



PRELIMINARY

**SOLID STATE DEVICES, INC.**

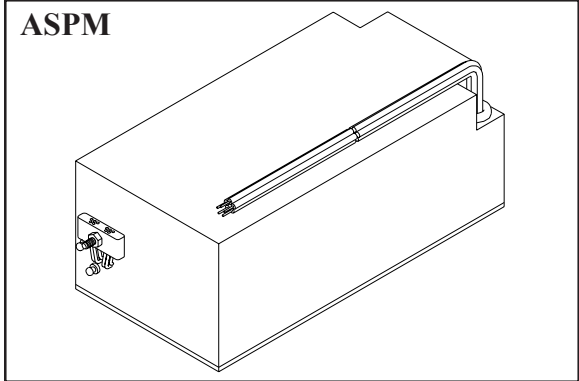
14005 Stage Road \* Santa Fe Springs, Ca 90670  
 Phone: (562) 404-4474 \* Fax: (562) 404-1773

**DESIGNER'S DATA SHEET**

**SDA441-01**

**5 kV DC - DC  
 DUAL HIGH VOLTAGE  
 CONVERTER**

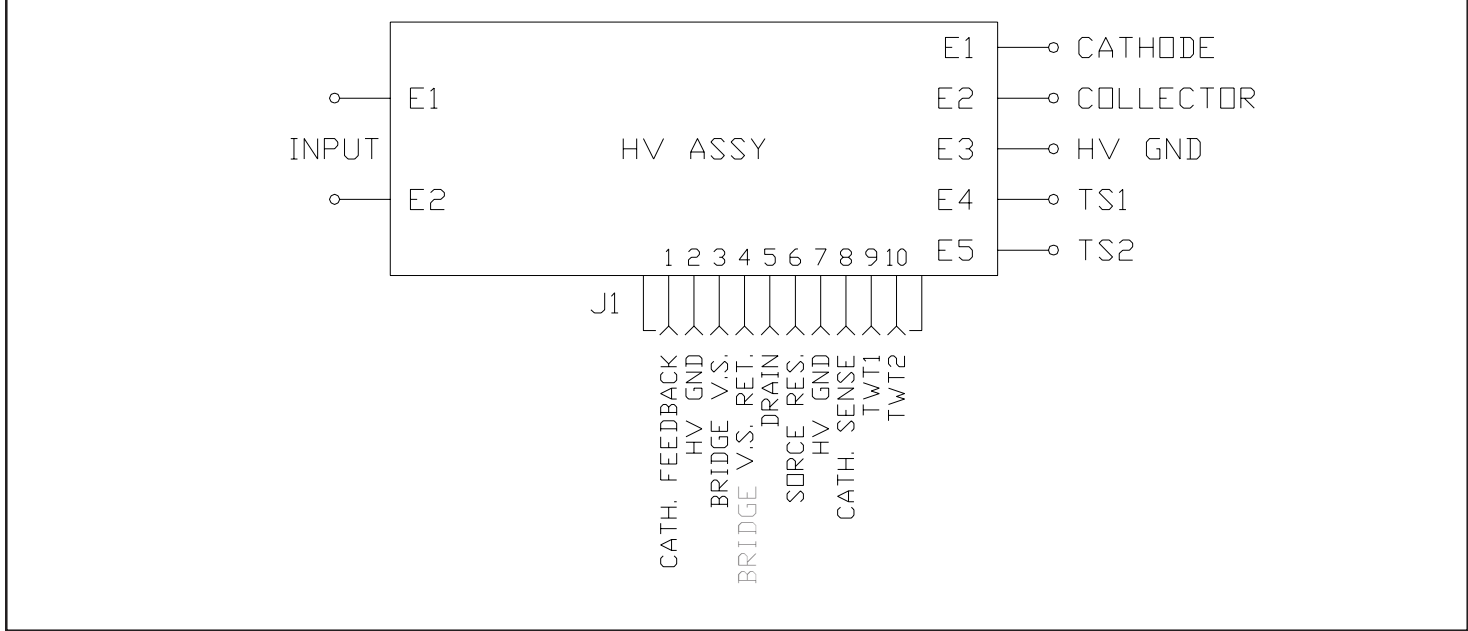
- FEATURES:**
- Application: Airborne Dual TWT High Voltage Converter
  - 1 kW Output Power
  - High Power Density (more than 50W/in<sup>3</sup>)
  - Minimum 95% Output Efficiency
  - Minimum Operational Altitude 50,000 ft.
  - Designed for Low EMI and Noise
  - Space Level Version Available
  - Consult Factory for:
    - Alternate Output Voltages
    - Application Specific Terminations.



**MAXIMUM RATINGS**

CHARACTERISTIC		SYMBOL	VALUE	UNIT
INPUT	Voltage	$V_{IN}$	300	Voltspp
	Frequency	$f_{OP}$	50	kHz
OUTPUT	Cathode	$V_{CATH}$	6,000	Volts
	Collector	$V_{COLL}$	3,000	Volts
	Ripple	$V_{RIPPLE}$	10	Volts
Operating and Storage Temperature Range		$T_{OP}$ $T_{STG}$	-40 TO +87 -40 TO +125	°C

