



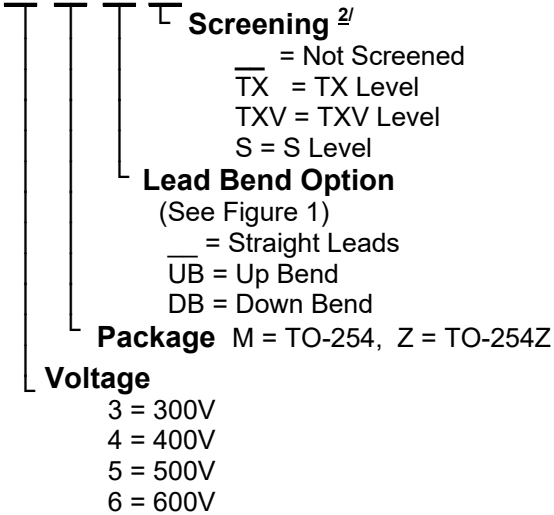
# Solid State Devices, Inc.

14701 Firestone Blvd \* La Mirada, Ca 90638  
Phone: (562) 404-4474 \* Fax: (562) 404-1773  
ssdi@ssdi-power.com \* www.ssdi-power.com

## Designer's Data Sheet

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

SDR95



# SDR953M & Z Thru SDR956M & Z

## 50 Amp Hyper Fast Rectifier 300 - 600 Volts, 35 nsec

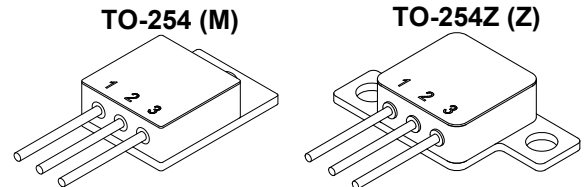
### Features:

- Hyper Fast Recovery: 35 nsec Maximum <sup>3/</sup>
- High Surge Rating
- Low Reverse Leakage Current
- Low Junction Capacitance
- Hermetically Sealed Low Profile Package
- Gold Eutectic Die Attach Available
- 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 And DC Blocking Voltage	SDR953M & Z	$V_{RRM}$ $V_{RWM}$ $V_R$	300	V
	SDR954M & Z		400	
	SDR955M & Z		500	
	SDR956M & Z		600	
Average Rectified Forward Current (Resistive Load, 60 Hz Sine Wave, $T_A = 25^\circ\text{C}$ )		$I_o$	50	A
Peak Surge Current <sup>5/</sup> (8.3 ms Pulse, Half Sine Wave, or equivalent DC) <sup>4/</sup>		$I_{FSM}$	450	A
Operating & Storage Temperature		$T_{OP}$ & $T_{STG}$	-65 to +200	$^\circ\text{C}$
Maximum Total Thermal Resistance Junction to Case		$R_{\theta JC}$	1.2	$^\circ\text{C/W}$

### 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/ Recovery conditions:  $I_F = .5$  Amp,  $I_R = 1\text{A}$ ,  $I_{RR} = .25\text{A}$ .
- 4/ Pins 2 and 3 tied together.
- 5/ Available with higher surge ratings.



