



**Solid State Devices, Inc.**

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**SDA160A thru SDA160F**

**40 AMPS 50 – 300 VOLTS  
 HYPER FAST RECOVERY  
 THREE PHASE BRIDGE RECTIFIER**

**Designer's Data Sheet**

**Part Number/Ordering Information <sup>1/</sup>**  
**SDA160** \_ \_ \_  
 |  
 | **Screening <sup>2/</sup>**  
 |     \_ = Not Screened  
 |     TX = TX Level  
 |     TXV = TXV  
 |     S = S Level  
 |  
 | **Terminals**     \_ = Spade Terminals  
 |                    T = Turret Terminals  
 |  
 | **Peak Inverse Voltage (per leg)**  
 |     A = 50V, B = 100V, C = 150V,  
 |     D = 200V, E = 250V, F = 300V,

- FEATURES:**
- Hyper Fast Reverse Recovery Time 40 ns Max <sup>4/</sup>
  - Average Output Current 40 Amps @ 55°C
  - PIV 50 to 300 Volts Per Leg
  - Available with Turret or Spade Terminals
  - High Surge Rating- 250A
  - Thermally Superior Encapsulant
  - Hermetically Sealed Diode Cells
  - Replacement for Unitrode 800 Series
  - Aluminum Case, Electrically Insulated
  - Available in Higher Voltages
  - Available in Hyper Fast Recovery Times

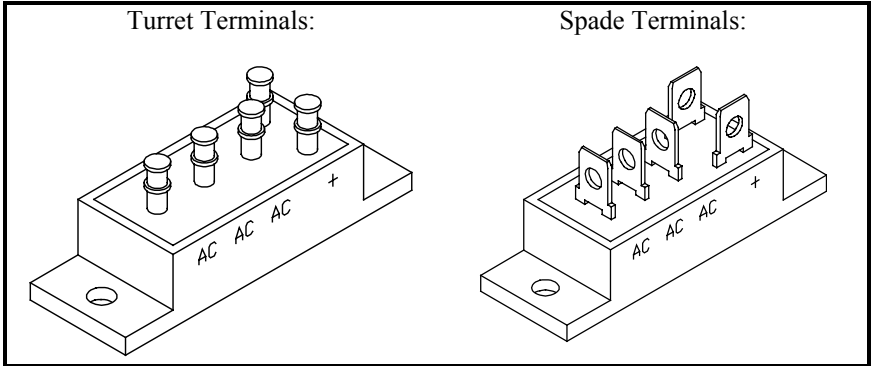
**MAXIMUM RATINGS <sup>3/</sup>**

RATING	SYMBOL	VALUE	UNIT
Peak Repetitive Reverse Voltage <sup>5/</sup> (per leg) And DC Blocking Voltage (per leg)	SDA160A SDA160B SDA160C SDA160D SDA160E SDA160F  <b>V<sub>RM(REP)</sub> VR</b>	50 100 150 200 250 300	Volts
Half Wave Rectified Forward Current, Averaged Over Full Cycle (Resistive Load, 60 Hz, Sine Wave, T <sub>C</sub> = 55°C)	<b>I<sub>O</sub></b>	40	Amps
Peak Repetitive Forward Current (per leg) (T <sub>C</sub> = 55°C, 8.3 msec Pulse, Allow Junction to Reach Equilibrium Between Pulses)	<b>I<sub>FM(REP)</sub></b>	150	Amps
Peak Surge Current (per assembly) (T <sub>C</sub> = 55°C, Superimposed on Rated Current at Rated Voltage, 8.3 msec Pulse)	<b>I<sub>FM(SURGE)</sub></b>	250	Amps
Operating & Storage Temperature	<b>T<sub>OP</sub> and T<sub>STG</sub></b>	-65 to +150	°C
Thermal Resistance, Junction to Case	<b>R<sub>θJC</sub></b>	1.5	°C/W

**SDA160 Packages:**

**NOTES:**

- <sup>1/</sup> For Ordering Information, Price, and Availability- Contact Factory.
- <sup>2/</sup> Screened to MIL-PRF-19500.
- <sup>3/</sup> Unless Otherwise Specified, All Electrical Characteristics @25°C.
- <sup>4/</sup> Recovery Conditions:  
I<sub>F</sub> = 0.5 Amp, I<sub>R</sub> = 1.0 Amp rec. to .25 Amp.
- <sup>5/</sup> For RMS Reverse Voltage, multiply V<sub>R</sub> values by .707



