



Solid State Devices, Inc.

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SDR950M & Z thru SDR952M & Z

Designer's Data Sheet

Part Number/Ordering Information^{1/}

SDR95

Screening^{2/}

— = Not Screened

TX = TX Level

TXV = TXV Level

S = S Level

Leg Bend Option

(See Figure 1)

Package

M = TO-254, Z = TO-254Z

Voltage

0 = 100 Volts

1 = 150 Volts

2 = 200 Volts

**50 Amp, 100 - 200 Volts,
45 nsec typ.
Ultrafast Rectifier**

Features:

- Ultrafast Recovery: 55 nsec Maximum
- 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^{2/}

Maximum Ratings ^{3/}	Symbol	Value	Unit
Peak Repetitive Reverse Voltage SDR950M & Z SDR951M & Z SDR952M & Z	V_{RRM} V_{RWM} V_R	100 150 200	V
Average Rectified Forward Current^{4/} (Resistive Load, 60 Hz Sine Wave, $T_A = 25^\circ\text{C}$)	I_o	50	A
Peak Surge Current (8.3 ms Pulse, Half Sine Wave, or equivalent DC)	I_{FSM}	350	A
Operating & Storage Temperature	$T_{OP} \text{ \& } T_{STG}$	-65 to +200	$^\circ\text{C}$
Maximum Total Thermal Resistance Junction to Case	$R_{\theta JC}$	0.85	$^\circ\text{C/W}$

Notes: *Pulsed per MIL-STD-750.

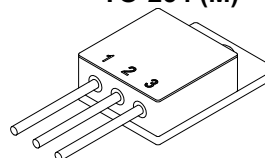
1/ For ordering information, price, operating curves, and availability-Contact factory.

2/ Screening based on MIL-PRF-19500. Screening flows available on request.

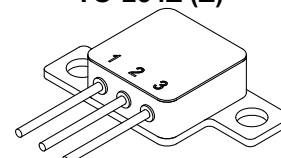
3/ Pins 2 and 3 tied together.

4/ $T_C = 150^\circ\text{C}$, derate to 0 A @ 200°C .

TO-254 (M)



TO-254Z (Z)



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

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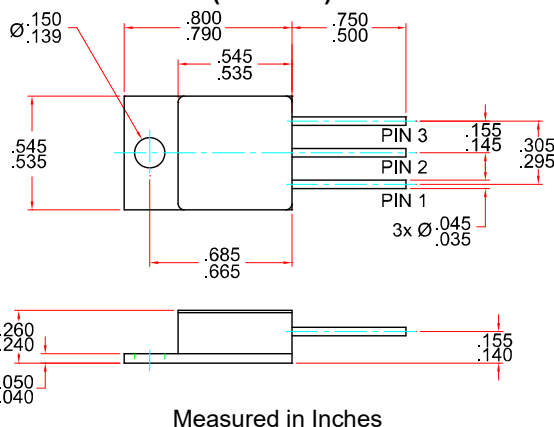
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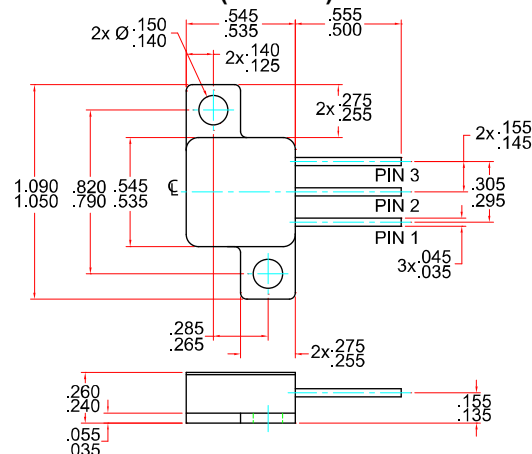
SDR950M & Z thru SDR952M & Z

