

**Solid State Devices, Inc.**

14701 Firestone Blvd * La Mirada, Ca 90638
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SPA513 Series
**1 AMP, 15,000 to 20,000 VOLTS
 HIGH VOLTAGE
 RECTIFIER BRIDGE**
Designer's Data Sheet**Part Number/Ordering Information ^{1/}****SPA513-****Finish**

— = Standard Case
 SAB = Sand Blasted Case

Screening ^{2/}

— = Not Screened
 TX = TX Level
 TXV = TXV Level
 S = Space Level

Dash Number ^{3/}**FEATURES:**

- Aerospace High Voltage Power Supply Applications
- Multiple High Voltage Transformer Rectification
- High Voltage Multiplier Design Using External Capacitors
- Low Mechanical Stress Design
- Excellent Thermal Resistance : 2.5°C/W
- TX, TXV, and Space Level Screening Available

Consult Factory For:

- Higher Blocking Voltages
- Faster Switching Times
- Other Electrical Configurations
- Available with a sandblasted case to promote adhesion add "SAB" suffix

MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Peak Repetitive Reverse and DC Blocking Voltage ^{3/} (Module)	SPA513-02 SPA513-03 SPA513-04 SPA513-05 SPA513-06 (BR1) SPA513-06 (BR2)	V_{R(MODULE)} 15 17.5 20 20 12.5 10	kV
Peak Repetitive Reverse and DC Blocking Voltage (Each Bridge)	T_C = 55°C V_R	3.3	kV
Average Rectified Forward Current (Non-Repetitive, t = 8.3 msec Pulse)	I_O	1	A
Peak Surge Current (Non-Repetitive, t = 8.3 msec Pulse, T _A = 25°C)	I_{FSM}	25	A
Storage & Operating Temperature Range	T_{OP} & T_{STG}	-65 to +150	°C
Thermal Resistance, Junction to Base	R_{θJB}	2.5	°C/W

ELECTRICAL CHARACTERISTICS, Each Bridge Leg, @ T_A = 25°C (Unless Otherwise Specified)

PARAMETER	SYMBOL	MIN	MAX	UNIT
Instantaneous Forward Voltage Drop (I _F = 1.0 A, 300 μsec Pulse Minimum)	V_{F1}	—	7.5	V
Reverse Leakage (V _R = 2.5 kV, 300 μsec Pulse Minimum)	T_A = 25°C I_{R1} T_A = 100°C I_{R2}	— —	1.0 50	μA
Insulation Resistance SPA513-02, -03, -04: All Terminals to Base @ 15 kV SPA513-05, -06: All Terminals to Base @ 20 kV	R_{INSUL}	10	— —	GΩ
Reverse Recovery Time (I _F = 0.5 A, I _R = 1.0 A, I _{RR} = 0.25 A)	t_{rr}	—	60	nsec

Notes: ^{1/} For ordering information, price, and availability- Contact factory.^{2/} Screened based on MIL-PRF-19500. Screening flows available on request.^{3/} For each dash number, refer to V_{R(MODULE)} rating, schematic, and outline.

NOTE: All specifications are subject to change without notification.
 SCD's for these devices should be reviewed by SSDI prior to release.

