



# SOLID STATE DEVICES, INC.

14830 Valley View Blvd \* La Mirada, Ca 90638  
 Phone: (562) 404-7855 \* Fax: (562) 404-1773  
 ssdi@ssdi-power.com \* www.ssdi-power.com

## Designer's Data Sheet

**1N6690 - 1N6693  
 and  
 1N6690US - 1N6693US**

**20 AMP  
 600 - 1200 VOLTS  
 75 ns  
 ULTRA FAST  
 RECTIFIER**

**AXIAL & SURFACE MOUNT**

- FEATURES:**
- Replaces DO-4 and DO-5
  - Ultra Fast Recovery
  - PIV to 1200 Volts
  - Low Reverse Leakage
  - Hermetically Sealed Void-Free Construction <sup>1/</sup>
  - Monolithic Single Chip Construction
  - High Surge Rating
  - Low Thermal Resistance
  - Available in Surface Mount (-US Suffix) and in Button Tab Mounting (See Data Sheet RU0129).
  - TX, TXV and Space Level Screening Available
- <sup>1/</sup> PIND Testing not required on Void-Free Devices per MIL-PRF-19500

Maximum Ratings	SYMBOL	VALUE	UNITS
Peak Repetitive Reverse and DC Blocking Voltage	1N6690 & 1N6690US 1N6691 & 1N6691US 1N6692 & 1N6692US 1N6693 & 1N6693US	$V_{RRM}$ 600 $V_{RWM}$ 800 $V_R$ 1000 1200	Volts
Average Rectified Forward Current (Resistive Load, 60Hz, Sine Wave, $T_C = 100^\circ\text{C}$ )	$I_o$	20	Amps
Peak Surge Current (8.3 ms Pulse, Half Sine Wave Superimposed on $I_o$ , allow junction to reach equilibrium between pulses, $T_A = 25^\circ\text{C}$ )	$I_{FSM}$	375	Amps
Operating and Storage Temperature	Top & Tstg	-65 TO +175	$^\circ\text{C}$
Maximum Thermal Resistance Junction to Lead, $L = 3/8"$ Junction to End Tab	$R_{\theta JL}$ $R_{\theta JE}$	3.0 2.5	$^\circ\text{C/W}$

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

**DATA SHEET #: RU0143C**

**1N6690 - 1N6693  
and  
1N6690US - 1N6693US**

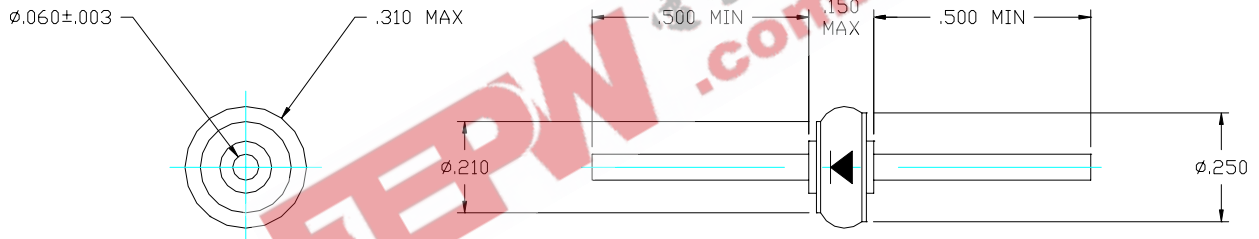


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Electrical Characteristics		SYMBOL	MAXIMUM	UNITS
<b>Instantaneous Forward Voltage Drop</b> ( $I_F = 20A_{DC}$ , 300 - 500 $\mu$ sec Pulse)	$T_A = 25^\circ C$	$V_{F1}$	<b>1.9</b>	$V_{DC}$
	$T_A = -55^\circ C$	$V_{F2}$	<b>2.2</b>	
<b>Reverse Leakage Current</b> (Rated $V_R$ , 300 $\mu$ sec pulse minimum)	$T_A = 25^\circ C$	$I_{R1}$	<b>10</b>	$\mu A$
	$T_A = 100^\circ C$	$I_{R2}$	<b>2.0</b>	<b>mA</b>
<b>Junction Capacitance</b> ( $V_R = 10V_{DC}$ , $T_A = 25^\circ C$ , $f = 1MHz$ )		$C_J$	<b>250</b>	<b>pF</b>
<b>Reverse Recovery Time</b> ( $I_F = 500 mA$ , $I_R = 1 A$ , $I_{RR} = 250 mA$ , $T_A = 25^\circ C$ )		$t_{RR}$	<b>75</b>	<b>nsec</b>

**CASE OUTLINE: Axial**



**CASE OUTLINE:  
Surface Mount Square Tab (SMS)**

