



# Solid State Devices, Inc.

14701 Firestone Blvd \* La Mirada, Ca 90638  
Phone: (562) 404-4474 \* Fax: (562) 404-1773  
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## SDR950M & Z Thru SDR952M & Z

### 50A, 35nsec typ., 100-200 V Hyper Fast Rectifier

### Designer's Data Sheet

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

SDR950

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+ Screening <sup>2/</sup> \_\_\_ = Not Screened  
TX = TX Level  
TXV = TXV Level  
S = S Level

+ Leg Bend Option  
(See Figure 1)

+ Package M = TO-254, Z = TO-254Z

#### Features:

- Hyper Fast Recovery: 50nsec Maximum <sup>3/</sup>
- High Surge Rating
- Low Reverse Leakage Current
- Low Junction Capacitance
- Hermetically Sealed Package
- Gold Eutectic Die Attach
- Ultrasonic Aluminum Wire Bonds
- Higher Voltages and Faster Recovery Times Available, Contact Factory
- Ceramic Seal for Improved Hermeticity Available
- TX, TXV, and S-Level Screening Available <sup>2/</sup>

Maximum Ratings		Symbol	Value	Units
Peak Repetitive Reverse Voltage	SDR950M & Z	$V_{RRM}$	100	Volts
	SDR951M & Z	$V_{RWM}$	150	
	SDR952M & Z	$V_R$	200	
Average Rectified Forward Current (Resistive Load, 60 Hz Sine Wave, $T_A = 25^\circ\text{C}$ ) <sup>5/</sup>		$I_o$	50	Amps
Peak Surge Current (8.3 ms Pulse, Half Sine Wave, or equivalent DC) <sup>4/</sup>		$I_{FSM}$	350	Amps
Operating & Storage Temperature		$T_{OP}$ & $T_{STG}$	-65 to +200	$^\circ\text{C}$
Maximum Total Thermal Resistance Junction to Case <sup>4/</sup>		$R_{qJC}$	0.85	$^\circ\text{C/W}$

#### Notes:

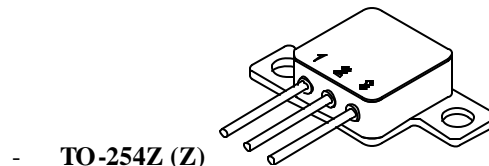
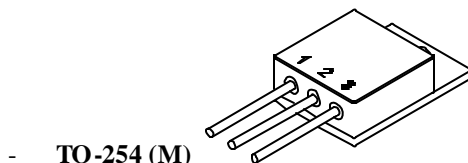
1/ For ordering information, Price, Operating Curves, and Availability- Contact Factory.

2/ Screened to MIL-PRF-19500.

3/ Recovery Conditions:  $I_F = 10$  Amp,  $di/dt = 200A/\mu s$

4/ Pins 2 and 3 Tied Together.

5/  $T_C = 150^\circ\text{C}$ , Derate to 0A @  $200^\circ\text{C}$ .



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

DATA SHEET #: RH0039K

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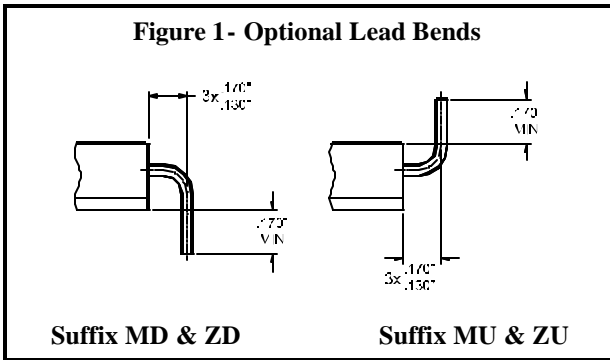


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**SDR950M & Z**  
**Thru**  
**SDR952M & Z**

Electrical Characteristics	Symbol	Max	Units
<b>Instantaneous Forward Voltage Drop</b> ( $I_F = 25A, 300-500\mu\text{sec Pulse}$ ) ( $I_F = 50A, 300-500\mu\text{sec Pulse}$ )	$T_A = 25\text{ }^\circ\text{C}$ $V_{F1}$	1.00	$V_{DC}$
	$T_A = 25\text{ }^\circ\text{C}$ $V_{F2}$	1.25	
<b>Instantaneous Forward Voltage Drop</b> ( $I_F = 50A_{dc}, 300-500\mu\text{sec Pulse}$ )	$T_A = -55\text{ }^\circ\text{C}$ $V_{F3}$	1.35	$V_{DC}$
<b>Reverse Leakage Current</b> (300 $\mu\text{sec Pulse Minimum}$ )	$T_A = 25\text{ }^\circ\text{C, Rated } V_R$ $I_{R1}$	100	<b>mA</b>
	$T_C = 100\text{ }^\circ\text{C, 80% of Rated } V_R$ $I_{R2}$	10	<b>mA</b>
<b>Reverse Recovery Time</b> ( $I_F = 10\text{ Amp, } di/dt = 200A/\mu\text{s}$ )	$t_{RR}$	50	<b>nsec</b>
<b>Junction Capacitance</b> ( $V_R = 10V_{DC}, T_A = 25^\circ\text{C, } f = 1\text{MHz}$ )	$C_J$	900	<b>pF</b>



PIN ASSIGNMENT				
Code	FUNCTION	Pin 1	Pin 2	Pin 3
		Cathode	Anode	Anode

