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

SDR100S20 thru SDR100S50

Designer's Data Sheet

Part Number/Ordering Information [1/]

SDR100S__ __ __

- **Screening** [2/]: __ = Not Screened; TX = TX Level; TXV = TXV Level; S = S Level
- **Pin Configuration** (See Table 1): __ = Normal (Cathode to Stud); R = Reverse (Anode to Stud)
- **Family/Voltage**: 20 = 200V; 30 = 300V; 40 = 400V; 50 = 500V

100 Amp STANDARD RECOVERY HIGH POWER RECTIFIER

200-500 Volt
5 µsec

Features:

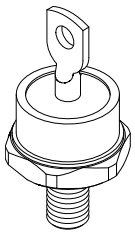
- **Low Reverse Leakage Current**
- **Single Chip Construction**
- **PIV to 500V**
- **Hermetically Sealed**
- **Low Thermal Resistance**
- **Higher Voltage Devices Up to 1KV Available***
- **Fast and Ultra Fast Recovery Versions Available***
- **For Reverse Polarity Add Suffix "R"**
- **TX, TXV, and S-Level Screening Available** [2/]

*Contact Factory

Maximum Ratings	Symbol	Value	Units
Peak Repetitive Reverse and DC Blocking Voltage — **SDR100S20** / **SDR100S30** / **SDR100S40** / **SDR100S50**	V_{RRM} / V_{RWM} / V_R	200 / 300 / 400 / 500	**Volts**
Average Rectified Forward Current (Resistive Load, 60 Hz Sine Wave, T_A = 25℃)	**Io**	100	**Amps**
Peak Surge Current (8.3 ms Pulse, Half Sine Wave, T_A = 25℃)	I_{FSM}	1000	**Amps**
Operating & Storage Temperature	T_{OP} & T_{STG}	-65 to +200	**ºC**
Maximum Total Thermal Resistance Junction to Case	$R_{\theta JC}$	0.85	**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.

DO-5



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SDR100S20 Thru SDR100S50

Electrical Characteristics		Symbol	Max	Typ	Units
Instantaneous Forward Voltage Drop (T_A = 25ºC, 300µs pulse)	I_F = 10Adc	V_{F1}	990	850	**mV_{DC}**
	I_F = 25Adc	V_{F2}	1100	900	
	I_F = 50Adc	V_{F3}	1200	950	
	I_F = 75Adc	V_{F4}	1250	990	
	I_F = 100Adc	V_{F5}	1325	1030	
Instantaneous Forward Voltage Drop (T_A = -55ºC, 300µs pulse)	I_F = 10Adc	V_{F6}	-	950	**mV_{DC}**
	I_F = 25Adc	V_{F7}	-	1000	
	I_F = 50Adc	V_{F8}	1290	1040	
	I_F = 75Adc	V_{F9}	-	1080	
	I_F = 100Adc	V_{F10}	1310	1110	
Instantaneous Forward Voltage Drop (T_A = 100ºC, 300µs pulse)	I_F = 10Adc	V_{F11}	-	750	**mV_{DC}**
	I_F = 25Adc	V_{F12}	-	815	
	I_F = 50Adc	V_{F13}	-	875	
	I_F = 75Adc	V_{F14}	-	930	
	I_F = 100Adc	V_{F15}	-	975	
Instantaneous Forward Voltage Drop (T_A = 125ºC, 300µs pulse)	I_F = 10Adc	V_{F16}	-	720	**mV_{DC}**
	I_F = 25Adc	V_{F17}	-	780	
	I_F = 50Adc	V_{F18}	1100	850	
	I_F = 75Adc	V_{F19}	-	900	
	I_F = 100Adc	V_{F20}	1250	950	
Instantaneous Forward Voltage Drop (T_A = 150ºC, 300µs pulse)	I_F = 10Adc	V_{F21}	-	680	**mV_{DC}**
	I_F = 25Adc	V_{F22}	-	750	
	I_F = 50Adc	V_{F23}	-	810	
	I_F = 75Adc	V_{F24}	-	870	
	I_F = 100Adc	V_{F25}	-	920	
Reverse Leakage Current (Rated V_R, T_A = 25ºC, 300µs pulse minimum)		I_{R1}	10	0.1	**µA**
Reverse Leakage Current (Rated V_R, T_A = 100ºC, 300µs pulse minimum)		I_{R2}	-	10	**µA**
Reverse Leakage Current (Rated V_R, T_A = 125ºC, 300µs pulse minimum)		I_{R3}	1000	25	**µA**
Reverse Leakage Current (Rated V_R, T_A = 150ºC, 300µs pulse minimum)		I_{R4}	-	75	**µA**
Reverse Recovery Time (I_F = 500mA, I_R = 1 Amp, I_{RR} = 250mA, T_A = 25ºC)		t_{RR}	3	5	**µsec**
Junction Capacitance (T_A = 25ºC, f = 1MHz)	V_R = 5V_{DC}	C_J	-	420	**pF**
	V_R = 10V_{DC}		450	330	