DATA SHEET #: PM0012G**DOC**



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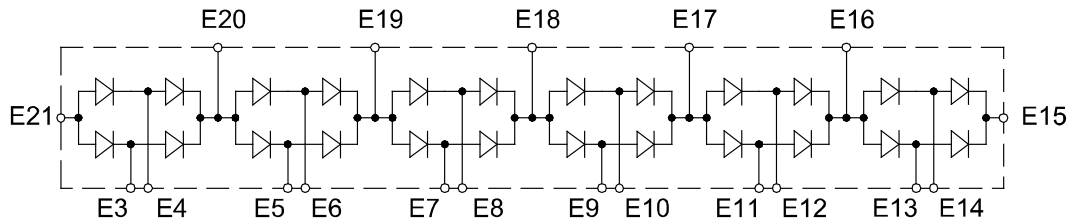
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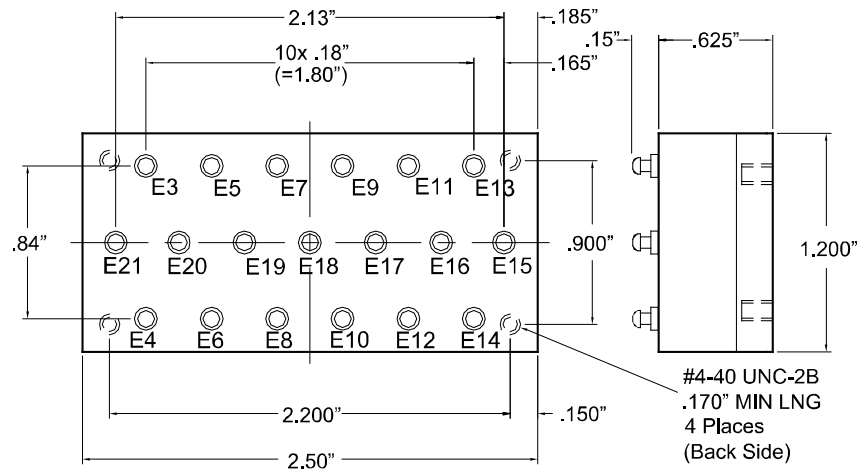
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SPA513 Series

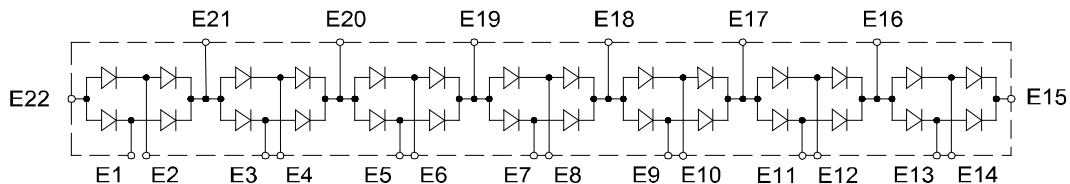
SPA513-02



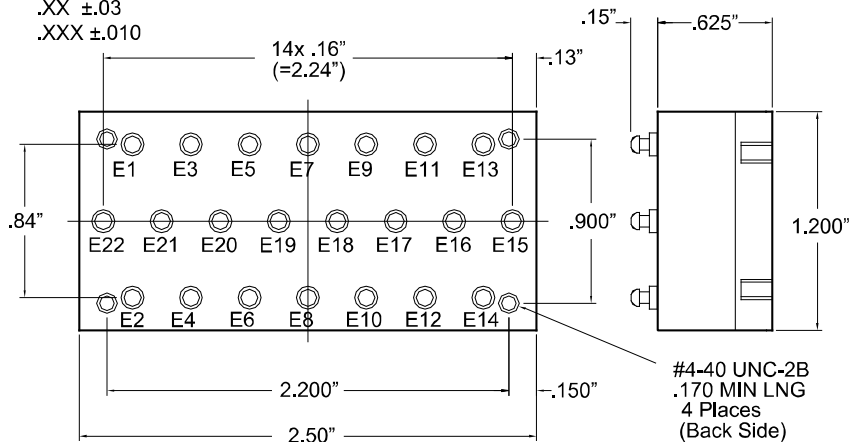
Tolerances
(Unless Specified):
.XX ± .03
.XXX ± .010



