


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 STACK**
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

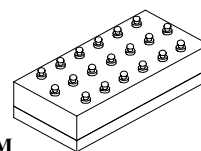
S = S Level

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



ASPM

MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Peak Repetitive Reverse and DC Blocking Voltage (Module)	SPA513-02 SPA513-03 SPA513-04 $V_{R(MODULE)}^{3/}$	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}	---	1.0	µAmps
T _A = 100°C	I _{R2}	---	50	
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.

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

DATA SHEET #: PM0012E
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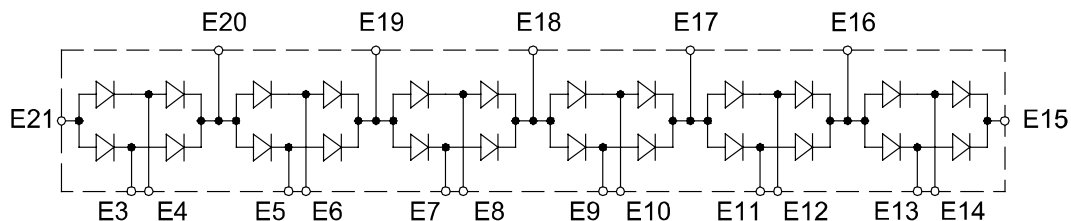


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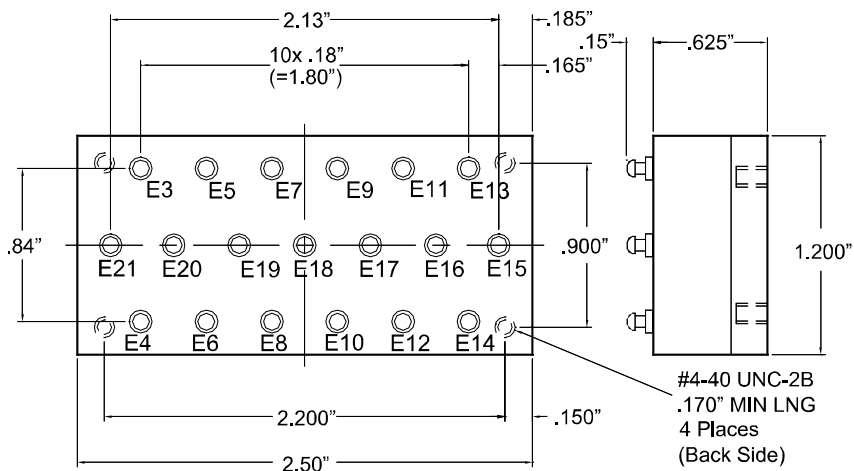
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SPA513 Series

