



Solid State Devices, Inc.

14701 Firestone Blvd * La Mirada, Ca 90638
Phone: (562) 404-4474 * Fax: (562) 404-1773
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SDR1ASM, SMM, & SMS thru SDR1MSM, SMM, & SMS

1.0 AMPS
50 – 1000 VOLTS
50 – 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
 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

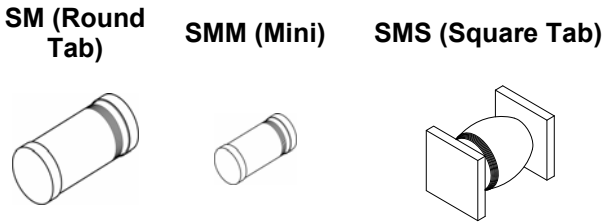
- FEATURES:**
- Ultra Fast Recovery: 50-70 ns Max @ 25°C^{4/}
80-120 ns Max @ 100°C^{4/}
 - Single Chip Construction
 - PIV to 1000 Volts (1200V Version available)
 - Low Reverse Leakage Current
 - Hermetically Sealed
 - For High Efficiency Applications
 - Available in Round, Mini, and Square Tab Versions
 - 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 ..	V_{RRM} V_{RWM} V_R	50	Volts
	SDR1B ..		100	
	SDR1D ..		200	
	SDR1G ..		400	
	SDR1J ..		600	
	SDR1K ..		800	
	SDR1M ..		1000	
Average Rectified Forward Current (Resistive Load, 60 Hz, Sine Wave, T _A = 25°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°C)		I_{FSM}	25	Amps
Operating & Storage Temperature		T _{OP} and T _{STG}	-65 to +175	°C
Thermal Resistance, Junction to End Tab	SM	$R_{\theta JE}$	28	°C/W
	SMM		45	
	SMS		35	

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/ 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.





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

ELECTRICAL CHARACTERISTICS ^{3/}				Maximum Limit			
CHARACTERISTICS		SYMBOL	Package			UNIT	
			SMM	SM	SMS		
Instantaneous Forward Voltage Drop ($I_F = 1A_{dc}$, 300 μs Pulse, $T_A = 25^\circ C$)	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 ($I_F = 1A_{dc}$, 300 μs Pulse, $T_A = -55^\circ C$)	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 , $T_A = 25^\circ C$)	SDR1A .. thru SDR1D ..	I_{R1}	5			μA	
	SDR1G .. thru SDR1J ..						
	SDR1K .. thru SDR1M ..						
Reverse Leakage Current (Rated V_R , 300 μs Pulse Minimum , $T_A = 100^\circ C$)	SDR1A .. thru SDR1D ..	I_{R2}	250			μA	
	SDR1G .. thru SDR1J ..						
	SDR1K .. thru SDR1M ..						
Junction Capacitance ($V_R = 10V_{dc}$, $T_A = 25^\circ C$, $f = 1MHz$)	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			Square Tab Surface Mount (SMS) :	DIMENSIONS		
	DIM.	MIN.	MAX.		DIM.	MIN.	MAX.
	A	.095"	.105"		A	.134"	.153"
	B	.190"	.210"		B	.200"	.280"
	C	.010"	.030"		C	.022"	.028"
	D	---	---		D	.002"	---
Mini (SMM):	DIMENSIONS						
	DIM.	MIN.	MAX.				
	A	.075"	.085"				
	B	.135"	.145"				
	C	.010"	.030"				
	D	---	---				