SPA513-03



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



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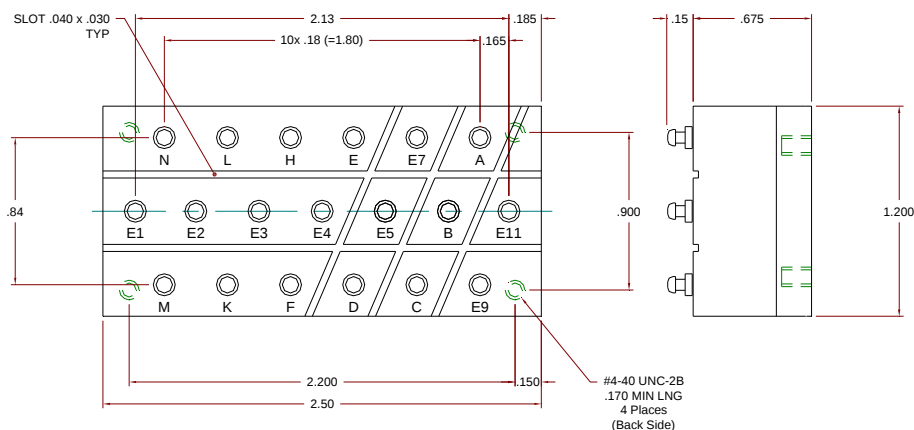
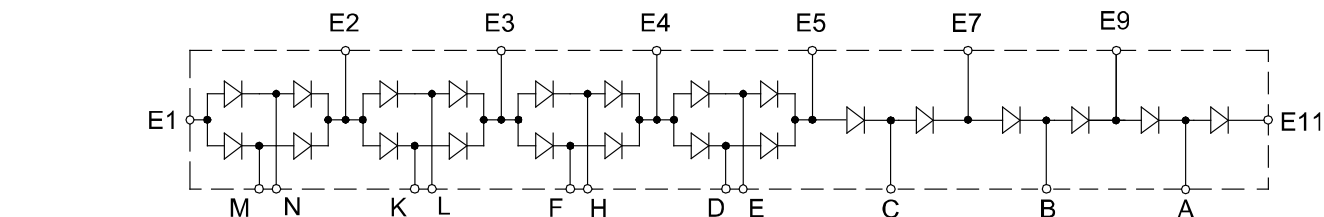


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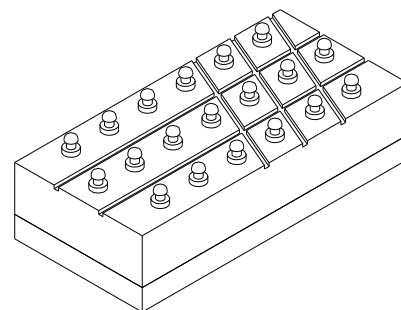
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SPA513 Series