Table 1- PIN ASSIGNMENT

Code	Configuration	Terminal	Stud
—	Normal	Anode	Cathode
R	Reverse	Cathode	Anode

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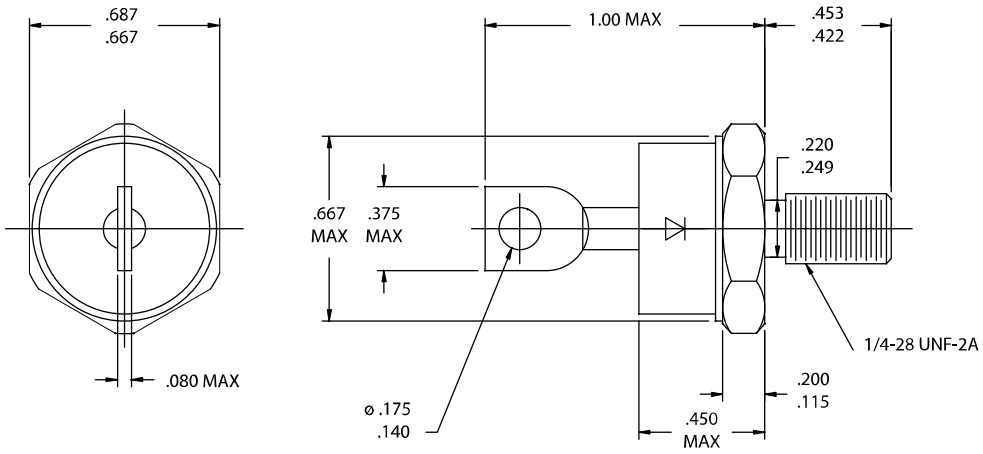
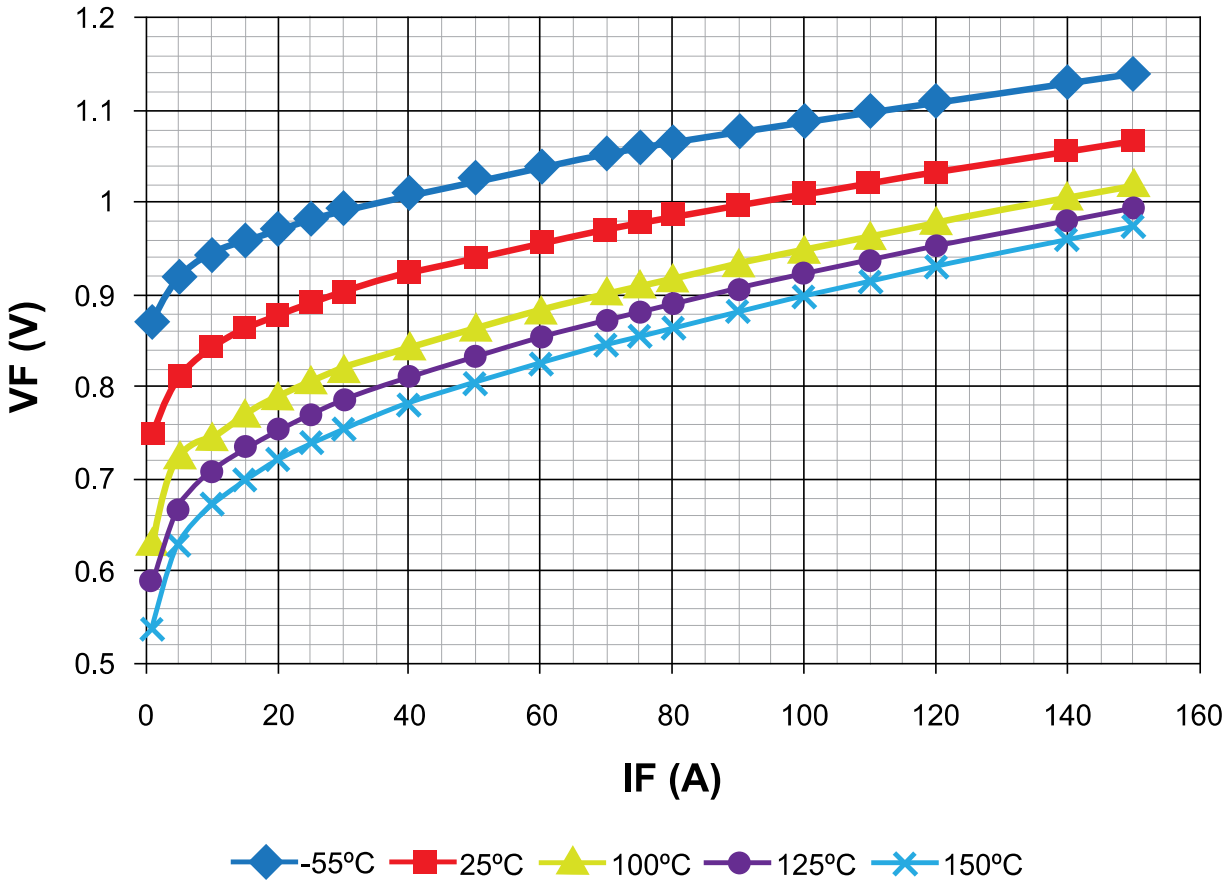
DO-5 Outline (Normal Pin Configuration Shown):





NOTE: All specifications are subject to change without notification. SCD's for these devices should be reviewed by SSDI prior to release.	**DATA SHEET #: RC0153A**	**DOC**