SPA513-02 Schematic

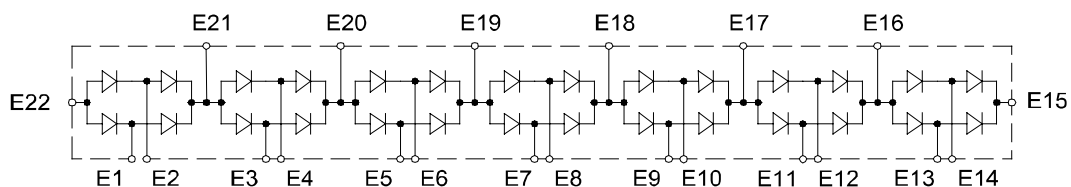


Tolerances
(Unless Specified):
.XX ± .03
.XXX ± .010

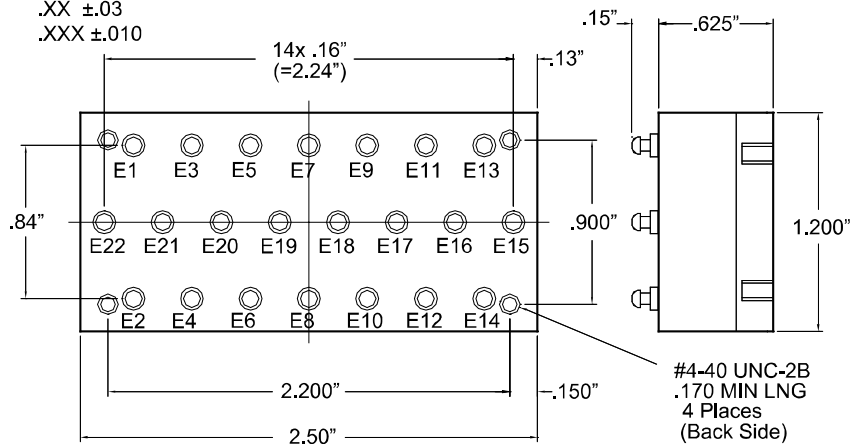


SPA513-02 Outline

SPA513-03 Schematic



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



SPA513-03 Outline

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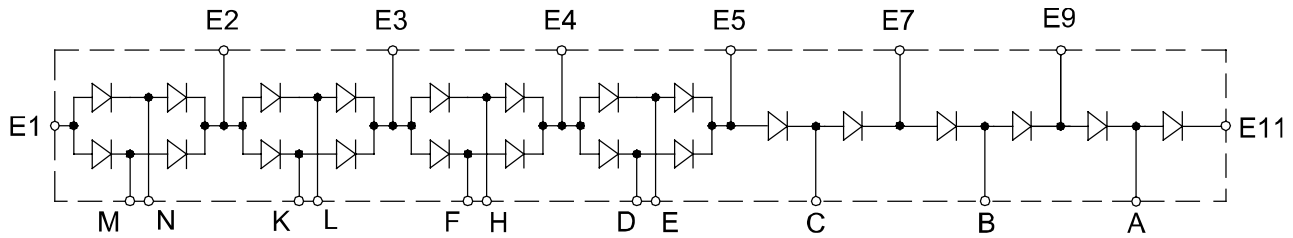
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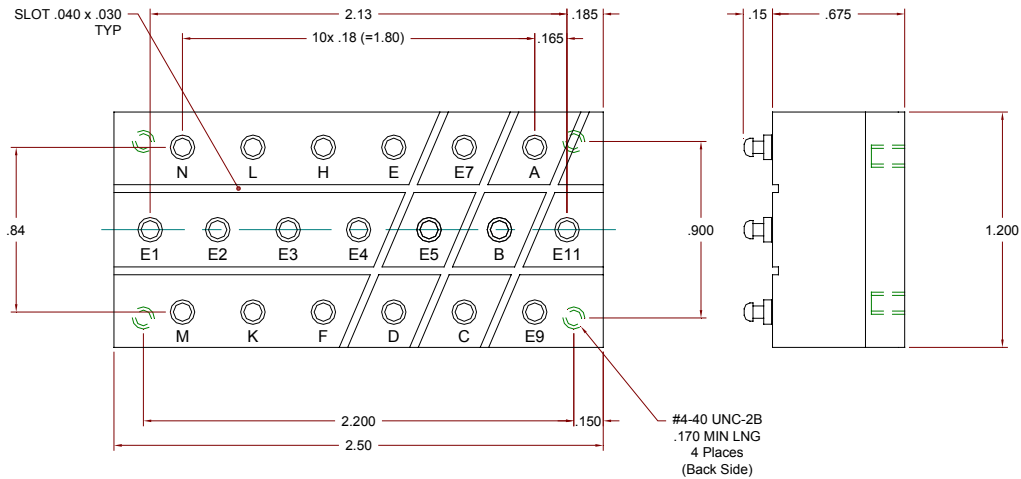
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SPA513 Series

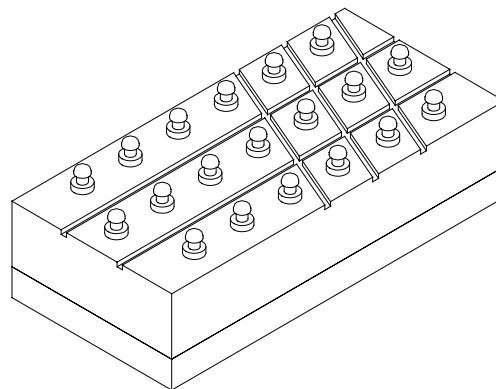


SPA513-04 Schematic

SPA513-04 Outline



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



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