



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

SPA513 Series

**1 AMP, 15,000 to 20,000 VOLTS
 HIGH VOLTAGE
 RECTIFIER BRIDGE STACK**

Designer's Data Sheet

Part Number/Ordering Information ^{1/}
SPA513- _ _ _

 L **Finish**
 _ = Standard Case
 SAB = Sand Blasted Case

Screening ^{2/}
 _ = Not Screened
 TX = TX Level
 TXV = TXV
 S = S Level

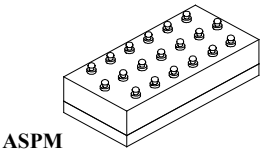
Dash Number ^{3/}

FEATURES:

- Aerospace High Voltage Power Supply Applications
- Low Mechanical Stress Design
- Excellent Thermal Management- 2.5DC/W
- TX, TXV, and Space Level Screening Available

Consult Factory For:

- Higher Blocking Voltages
- Faster Switching Voltages
- Other Electrical Configurations



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MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Peak Repetitive Reverse and DC Blocking Voltage (Module)	SPA513-02 SPA513-03 SPA513-04	15 KV 17.5 KV 20 KV	Volts
Peak Repetitive Reverse and DC Blocking Voltage (Each Bridge)	V_R	3,300	Volts
Average Rectified Forward Current (Non-Repetitive, t = 8.3 msec Pulse)	I_O	1	Amps
Peak Surge Current (Non-Repetitive, t = 8.3 msec Pulse, T_A = 25°C)	I_{FSM}	25	Amps
Storage & Operating Temperature Range	T _{OP} & T _{STG}	-65 to +150	°C
Thermal Resistance, Junction to Base	θ_{JB}	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 = 1.0A, 300µsec Pulse Minimum)	V_{F1}	---	7.5	Volts
Reverse Leakage (V_R = 2,500V, 300µsec Pulse Minimum)	T _A = 25°C I _{R1} T _A = 100°C I _{R2}	---	1.0 50	µAmps
Insulation Resistance (All Terminals to Base @ 15,000V)	R _{INSUL1}	10	---	GΩ
Reverse Recovery Time (I_F = 0.5A, I_R = 1.0A, I_{RR} = 0.25A)	t _{rr}	---	60	nsec

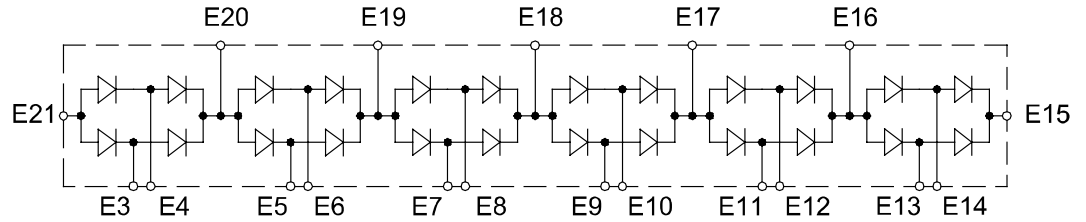
Notes: ^{1/} For ordering information, price, and availability- Contact Factory.
^{2/} Screened to MIL-PRF-19500.
^{3/} For each dash number, refer to V_{R(MODULE)} rating, schematic, and outline.



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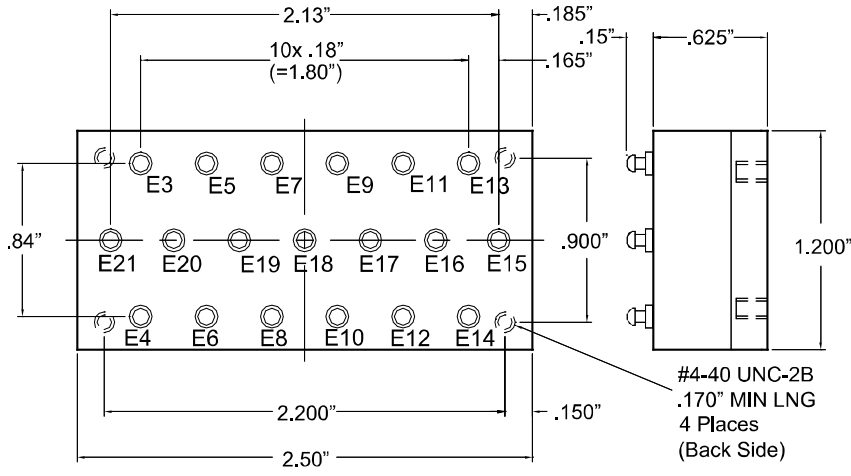
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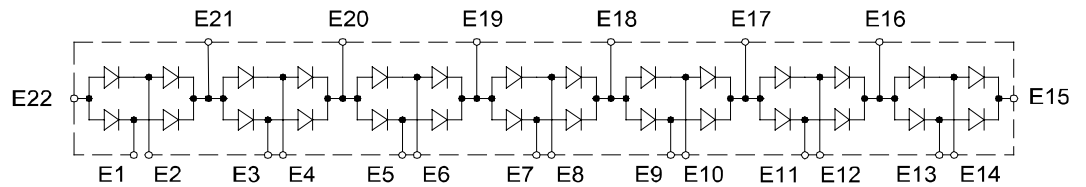


