



Solid State Devices, Inc.

14701 Firestone Blvd * La Mirada, Ca 90638
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**SDR1P thru SDR1W
and
SDR1PSMS and SDR1WSMS**

**1 AMP
1300 — 1900 VOLTS
70 nsec ULTRA FAST RECTIFIER**

Designer's Data Sheet

Part Number/Ordering Information ^{1/}

SDR1 — — —

 L **Screening ^{2/}**
 — = Not Screened
 TX = TX Level
 TXV = TXV
 S = S Level

Package Type
 — = Axial Leaded
 SMS = Surface Mount Square Tab

Family -P = 1300 V
 -R = 1400 V
 -S = 1500 V
 -T = 1600 V
 -V = 1700 V
 -W = 1800 V

- FEATURES:**
- Ultra Fast Recovery: 70 ns Max @ 25°C ^{4/}
 - Single Chip Construction
 - PIV to 1800 Volts
 - Low Reverse Leakage Current
 - Hermetically Sealed
 - For High Efficiency Applications
 - Available in Axial and Surface Mount Versions
 - Metallurgically Bonded
 - TX, TXV, and S-Level Screening Available

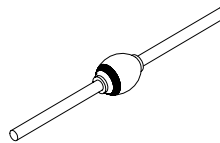
MAXIMUM RATINGS ^{3/}

RATING	SYMBOL	VALUE	UNIT
Peak Repetitive Reverse Voltage And DC Blocking Voltage	SDR1P and SDR1PSMS SDR1R and SDR1RSMS SDR1S and SDR1SSMS SDR1T and SDR1TSMS SDR1V and SDR1VSMS SDR1W and SDR1WSMS	V_{RRM} V_{RWM} V_R	1300 1400 1500 1600 1700 1800 Volts
Rectified Forward Current (Resistive Load, 60 Hz, Sine Wave, $T_A = 25^\circ C$)		I_O	1.0 Amp
Peak Surge Current (8.3 msec Pulse, Half Sine Wave Superimposed on I_O , allow junction to reach equilibrium between pulses, $T_A = 25^\circ C$)		I_{FSM}	20 Amps
Operating & Storage Temperature		T_{OP} and T_{STG}	-65 to +175 °C
Thermal Resistance, Junction to Lead, $L = 3/8"$ (Axial) Junction to End Tab (SMS)		$R_{\theta JL}$ $R_{\theta JE}$	35 28 °C/W

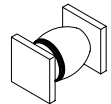
NOTES:

- 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, I_{RR} to .25 Amp.

Axial Lead



SMS



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

DATA SHEET #: RU0001D

DOC



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ELECTRICAL CHARACTERISTICS ^{3/}

CHARACTERISTICS	SYMBOL	VALUE	UNIT
Instantaneous Forward Voltage Drop ($I_F = 1 \text{ A dc}$, 300- 500 μs Pulse, $T_A = 25^\circ\text{C}$)	V_{F1}	3.60	Vdc
Instantaneous Forward Voltage Drop ($I_F = 1 \text{ A dc}$, 300- 500 μs Pulse, $T_A = -55^\circ\text{C}$)	V_{F2}	3.80	Vdc
Maximum Reverse Leakage Current (Rated V_R , 300 μs Pulse Minimum , $T_A = 25^\circ\text{C}$)	I_{R1}	5	μA
Maximum Reverse Leakage Current (Rated V_R , 300 μs Pulse Minimum , $T_A = 100^\circ\text{C}$)	I_{R2}	100	μA
Junction Capacitance ($V_R = 100\text{Vdc}$, $T_A = 25^\circ\text{C}$, $f = 1\text{MHz}$)	C_J	20	pf
Maximum Reverse Recovery Time ^{4/}	t_{rr}	70	ns

	DIMENSIONS				DIMENSIONS		
Axial Leaded Case Outline:	DIM.	MIN.	MAX.	Square Tab Surface Mount Case Outline:	DIM.	MIN.	MAX.
	A	.100"	.150"		A	.135"	.155"
	B	.125"	.200"		B	.175"	.250"
	C	.027"	.033"		C	.022"	.028"
	D	1.00"	---		D	.002"	---

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- 2/** Screened to MIL-PRF-19500.
- 3/** Unless Otherwise Specified, All Electrical Characteristics @25°C.

- 4/** Recovery Conditions: $I_F = 0.5 \text{ Amp}$, $I_R = 1.0 \text{ Amp}$, I_{RR} to .25 Amp.
- 5/** For information on operating curves, contact factory.