SPA513-04

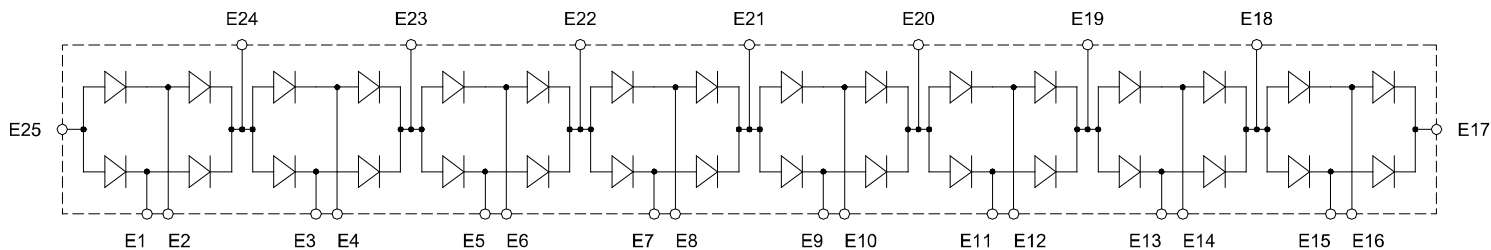


ASPM

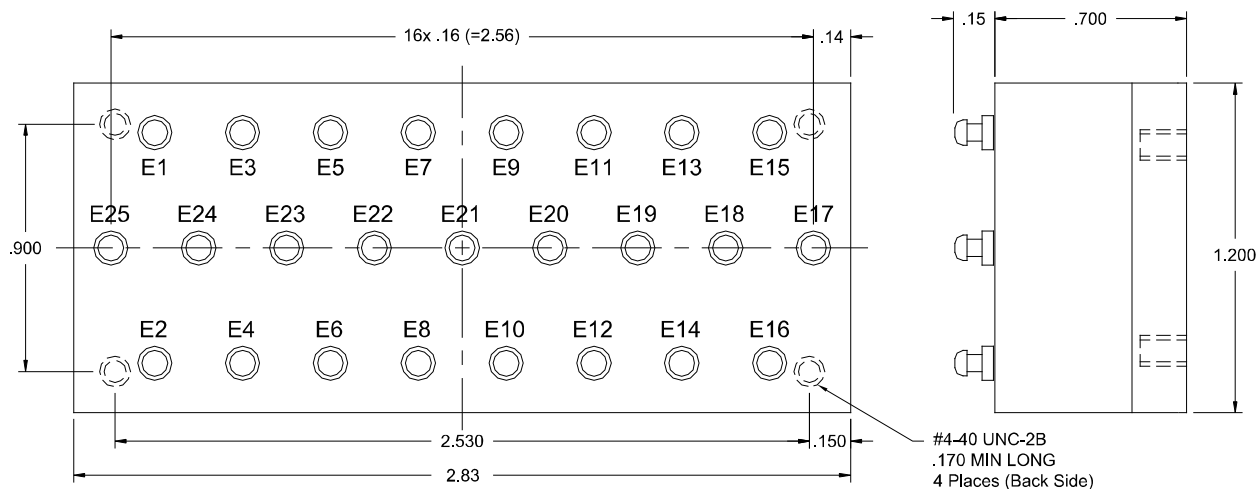


Tolerances
(Unless Specified):
.XX ± .03
.XXX ± .010

SPA513-05



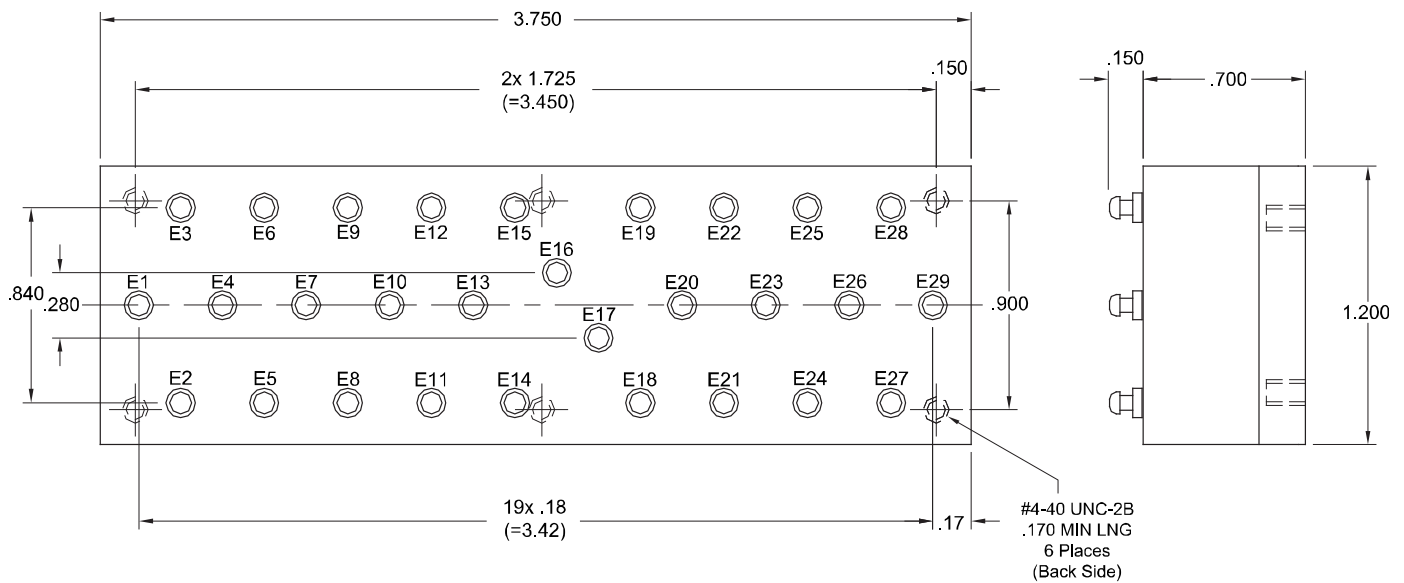
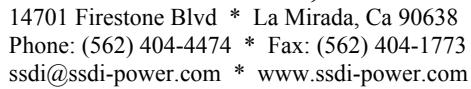
Tolerances
(Unless Specified):
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.XXX ± .010



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