



**Solid State Devices, Inc.**

14701 Firestone Blvd \* La Mirada, Ca 90638  
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**SDR1DHF & SDR1DHFSMS  
 thru  
 SDR1NHF & SDR1NHFSMS**

**1 AMP, 200 - 1200 VOLTS  
 35 nsec**

**Hyper Fast Recovery Rectifier**

**Designer's Data Sheet**

**Part Number/Ordering Information <sup>1/</sup>**

**SDR1**    \_ \_ \_

**L Screening <sup>2/</sup>**

- = Not Screened
- TX = TX Level
- TXV = TXV
- S = S Level

**L Package Type**

- = Axial Leaded
- SMS = Surface Mount Square Tab

**L Voltage/Family**

- DHF = 200V                      KHF = 800V
- GHF = 400V                    MHF = 1000V
- JHF = 600V                    NHF = 1200V

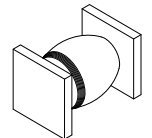
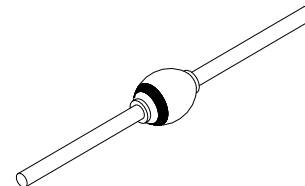
**FEATURES:**

- Hyper Fast Recovery: 35 nsec maximum
- Improved  $V_F$  over previous version
- PIV up to 1200 Volts
- Hermetically Sealed
- Void Free Single Chip Construction
- For High Efficiency Applications
- Low Reverse Leakage
- TX, TXV, and Space Level Screening Available<sup>2/</sup>
- Avalanche Breakdown Guaranteed
- Hyper Fast Recovery Replacement for 1N6620-1N6625

MAXIMUM RATINGS		Symbol	Value	Units
Peak Repetitive Reverse Voltage and DC Blocking Voltage	SDR1DHF	$V_{RRM}$ $V_{RWM}$ $V_R$	200	Volts
	SDR1GHF		400	
	SDR1JHF		600	
	SDR1KHF		800	
	SDR1MHF		1000	
	SDR1NHF		1200	
Average Rectified Forward Current (Resistive Load, 60 Hz, Sine Wave, $T_A = 25^\circ\text{C}$ )		$I_O$	1.0	Amps
Peak Surge Current @ $T_A = 25^\circ\text{C}$ (8.3 ms Pulse, Half Sine Wave or equivalent Square Wave)		SDR1DHF - SDR1JHF SDR1KHF - SDR1NHF	$I_{FSM}$ 25 7	Amps
Operating and Storage Temperature		$T_{OP}$ & $T_{stg}$	-65 to +175	$^\circ\text{C}$
Maximum Thermal Resistance Junction to Lead, $L = 0.375"$ (Axial Lead) Junction to End Tab (Surface Mount)		$R_{\theta JL}$ $R_{\theta JE}$	45 28	$^\circ\text{C/W}$

Axial Leaded ( \_ )

Square Tab Surface Mount (SMS)



**NOTES:**

- <sup>1/</sup> For ordering information, price, and availability - contact factory.
- <sup>2/</sup> Screening based on MIL-PRF-19500. Screening flows available on request.



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**SDR1DHF & SDR1DHFSMS  
 thru  
 SDR1NHF & SDR1NHFSMS**

ELECTRICAL CHARACTERISTICS		Symbol	Min	Max	Unit
Instantaneous Forward Voltage Drop ( $I_F = 1$ Amps, $T_A = 25^\circ\text{C}$ , Pulsed)	SDR1DHF – SDR1JHF	$V_{F1}$	—	1.5	Volts
	SDR1KHF		—	1.9	
	SDR1MHF – SDR1NHF		—	2.9	
Instantaneous Forward Voltage Drop ( $I_F = 1$ Amps, $T_A = -55^\circ\text{C}$ , Pulsed)	SDR1DHF – SDR1JHF	$V_{F2}$	—	2.2	Volts
	SDR1KHF		—	2.6	
	SDR1MHF – SDR1NHF		—	3.6	
Reverse Leakage Current (At Rated $V_R$ , pulsed)	$T_A = 25^\circ\text{C}$	$I_{R1}$	—	5.0	$\mu\text{A}$
	$T_A = 100^\circ\text{C}$	$I_{R2}$	—	200	
Reverse Recovery Time ( $I_F = 500$ mA, $I_R = 1$ A, $I_{RR} = 250$ mA, $T_A = 25^\circ\text{C}$ )		$t_{rr}$	—	35	ns
Junction Capacitance ( $V_R = 10$ V <sub>DC</sub> , $T_A = 25^\circ\text{C}$ , $f = 1$ MHz)		$C_J$	—	20	pF

**Case Outline: (Axial)**

DIM	MIN	MAX
A	—	0.150"
B	—	0.190"
C	0.027"	0.033"
D	0.950"	—

**Case Outline: (SMS)**

DIM	MIN	MAX
A	0.134"	0.153"
B	0.200"	0.280"
C	0.022"	0.028"
D	0.002"	—

**Note: Dimensions prior to soldering.**