**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 #: PM0006A**

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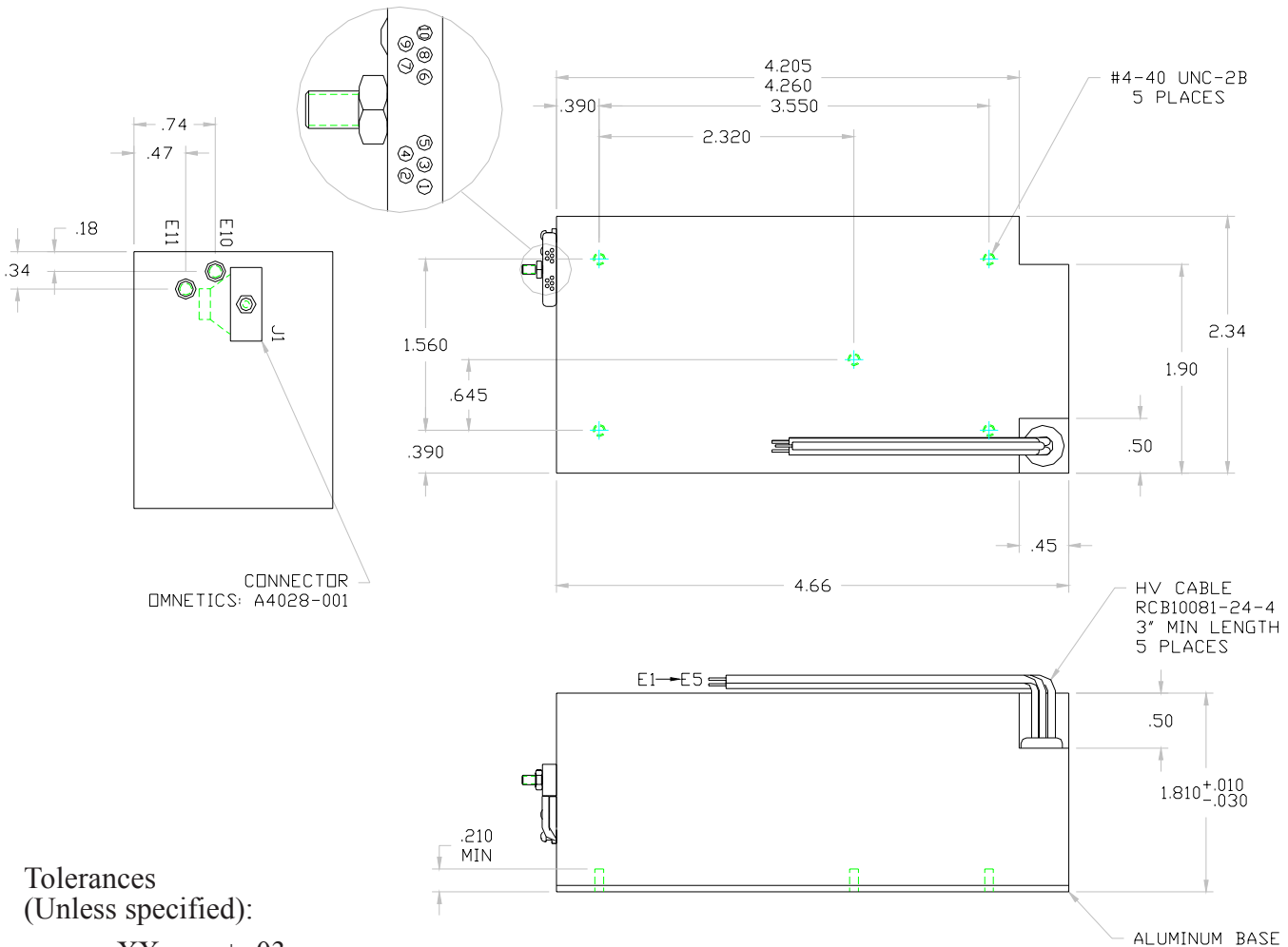
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**ELECTRICAL CHARACTERISTICS, @ T<sub>B</sub> = -40 TO +87°C**

OUTPUT VOLTAGES	SYMBOL	MIN	MAX	UNIT
Cathode - GND (E <sub>1</sub> - E <sub>3</sub> ) V <sub>IN</sub> = 260V <sub>PP</sub> nom, I <sub>IN</sub> = 8.6A max, f = 50kHz, R <sub>L</sub> = 320kΩ 1/	V <sub>CATH-GND</sub>	-4.75	-4.95	kVolts
Cathode - Collector (E <sub>1</sub> - E <sub>2</sub> ) V <sub>IN</sub> = 260V <sub>PP</sub> nom, I <sub>IN</sub> = 8.6A max, f = 50kHz, R <sub>L</sub> = 6.95kΩ 1/	V <sub>CATH-COL</sub>	-2.45	-2.55	kVolts
Drain - GND (J <sub>1.5</sub> - J <sub>1.2</sub> ) V <sub>IN</sub> = 260V <sub>PP</sub> nom, I <sub>IN</sub> = 8.6A max, f = 50kHz, R <sub>L</sub> = 13kΩ 1/	V <sub>DRAIN</sub>	190	210	Volts
Cathode Feedback - GND (J <sub>1.1</sub> - J <sub>1.2</sub> ) V <sub>IN</sub> = 260V <sub>PP</sub> nom, I <sub>IN</sub> = 8.6A max, f = 50kHz, R <sub>L</sub> = 10kΩ 1/	V <sub>CATFB</sub>	-4.75	-4.95	Volts
Cathode Sense - GND (J <sub>1.8</sub> - J <sub>1.2</sub> ) V <sub>IN</sub> = 260V <sub>PP</sub> nom, I <sub>IN</sub> = 8.6A max, f = 50kHz, R <sub>L</sub> = 39kΩ 1/	V <sub>CATSEN</sub>	-4.50	-5.00	Volts

1/ All output loads are applied at the same time.

**PACKAGE OUTLINE: ASPM**



Tolerances  
 (Unless specified):

.XX ± .03  
 .XXX ± .010