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## NTE5722 Powerblock 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, $I_{T(AV)}$ ( $T_C = +85^\circ\text{C}$ , $180^\circ$ , Half Sine Wave, 50Hz, Single Side Cooled) .....	90A
Maximum RMS On-State Current, $I_{T(RMS)}$ .....	141A
Maximum Repetitive Peak Off-State Voltage ( $V_{DSM} = 1400\text{V}$ , $t_p = 10\text{ms}$ ), $V_{DRM}$ .....	1200V
Maximum Repetitive Peak Reverse Voltage ( $V_{RSM} = 1400\text{V}$ , $t_p = 10\text{ms}$ ), $V_{RRM}$ .....	1200V
Maximum Repetitive Peak Current, $I_{DRM}$ , $I_{RRM}$ .....	10mA
Maximum Surge On-State Current (10ms Half Sine Wave, $V_R = 720\text{V}$ ), $I_{TSM}$ .....	2KA
Maximum $I^2t$ for Fusing Coordination (10ms Half Sine Wave, $V_R = 720\text{V}$ ), $I^2t$ .....	$20.4\text{A}^2\text{s} * 10^3$
Maximum Threshold Voltage, $V_{TO}$ .....	0.8V
On-State Slope Resistance, $r_T$ .....	$3.01\text{m}\Omega$
Maximum Peak On-State Voltage ( $I_{TM} = 270\text{A}$ ), $T_J = +25^\circ\text{C}$ ), $V_{TM}$ .....	1.7V
Critical Rate of Rise of Off-State Voltage ( $V_{DM} = 804\text{V}$ ), $dv/dt$ .....	$800\text{V}/\mu\text{s}$
Critical Rate of Rise of On-State Current, $di/dt$ ( $I_{TM} = 180\text{A}$ , Gate Source 1.5A, $t_r \leq 0.5\mu\text{s}$ Repetitive) .....	$100\text{A}/\mu\text{s}$
RMS Isolation Voltage (50Hz, $t = 1\text{s}$ Min, $I_{ISO} = 1\text{mA}$ Max), $V_{ISO}$ .....	2500V
Storage Temperature Range, $T_{stg}$ .....	$-40^\circ$ to $+125^\circ\text{C}$
Thermal Resistance, Junction-to-Case (Single Side Cooled), $R_{thJC}$ .....	$0.28^\circ\text{C}/\text{W}$
Thermal Resistance, Case-to-Sink (Single Side Cooled), $R_{thCS}$ .....	$0.15^\circ\text{C}/\text{W}$
Typical Thermal Connection Torque, $F_m$ .....	$4.0\text{N} \bullet \text{m}$
Typical Mounting Torque, $F_m$ .....	$6.0\text{N} \bullet \text{m}$

**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	-	100	mA
Gate Trigger Voltage	$V_{GT}$		1.0	-	2.5	V
Holding Current	$I_H$		20	-	100	mA
Non-Trigger Gate Voltage	$V_{GD}$	$V_{DM} = 804V, T_J = +125^\circ C$	0.2	-	-	V

**Circuit Diagram**