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

**DATA SHEET #: RH0029J**

**DOC**



**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

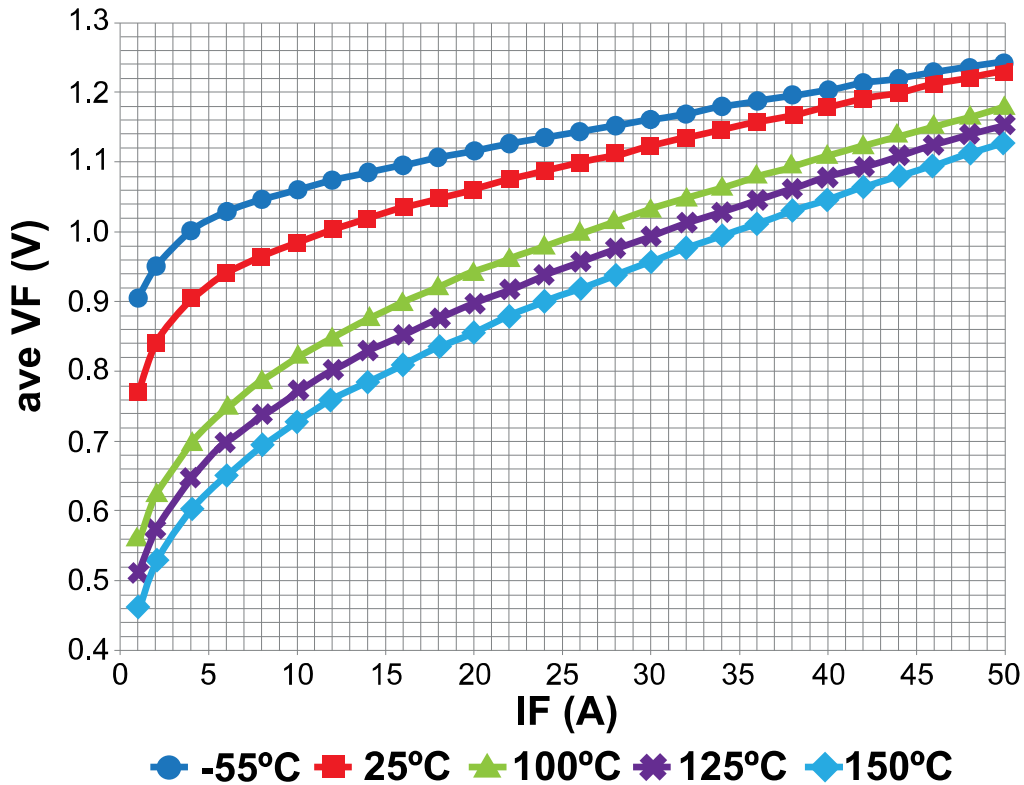
# SDR953M & Z

Thru

# SDR956M & Z

Electrical Characteristics	Symbol	Max	Units
<b>Instantaneous Forward Voltage Drop</b> <sup>A/</sup> (I <sub>F</sub> = 25 A, Pulse) (I <sub>F</sub> = 50 A, Pulse)	T <sub>A</sub> = 25°C <b>V<sub>F1</sub></b>	1.30	<b>V<sub>DC</sub></b>
	T <sub>A</sub> = 25°C <b>V<sub>F2</sub></b>	1.65	
<b>Instantaneous Forward Voltage Drop</b> <sup>A/</sup> (I <sub>F</sub> = 25 Adc, Pulse)	T <sub>A</sub> = -55°C <b>V<sub>F3</sub></b>	1.4	<b>V<sub>DC</sub></b>
	T <sub>A</sub> = 100°C <b>V<sub>F4</sub></b>	1.2	
<b>Reverse Leakage Current</b>	T <sub>A</sub> = 25°C, Rated V <sub>R</sub> , Pulse <b>I<sub>R1</sub></b>	200	<b>μA</b> <b>mA</b>
	T <sub>A</sub> = 100°C, 80% Rated V <sub>R</sub> , Pulse <b>I<sub>R2</sub></b>	10	
<b>Reverse Recovery Time</b> (I <sub>F</sub> = .5 A, I <sub>R</sub> = 1 A, I <sub>RR</sub> = .25 A)	T <sub>A</sub> = 25°C <b>t<sub>RR</sub></b>	35	<b>nsec</b>
<b>Junction Capacitance</b> (V <sub>R</sub> = 10 V <sub>DC</sub> , T <sub>A</sub> = 25°C, f = 1 MHz)	<b>C<sub>J</sub></b>	250	<b>pF</b>