Electrical Characteristics		Symbol	Typ	Max	Unit
Instantaneous Forward Voltage Drop $T_A = 25^\circ\text{C}$, Pulsed	$I_F = 10\text{ A}$	V_{F1}	0.77	0.88	V_{DC}
	$I_F = 25\text{ A}$	V_{F2}	0.90	1.00	
	$I_F = 50\text{ A}$	V_{F3}	1.04	1.25	
Instantaneous Forward Voltage Drop $T_A = 125^\circ\text{C}$, Pulsed	$I_F = 10\text{ A}$	V_{F4}	0.62	0.73	V_{DC}
	$I_F = 25\text{ A}$	V_{F5}	0.77	0.88	
	$I_F = 50\text{ A}$	V_{F6}	0.92	1.03	
Instantaneous Forward Voltage Drop $T_A = -55^\circ\text{C}$, Pulsed	$I_F = 10\text{ A}$	V_{F7}	0.91	1.05	V_{DC}
	$I_F = 25\text{ A}$	V_{F8}	1.02	1.15	
	$I_F = 50\text{ A}$	V_{F9}	1.14	1.30	
Reverse Leakage Current Pulsed	$T_A = 25^\circ\text{C}$, Rated V_R	I_{R1}	0.1	1	μA
	$T_C = 100^\circ\text{C}$, Rated V_R	I_{R2}	5.0	-	μA
	$T_C = 125^\circ\text{C}$, Rated V_R	I_{R3}	20.0	100	μA
Reverse Recovery Time	$I_F = 5\text{ A}$, $I_R = 1\text{ A}$, $I_{RR} = .25\text{ A}$	t_{RR1}	45	55	nsec
	$I_F = 10\text{ A}$, $dI_F/dt = 100\text{ A}/\mu\text{s}$	t_{RR2}	65	-	
Junction Capacitance, $T_A = 25^\circ\text{C}$		C_J	800	900	pF
		$V_R = 10\text{ V}_{DC}$, $f = 1\text{ MHz}$			

TO-254 (Suffix M) Outline:



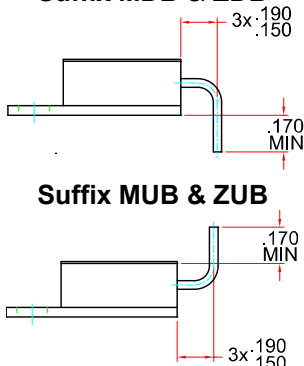
TO-254Z (Suffix Z) Outline:



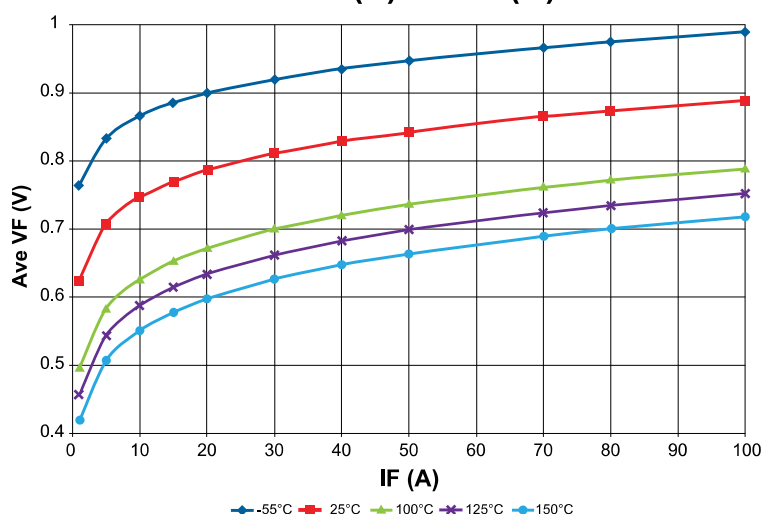
PIN ASSIGNMENT

PIN 1	PIN 2	PIN 3
Cathode	Anode	Anode

**Figure 1- Optional Lead Bends
Suffix MDB & ZDB**



Ave VF (V) vs. IF (A)



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