



Solid State Devices, Inc.

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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

SM = Surface Mount Round Tab

SMM = Surface Mount Mini

SMS = Surface Mount Square Tab

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

SDR1ASM, SMM, & SMS

thru

SDR1MSM, SMM, & SMS

1.0 AMPS

50 — 1000 VOLTS

50 – 70 nsec ULTRA FAST RECTIFIER

FEATURES:

- Ultra Fast Recovery: 50-70 ns Max @ 25°C ^{4/}
80-120 ns Max @ 100°C ^{4/}
- Single Chip Construction
- PIV to 1000 Volts (1200V Version available)
- Low Reverse Leakage Current
- Hermetically Sealed
- For High Efficiency Applications
- Available in Round, Mini, and Square Tab Versions
- Metallurgically Bonded
- TX, TXV, and S-Level Screening Available ^{2/}
- Hyper Fast Version available

MAXIMUM RATINGS ^{3/}

RATING	SYMBOL	VALUE	UNIT
Peak Repetitive Reverse Voltage And DC Blocking Voltage	SDR1A .. SDR1B .. SDR1D .. SDR1G .. SDR1J .. SDR1K .. SDR1M .. V_{RRM} V_{RWM} V_R	50 100 200 400 600 800 1000	Volts
Average 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 End Tab	SM SMM SMS $R_{\theta JE}$	28 45 35	°C/W

NOTES:

^{1/} For Ordering Information, Price, Operating Curves, and Availability-Contact Factory.

^{2/} Screened to MIL-PRF-19500.

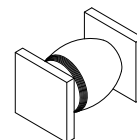
^{3/} Unless Otherwise Specified, All Electrical Characteristics @25°C.

^{4/} Recovery Conditions: $I_F = 0.5$ Amp, $I_R = 1.0$ Amp, I_{RR} to .25 Amp.

SM (Round Tab)

SMM (Mini)

SMS (Square Tab)



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

DATA SHEET #: RU0003D

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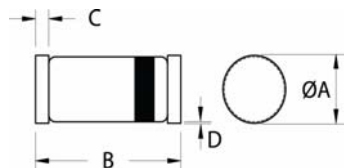
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**SDR1ASM, SMM, & SMS
thru
SDR1MSM, SMM, & SMS**

ELECTRICAL CHARACTERISTICS ^{3/}

CHARACTERISTICS		SYMBOL	Maximum Limit			UNIT
			Package SMM	SM	SMS	
Instantaneous Forward Voltage Drop ($I_F = 1\text{A}$ dc, 300 μs Pulse, $T_A = 25^\circ\text{C}$)	SDR1A .. thru SDR1D ..	V_{F1}	0.96	1.3	0.96	Vdc
	SDR1G .. thru SDR1J ..		2.7	1.3	1.3	
	SDR1K .. thru SDR1M ..		2.7	2.5	1.9	
Instantaneous Forward Voltage Drop ($I_F = 1\text{A}$ dc, 300 μs Pulse, $T_A = -55^\circ\text{C}$)	SDR1A .. thru SDR1D ..	V_{F2}	1.05	1.45	2.1	Vdc
	SDR1G .. thru SDR1J ..		2.85	1.45	2.1	
	SDR1K .. thru SDR1M ..		2.85	2.65	2.3	
Reverse Leakage Current (Rated V_R , 300 μs Pulse Minimum, $T_A = 25^\circ\text{C}$)	SDR1A .. thru SDR1D ..	I_{R1}	5			μA
	SDR1G .. thru SDR1J ..					
	SDR1K .. thru SDR1M ..					
Reverse Leakage Current (Rated V_R , 300 μs Pulse Minimum, $T_A = 100^\circ\text{C}$)	SDR1A .. thru SDR1D ..	I_{R2}	250			μA
	SDR1G .. thru SDR1J ..					
	SDR1K .. thru SDR1M ..					
Junction Capacitance ($V_R = 10\text{Vdc}$, $T_A = 25^\circ\text{C}$, $f = 1\text{MHz}$)	SDR1A .. thru SDR1D ..	C_J	20	15	40	pf
	SDR1G .. thru SDR1J ..		10	15	25	
	SDR1K .. thru SDR1M ..		10	10	15	
Reverse Recovery Time ^{4/}	SDR1A .. thru SDR1D ..	t_{rr}	50		50	ns
	SDR1G .. thru SDR1J ..			60	60	
	SDR1K .. thru SDR1M ..		70	70	70	

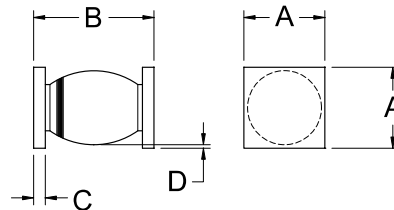
Round Tab Surface Mount (SM):



DIMENSIONS

DIM.	MIN.	MAX.
A	.095"	.105"
B	.190"	.210"
C	.010"	.030"
D	---	---

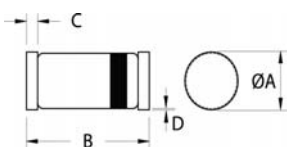
Square Tab Surface Mount (SMS) :



DIMENSIONS

DIM.	MIN.	MAX.
A	.134"	.153"
B	.200"	.280"
C	.022"	.028"
D	.002"	---

Mini (SMM):



DIMENSIONS

DIM.	MIN.	MAX.
A	.075"	.085"
B	.135"	.145"
C	.010"	.030"
D	---	---

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