### SDR956M/Z Series



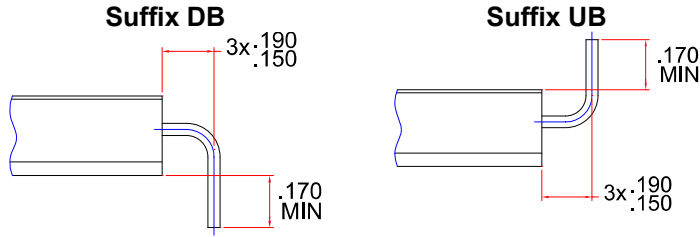


**Solid State Devices, Inc.**

14701 Firestone Blvd \* La Mirada, CA 90638  
 Phone: (562) 404-4474 \* Fax: (562) 404-1773  
 ssdi@ssdi-power.com \* www.ssdi-power.com

# SDR953M & Z Thru SDR956M & Z

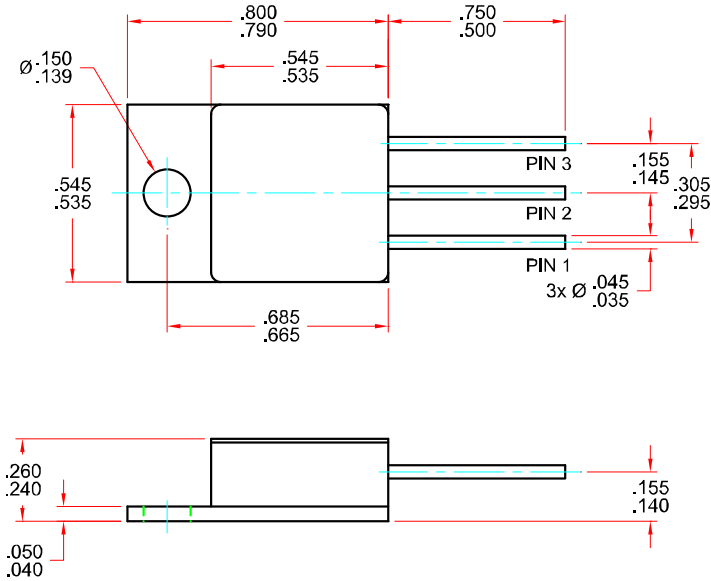
**Figure 1- Optional Lead Bends**



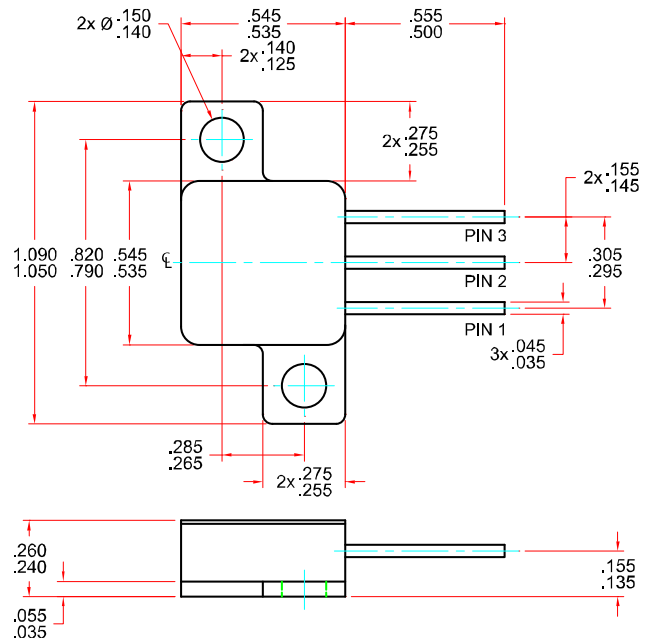
**PIN ASSIGNMENT  
 (TO-254 and TO-254Z)**

Code	FUNCTION	Pin 1	Pin 2	Pin 3
		Cathode	Anode	Anode

**TO-254 (Suffix M) Outline:**



**TO-254Z (Suffix Z) Outline:**



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

**DATA SHEET #: RH0029J**

**DOC**