Solid State Devices, Inc.
14701 Firestone Blvd * La Mirada, Ca 90638
Phone: (562) 404-4474 * Fax: (562) 404-1773
ssdi@ssdi-power.com * www.ssdi-power.com

1N6686-1N6687 and 1N6686US-1N6687US

DESIGNER'S DATA SHEET

20 AMP
100-200 Volts
40 nsec
HYPER FAST RECTIFIER

Part Number / Ordering Information [1/]

SDR1 ___ ___ ___

- **Screening**[2/] = None, TX = TX Level, TXV = TXV Level, S = S Level
- **Package** ___ = Axial, SMS = Surface Mount Square Tab
- **Voltage**

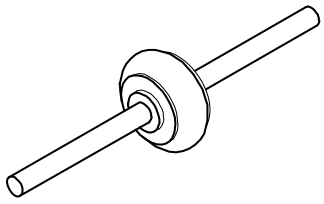
A = 50 V	K = 800 V
B = 100 V	M = 1000 V
D = 200 V	N = 1200 V
G = 400 V	
J = 600 V	

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[3/]
- Monolithic Single Chip Construction
- High Surge Rating
- Low Thermal Resistance
- Available in Surface Mount Versions (-US Suffix)
- TX, TXV, and S-Level Screening Available[2/]

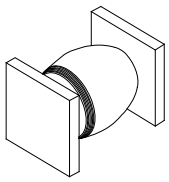
Maximum Ratings		Symbol	Value	Units
Peak Repetitive Reverse and DC Blocking Voltage	**1N6686 & 1N6686US** **1N6687 & 1N6687US**	V_{RRM} V_{RWM} V_R	100 200	**Volts**
Average Rectified Forward Current (Resistive Load, 60 Hz Sine Wave, T_A = 25ºC)		**Io**	20	**Amps**
Repetitive Peak Surge Current (8.3 ms Pulse, Half Sine Wave Superimposed on Io, Allow Junction to Reach Equilibrium Between Pulses, T_A = 25ºC)		I_{FSM}	375	**Amps**
Operating & Storage Temperature		**Top & Tstg**	-65 to +175	**ºC**
Maximum Thermal Resistance Junction to Leads, L = 3/8 " (1N6686 – 1N6687) Junction to End Tab (1N6686US – 1N6687US)		$R_{\theta JL}$ $R_{\theta JE}$	4 3.5	**ºC/W**

Notes:
1/ For Ordering Information, Price, Operating Curves, and Availability – Contact Factory.
2/ Screening Based on MIL-PRF-19500. Screening Flows Available on Request.
3/ PIND Testing not Required on Void Free Devices per MIL-PRF-19500.

Axial Leaded



SMS

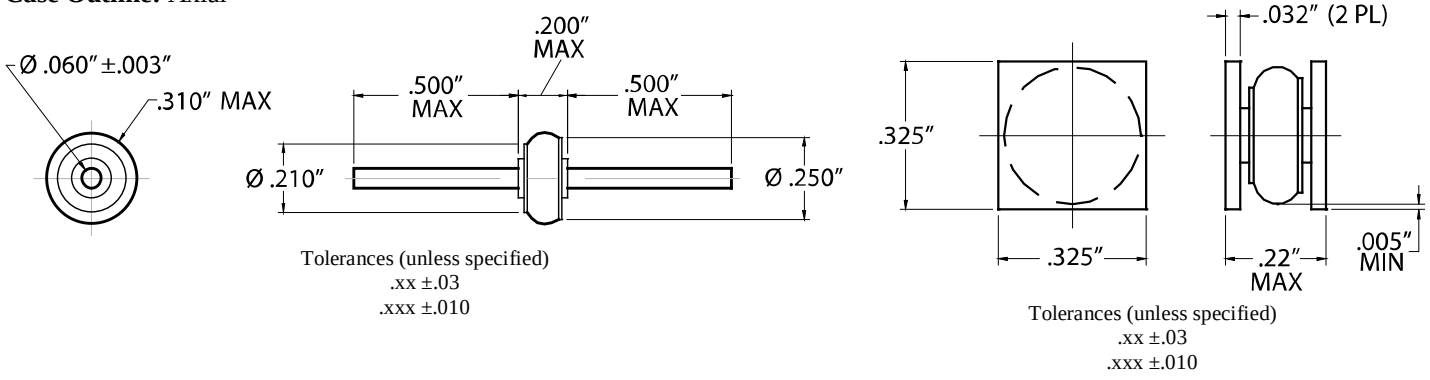


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Electrical Characteristics	Symbol	Max	Units
Instantaneous Forward Voltage Drop (I_F = 5 Adc, T_A = 25ºC, 300 µs pulse) (I_F = 20 Adc, T_A = 25ºC, 300 µs pulse) (I_F = 70 Adc, T_A = 25ºC, 300 µs pulse)	V_F	0.78 0.875 1.0	**Vdc**
Instantaneous Forward Voltage Drop (I_F = 5 Adc, T_A = -65ºC, 300 µs pulse)	V_F	1.0	**Vdc**
Reverse Leakage Current (Rated V_R, T_A = 25ºC, 300 µs pulse minimum)	I_R	50	**µA**
Reverse Leakage Current (Rated V_R, T_A = 100ºC, 300 µs pulse minimum)	I_R	10	**mA**
Junction Capacitance (V_R = 10 Vdc, T_A = 25ºC, f = 1MHz)	C_J	350	**pF**
Reverse Recovery Time **(**I_F = 500 mA, I_R = 1A, I_{RR} = 0.25A, T_A = 25ºC)	t_{rr}	40	**nsec**

Case Outline: Axial

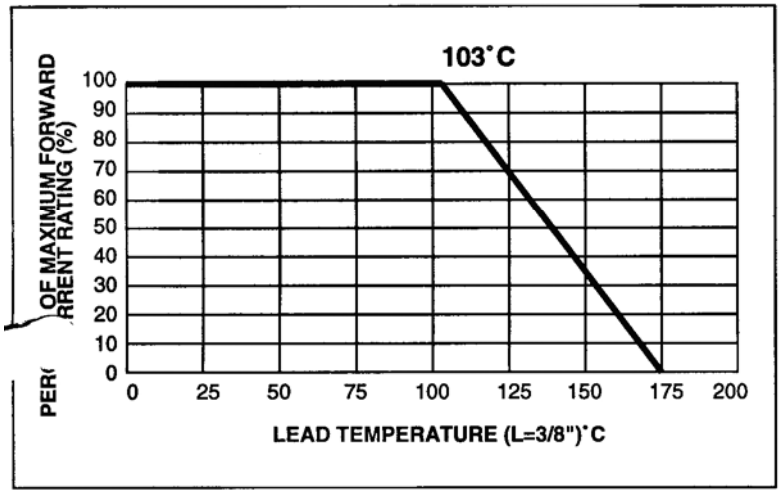


Tolerances (unless specified)
.xx ±.03
.xxx ±.010

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.xx ±.03
.xxx ±.010

TYPICAL OPERATING CURVES

TA=25˚C Unless otherwise specified



NOTE: All specifications are subject to change without notification. SCD's for these devices should be reviewed by SSDI prior to release.	**DATA SHEET #: RH0177B**	**DOC**