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## NTE5726 Powerblock Module

### **Description:**

The NTE5726 uses high voltage power thyristors/diodes and is electrically isolated from the metal base, allowing common heatsinks and compact assemblies to be built. This device is intended for general purpose applications such as battery chargers, welders and plating equipment and where high voltage and high current are required.

### **Features:**

- High Voltage
- Electrically Isolated Base Plate
- 3000V<sub>RMS</sub> Isolating Voltage
- High Surge Capability
- Large Creepage Distances

### **Applications:**

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

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

Max. Mean On-State Current, $I_{T(AV)}$ ( $T_C = +85^\circ\text{C}$ , $180^\circ$ Conduction, Half Sine Wave, 50Hz, Single Side Cooled) .....	160A
Max. RMS On-State Current, $I_{T(RMS)}$ .....	360A
Max. Repetitive Peak Reverse and Off-State Blocking Voltage, $V_{DRM}$ , $V_{RRM}$ ( $t_p = 10\text{ms}$ , $V_{DSM}$ & $V_{RSM} = V_{DRM}$ & $V_{RRM} + 200\text{V}$ Respectively) .....	1600V
Max. Repetitive Peak Current (At $V_{DRM}$ & $V_{RRM}$ Respectively), $I_{DRM}$ , $I_{RRM}$ .....	20mA
Max. Surge On-State Current ( $V_R = 60\% V_{RRM}$ , 10ms Half Sine Wave), $I_{TSM}$ .....	5.4KA
Max. $I^2t$ fo Fusing Coordination ( $V_R = 60\% V_{RRM}$ , 10ms Half Sine Wave), $I^2_t$ .....	$146\text{A}^2\text{s} * 10^3$
Max. Threshold Voltage, $V_{TO}$ .....	0.8V
Max. On-State Slope Resistance, $r_T$ .....	1.69m $\Omega$
Max. Peak On-State Voltage ( $I_{TM} = 480\text{A}$ , $T_J = +25^\circ\text{C}$ ), $V_{TM}$ .....	1.7V
Max. Critical Rate of Rise of Off-State Voltage ( $V_{DM} = 67\% V_{DRM}$ ), $dv/dt$ .....	800V/ $\mu\text{s}$
Max. Critical Rate of Rise of On-State Current, $di/dt$ ( $I_{TM} = 320\text{A}$ , gate Source 1.5A, $t_r \leq 0.5\mu\text{s}$ Repetitive) .....	100A/ $\mu\text{s}$
Gate Trigger Current ( $V_A = 12\text{V}$ , $I_A = 1\text{A}$ , $T_J = +25^\circ\text{C}$ ), $I_{GT}$ .....	30mA to 150mA
Gate Trigger Voltage ( $V_A = 12\text{V}$ , $I_A = 1\text{A}$ , $T_J = +25^\circ\text{C}$ ), $V_{GT}$ .....	1.0V to 2.5V

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

Holding Current ( $V_A = 12\text{V}$ ,  $I_A = 1\text{A}$ ,  $T_J = +25^\circ\text{C}$ ),  $I_H$  ..... 30mA to 150mA

Min. Non-Trigger Gate Voltage ( $V_{\text{DRM}} = 67\% V_{\text{DRM}}$ ),  $V_{\text{GD}}$  ..... 0.2V

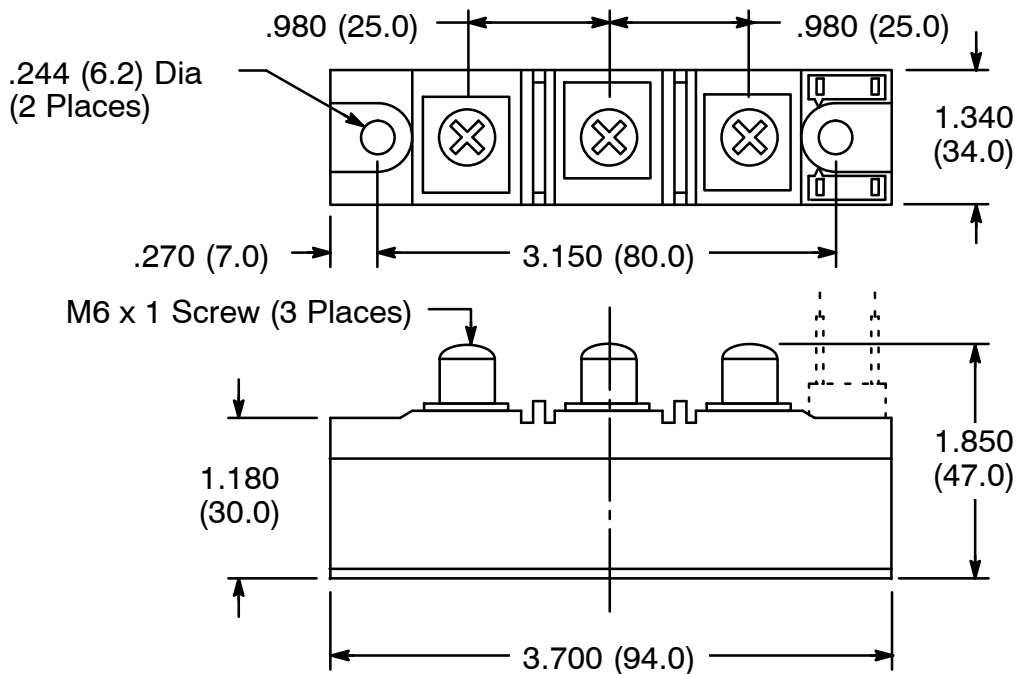
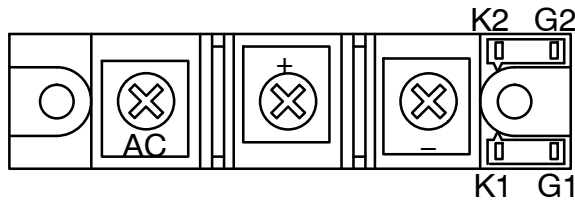
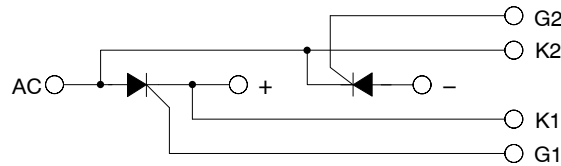
RMS Isolation Voltage (50Hz,  $t = 1\text{s min.}$ ,  $I_{\text{ISO}} = 1\text{mA max.}$ ),  $V_{\text{ISO}}$  ..... 2500V

Storage Temperature Range,  $T_{\text{stg}}$  .....  $-40^\circ$  to  $+125^\circ\text{C}$

Thermal Resistance, Junction-to-Case (Single Side Cooled),  $R_{\text{thJC}}$  .....  $0.170^\circ\text{C/W}$

Thermal Resistance, Case-to-Sink (Single Side Cooled),  $R_{\text{thCS}}$  .....  $0.08^\circ\text{C/W}$

**Circuit Diagram**



**NOTE:** Can be used with Heat Sink NTE441A

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