



PRELIMINARY

SOLID STATE DEVICES, INC

14849 Firestone Boulevard · La Mirada, CA 90638  
Phone: (714) 670-SSDI (7734) · Fax: (714) 522-7424

**1N6686-1N6687  
thru  
1N6686US-1N6687US**

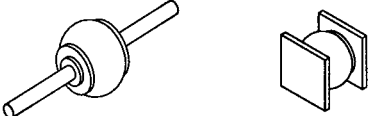
## Designer's Data Sheet

### FEATURES:

- Replaces DO-4 and DO-5 (1N5816, 1N6306)
- High Current Version of 1N5811
- Hyper Fast Recovery
- PIV to 200 Volts
- Low Reverse Leakage Current
- Hermetically Sealed Void-Free Construction \*
- Monolithic Single Chip Construction
- High Surge Rating
- Low Thermal Resistance
- Available in Surface Mount Versions (-US Suffix)
  
- TX, TXV, and Space Level Screening Available

**20 AMP  
100-200 VOLTS  
40 nsec  
HYPER FAST  
RECTIFIER**

**AXIAL & SURFACE MOUNT**



## MAXIMUM RATINGS

RATING	SYMBOL	VALUE	UNIT
Peak Repetitive Reverse and DC Blocking Voltage	1N6686 & 1N6686US	VRRM	100
	1N6687 & 1N6687US	VRWM	200
		VR	
Average Rectified Forward Current (Resistive Load, 60Hz, Sine Wave, TA=25°C)	IO	20	Amps
Peak Surge Current (8.3 ms Pulse, Half Sine Wave Superimposed on IO, allow junction to reach equilibrium between pulses, TA=25°C)	IFSM	375	Amps
Operating and storage temperature	Top & Tstg	-65 to +175	°C
Maximum Thermal Resistance Junction to Lead, L=3/8" (1N6686-1N6687) Junction to End Tab (1N6686US-1N6687US)	RθJL	4	°C/W
	RθJE	3.5	

\* PIND Testing not Required on Void Free devices per MIL-S-19500

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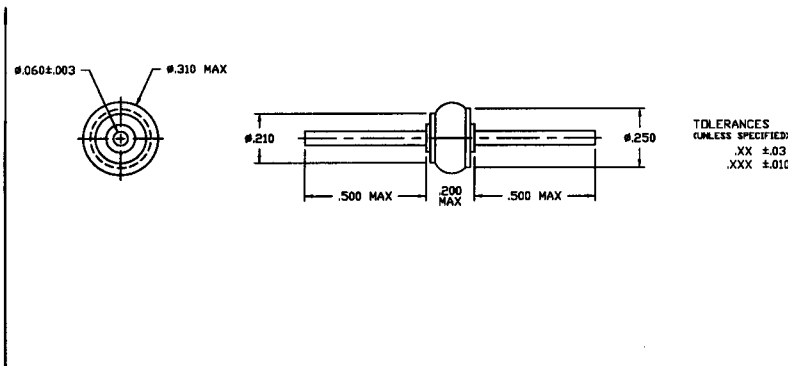
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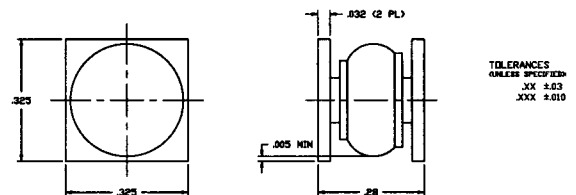
**ELECTRICAL CHARACTERISTICS**

CHARACTERISTICS	SYMBOL	MAXIMUM	UNIT
<b>Instantaneous Forward Voltage Drop</b> (IF = 5 Adc, TA=25°C, 300µs Pulse) (IF =20 Adc, TA=25°C, 300µs Pulse) (IF =70 Adc, TA=25°C, 300µs Pulse)	<b>VF</b>	0.78 0.875 1.0	<b>Vdc</b>
<b>Instantaneous Forward Voltage Drop</b> (IF = 5 Adc, TA= - 65°C, 300µs Pulse)	<b>VF</b>	1.0	<b>Vdc</b>
<b>Reverse Leakage Current</b> (Rated VR, TA=25°C, 300µs pulse minimum)	<b>IR</b>	50	<b>µA</b>
<b>Reverse Leakage Current</b> (Rated VR, TA=100°C, 300µs pulse minimum)	<b>IR</b>	10	<b>mA</b>
<b>Junction Capacitance</b> (VR = 10 Vdc, TA=25°C, f= 1 MHz )	<b>CJ</b>	350	<b>pf</b>
<b>Reverse Recovery Time</b> (IF=500mA, IR=1 A, IRR=250mA, TA=25°C)	<b>trr</b>	40	<b>nsec</b>

**SE OUTLINE: AXIAL**



**CASE OUTLINE: SURFACE MOUNT**



**TYPICAL OPERATING CURVES**

TA=25°C Unless otherwise specified

