**Solid State Devices, Inc.**
14701 Firestone Blvd. * La Mirada, CA 90638
Phone: (562) 404-4474 * Fax: (562) 404-1773
ssdi@ssdi-power.com * www.ssdi-power.com

# SPX2091

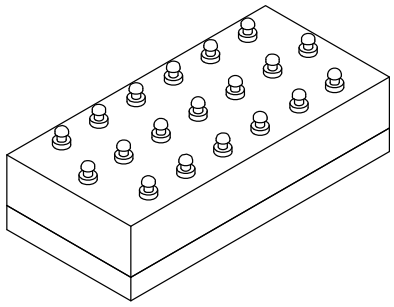
## 1 AMP
## 9,300 VOLTS
## HIGH VOLTAGE
## RECTIFIER BRIDGE STACK

## Designer's Data Sheet

**FEATURES:**

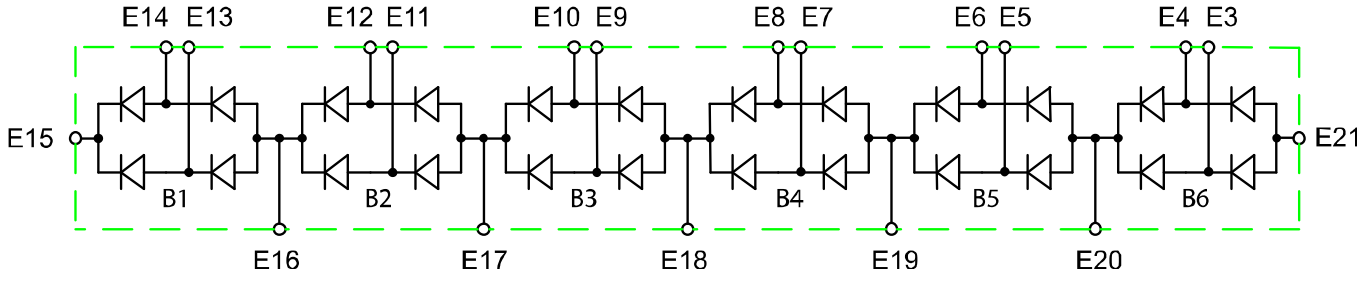
- Aerospace High Voltage Power Supply Applications
- High Blocking Voltage – 9,300 V Minimum
- Low Mechanical Stress Design
- Excellent Thermal Management – 2.5 °C/W
- TX, TXV, and Space Level Screening Available.
- Consult Factory for:
  - Higher Blocking Voltages
  - Faster Switching Speeds
  - Other Electrical Configurations
  - Available with a sandblasted case to promote adhesion, add "SAB" suffix.

**ASPM**



| MAXIMUM RATINGS | | Symbol | Value | Units |
|---|---|---|---|---|
| **Peak Inverse Voltage** (Each Bridge) | **B1**<br>**B2-B6** | $V_R$ | 3,300<br>1,200 | **Volts** |
| **Average Rectified Forward Current** (Non-Repetitive, t = 8.3 ms Pulse) | | $I_O$ | 1 | **Amps** |
| **Peak Surge Current** (Non-Repetitive, t = 8.3 ms Pulse, $T_A$ = 25°C) | | $I_{FSM}$ | 25 | **Amps** |
| **Operating Temperature Range** | | $T_{OP}$ | -65 to +150 | **°C** |
| **Storage Temperature Range** | | $T_{stg}$ | -65 to +150 | **°C** |
| **Maximum Thermal Resistance** (Junction to Base) | | $R_{\theta JB}$ | 2.5 | **°C/W** |

**ELECTRICAL SCHEMATIC**




| NOTE: All specifications are subject to change without notification. SCD's for these devices should be reviewed by SSDI prior to release. | DATA SHEET #: PM0023E | DOC |
|---|---|---|