SPA513-02 Schematic

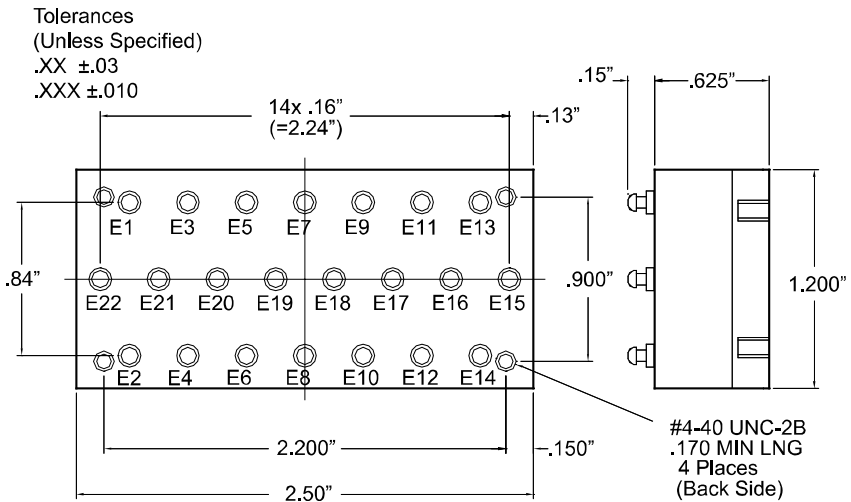
Tolerances
(Unless Specified):
.XX ± .03
.XXX ± .010



SPA513-02 Outline



SPA513-03 Schematic



SPA513-03 Outline

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

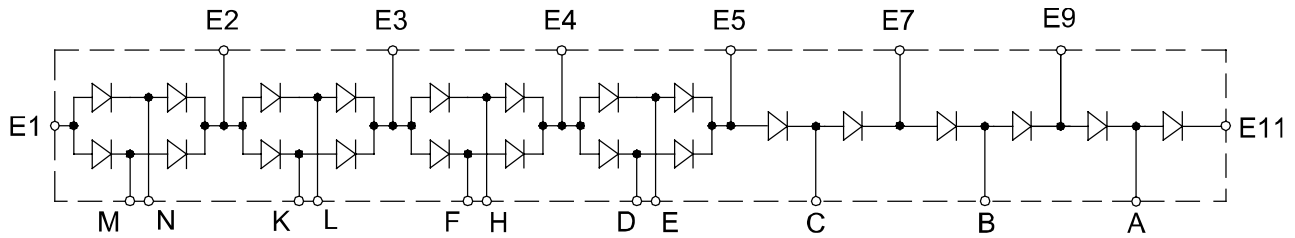
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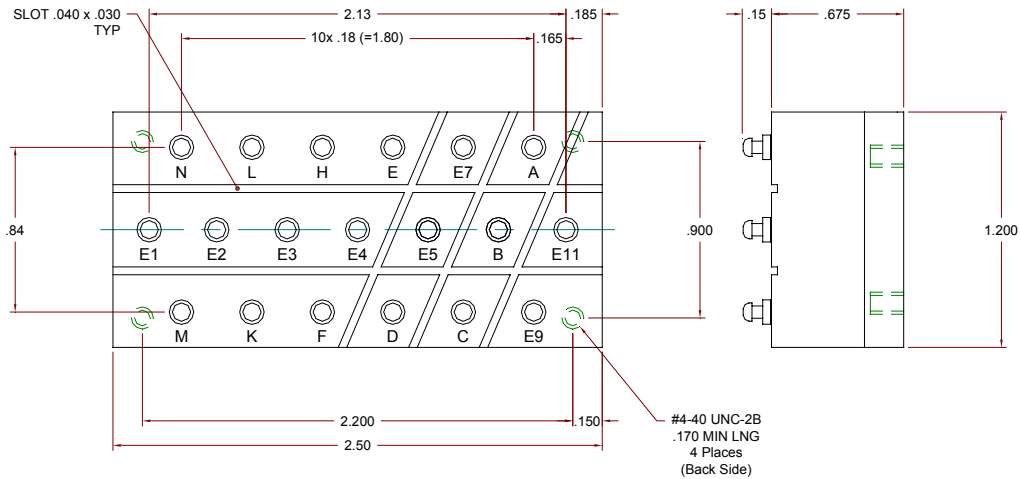
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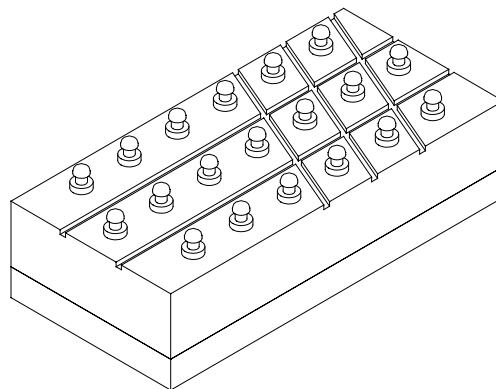


SPA513-04 Schematic

SPA513-04 Outline



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



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DATA SHEET #: PM0012E

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