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

**DATA SHEET #: RA0089A**

**DOC**



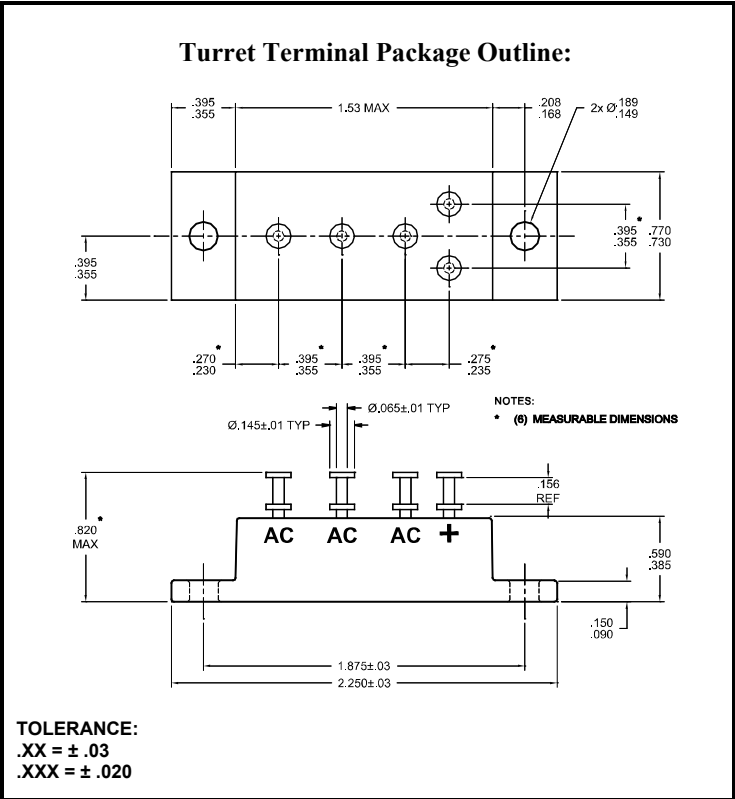
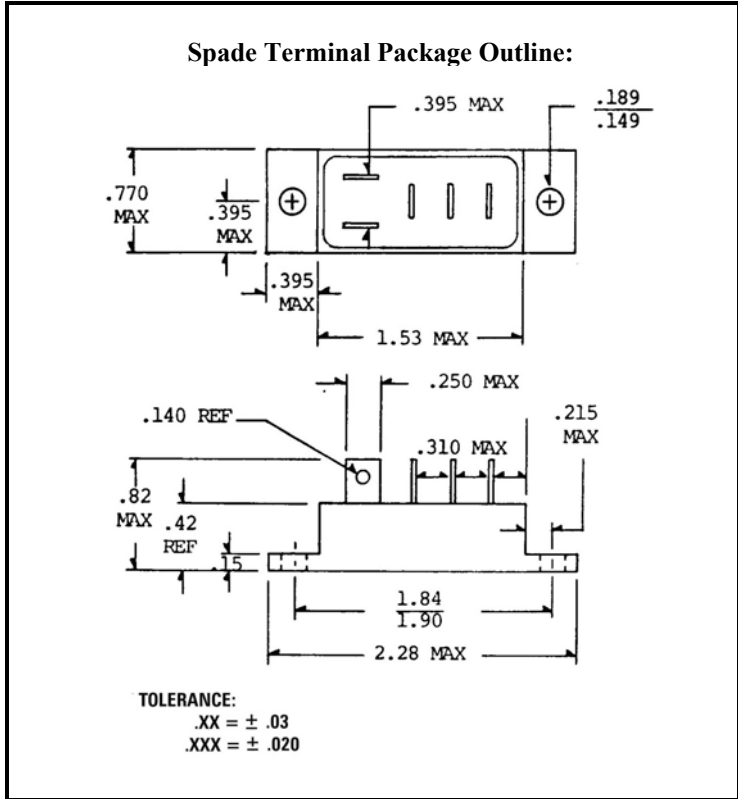
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SDA160A thru SD160F

ELECTRICAL CHARACTERISTICS (per leg) <sup>3/</sup> <sup>6/</sup>

CHARACTERISTICS	SYMBOL	VALUE	UNIT
Maximum Instantaneous Forward Voltage Drop ( $I_F = 10A, 60Hz, 300 \mu s$ Pulse, $T_C = 25^\circ C$ )	$V_F$	1.2	Volts
Maximum Reverse Leakage Current (Rated $V_R, T_C = 25^\circ C$ )	$I_{R1}$	20	$\mu A$
Maximum Reverse Leakage Current (Rated $V_R, T_C = 100^\circ C$ )	$I_{R2}$	2	mA
Maximum Reverse Recovery Time ( $I_F = 500mA, I_R = 1A, I_{RR} = 250mA$ )	$t_{rr}$	40	ns



**NOTES:**

- 1/ For Ordering Information, Price, and Availability- Contact Factory.
- 2/ Screened to MIL-PRF-19500.
- 3/ Unless Otherwise Specified, All Electrical Characteristics @25°C.
- 4/ Recovery Conditions:  $I_F = 0.5$  Amp,  $I_R = 1.0$  Amp rec. to .25 Amp.
- 5/ For RMS Reverse Voltage, multiply  $V_R$  values by .707
- 6/ For information on operating curves, contact Factory.