



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

SDR1-12 thru SDR1-16 and SDR1-12SMS and SDR1-16SMS

1.0 AMP
1200 — 1600 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 -12 = 1200 V

-14 = 1400 V

-16 = 1600 V

FEATURES:

- Ultra Fast Recovery: 70 ns Max @ 25°C ^{4/}
- Single Chip Construction
- PIV to 1600 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 ^{2/}
- Hyper Fast Versions available

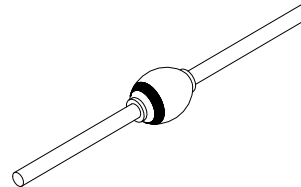
MAXIMUM RATINGS ^{3/}

RATING	SYMBOL	VALUE	UNIT
Peak Repetitive Reverse Voltage And DC Blocking Voltage	V_{RRM} V_{RWM} V_R	1200 1400 1600	Volts
Rectified Forward Current (Resistive Load, 60 Hz, Sine Wave, $T_A = 25^\circ\text{C}$)	I_O	1	Amp
Peak Surge Current (8.3 msec Pulse, Half Sine Wave Superimposed on I_O , allow junction to reach equilibrium between pulses, $T_A = 25^\circ\text{C}$)	I_{FSM}	25	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 18	°C/W

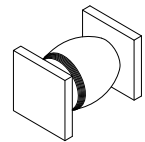
NOTES:

- 1/ For Ordering Information, Price, and Availability- Contact Factory.
- 2/ Screening Based on MIL-PRF-19500. Screening Flows Available on Request.
- 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 Leaded



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 #: RC0103B

DOC



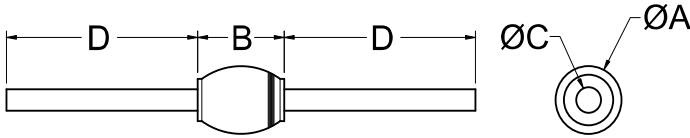
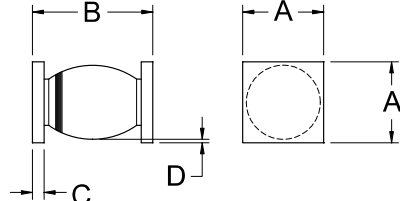
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 and
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ELECTRICAL CHARACTERISTICS ^{3/}

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}	2.90	Vdc
Instantaneous Forward Voltage Drop ($I_F = 1\text{A dc}$, 300- 500 μs Pulse, $T_A = -55^\circ\text{C}$)	V_{F2}	3.60	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}	.5	mA
Junction Capacitance ($V_R = 10\text{Vdc}$, $T_A = 25^\circ\text{C}$, $f = 1\text{MHz}$)	C_J	20	pf
Maximum Reverse Recovery Time ^{4/}	t_{rr}	70	ns

<p style="text-align: center;">Axial Leaded Case Outline ^{5/}:</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: center;">DIMENSIONS</th> </tr> <tr> <th style="text-align: center;">DIM.</th> <th style="text-align: center;">MIN.</th> <th style="text-align: center;">MAX.</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">A</td> <td style="text-align: center;">---</td> <td style="text-align: center;">.150"</td> </tr> <tr> <td style="text-align: center;">B</td> <td style="text-align: center;">---</td> <td style="text-align: center;">.190"</td> </tr> <tr> <td style="text-align: center;">C</td> <td style="text-align: center;">.027"</td> <td style="text-align: center;">.033"</td> </tr> <tr> <td style="text-align: center;">D</td> <td style="text-align: center;">.95"</td> <td style="text-align: center;">---</td> </tr> </tbody> </table> 	DIMENSIONS			DIM.	MIN.	MAX.	A	---	.150"	B	---	.190"	C	.027"	.033"	D	.95"	---	<p style="text-align: center;">Square Tab Surface Mount Case Outline ^{5/}:</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: center;">DIMENSIONS</th> </tr> <tr> <th style="text-align: center;">DIM.</th> <th style="text-align: center;">MIN.</th> <th style="text-align: center;">MAX.</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">A</td> <td style="text-align: center;">.134"</td> <td style="text-align: center;">.153"</td> </tr> <tr> <td style="text-align: center;">B</td> <td style="text-align: center;">.200"</td> <td style="text-align: center;">.280"</td> </tr> <tr> <td style="text-align: center;">C</td> <td style="text-align: center;">.022"</td> <td style="text-align: center;">.028"</td> </tr> <tr> <td style="text-align: center;">D</td> <td style="text-align: center;">.002"</td> <td style="text-align: center;">---</td> </tr> </tbody> </table> 	DIMENSIONS			DIM.	MIN.	MAX.	A	.134"	.153"	B	.200"	.280"	C	.022"	.028"	D	.002"	---
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- 5/** For information on operating curves, contact factory.