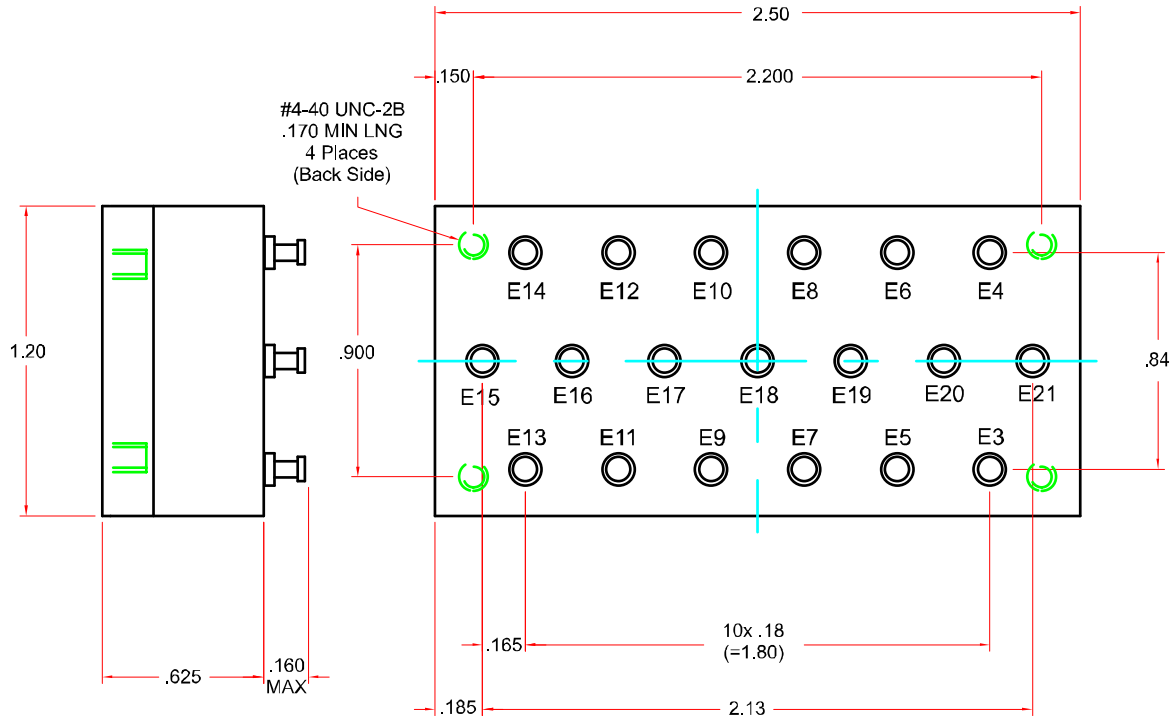
**Solid State Devices, Inc.**
14701 Firestone Blvd. * La Mirada, CA 90638
Phone: (562) 404-4474 * Fax: (562) 404-1773
ssdi@ssdi-power.com * www.ssdi-power.com

# SPX2091

| ELECTRICAL CHARACTERISTICS 1/ | | Symbol | Min | Typ | Max | Units |
|---|---|---|---|---|---|---|
| **Instantaneous Forward Voltage Drop**<br>($I_F$ = 1.0 A, 300 – 500 µsec Pulse) | B1<br>B2-B6 | $V_{F1}$<br>$V_{F2}$ | —<br>— | —<br>— | 7.5<br>2.5 | **Volts** |
| **Instantaneous Forward Voltage Drop**<br>($I_F$ = 0.35 A, $T_A$ = 100ºC, 300 – 500 µsec Pulse) | B2-B6 | $V_{F3}$ | — | — | 1.3 | **Volts** |
| **Reverse Leakage Current**<br>($T_A$ = 25ºC, 300 – 500 µsec Pulse) | B1: $V_R$ = 2500V<br>B2-B6: $V_R$ = 1000V | $I_{R1}$<br>$I_{R2}$ | — | — | 1.0 | **µA** |
| **Reverse Leakage Current**<br>($T_A$ = 100ºC, 300 – 500 µsec Pulse) | B1: $V_R$ = 2500V<br>B2-B6: $V_R$ = 1000V | $I_{R3}$<br>$I_{R4}$ | — | — | 50 | **µA** |
| **Breakdown Voltage**<br>($I_R$ = 100 µA) | B1<br>B2-B6 | $B_{VR1}$<br>$B_{VR2}$ | 3,300<br>1,200 | —<br>— | —<br>— | **Volts** |
| **Insulation Resistance**<br>(All Terminals to Base @ 15,000 Volts) | | $R_{INSUL1}$ | 10 | — | — | **GΩ** |
| **Reverse Recovery Time**<br>($I_F$ = 0.5 A, $I_R$ = 1.0 A, $I_{RR}$ = 0.25 A) | | $t_{RR}$ | — | — | 60 | **nsec** |
| **Capacitance (Per Diode)** | B1: $V_R$ = 100 V<br>B2-B6: $V_R$ = 10 V | $C_{T1}$<br>$C_{T2}$ | —<br>— | —<br>— | 13<br>25 | **pF** |

**NOTE:** 1/ All Electrical Characteristics Are for Bridge Leg @ $T_A$ = 25ºC (Unless Otherwise Specified)

**PACKAGE OUTLINE: ASPM**




Tolerances (Unless Otherwise Specified)
.XX ± .03” .XXX ± .010”