\text{C}/\text{W}$
Typical Thermal Connection Torque, F_m	4.0N • m
Typical Mounting Torque, F_m	6.0N • m

Electrical Specifications:

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Gate Trigger Current	I_{GT}	$V_A = 12V, I_A = 1A, T_J = +25^\circ C$	30	-	180	mA
Gate Trigger Voltage	V_{GT}		1	-	3	V
Holding Current	I_H		20	-	150	mA
Non-Trigger Gate Voltage	V_{GD}	$V_{DM} = 1072V, T_J = +125^\circ C$	0.2	-	-	V

Circuit Diagram

