



# Solid State Devices, Inc.

14830 Valley View Blvd \* La Mirada, Ca 90638

Phone: (562) 404-7855 \* Fax: (562) 404-1773

ssdi@ssdi-power.com \* www.ssdi-power.com

# SDR3006 series

## 30A 80nsec 400 to 600 V Ultrafast Rectifier

**DESIGNER'S DATA SHEET**

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

**SDR30**

**Screening**           = Not Screened  
                          TX = TX Level  
                          TXV = TXV  
                          S = S Level

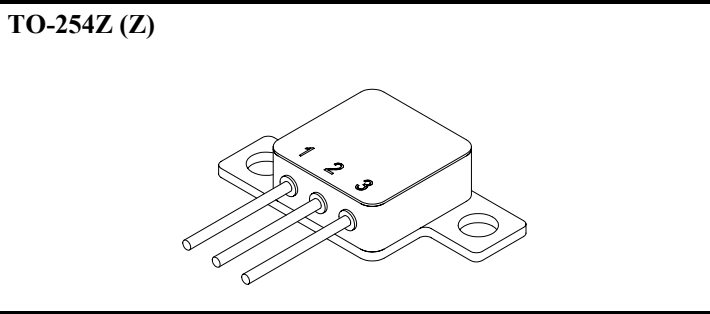
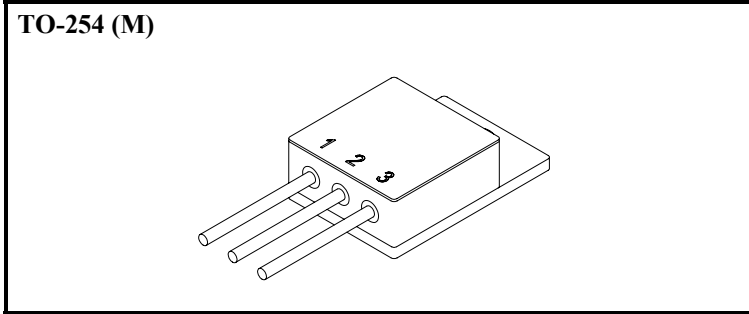
**Package**            M = TO-254  
                                  Z = TO-254Z

**Configuration**    n/a (ultrafast family)

**Voltage**            04 = 400 V  
                                  05 = 500 V  
                                  06 = 600 V

- Features:**
- Ultrafast Recovery: 100nsec Maximum
  - High Surge Rating
  - Low Reverse Leakage Current
  - Low Junction Capacitance
  - Hermetically Sealed, Isolated Package providing enhanced thermal performance
  - Eutectic Die Attach
  - TX, TXV, and S Level Screening iaw MIL-PRF-19500 Available
  - hyperfast version available as SDR3006HF

Maximum Ratings		Symbol	Value	Units
<b>Peak Repetitive Reverse Voltage</b>	SDR3004	$V_{RRM}$	400	Volts
	SDR3005		500	
	SDR3006		600	
<b>Average Rectified Forward Current</b> (Resistive Load, 60 Hz Sine Wave, $T_C = 100\text{ }^\circ\text{C}$ )	Total	$I_o$	30	Amps
<b>Peak Surge Current</b> (8.3 ms Pulse, Half Sine Wave, $T_A = 25\text{ }^\circ\text{C}$ )		$I_{FSM}$	500	Amps
<b>Operating &amp; Storage Temperature</b>		$T_{OP}$ & $T_{STG}$	-65 to +200	$^\circ\text{C}$
<b>Maximum Total Thermal Resistance</b> Junction to Case		$R_{\theta JC}$	1.2 (0.9 typ)	$^\circ\text{C/W}$



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

**DATA SHEET #: RC0090A**

**DOC**



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# SDR3006 Series

Electrical Characteristic		Symbol	Min	Max	Units
Instantaneous Forward Voltage Drop ( $T_A = 25^\circ\text{C}$ , 300 – 500 $\mu\text{sec}$ Pulse)	$I_F = 15\text{A}$	$V_{F1}$	—	1.20	$V_{DC}$
	$I_F = 30\text{A}$	$V_{F2}$	—	1.40	
Instantaneous Forward Voltage Drop ( $I_F = 15\text{A}$ , 300 – 500 $\mu\text{sec}$ Pulse)	$T_A = -55^\circ\text{C}$	$V_{F3}$	—	1.30	$V_{DC}$
	$T_A = 100^\circ\text{C}$	$V_{F4}$	—	1.10	
Reverse Leakage Current (100% of rated $V_R$ , 300 $\mu\text{s}$ pulse min.)	$T_A = 25^\circ\text{C}$	$I_{R1}$	—	25	$\mu\text{A}$
	$T_A = 100^\circ\text{C}$	$I_{R2}$	—	2000	
Reverse Recovery Time ( $I_F = 0.5\text{A}$ , $I_R = 1\text{A}$ , $I_{RR} = 0.25\text{A}$ , $T_A = 25^\circ\text{C}$ )		$t_{RR}$	—	80 (typ 65)	nsec
Junction Capacitance ( $V_R = 10V_{DC}$ , $T_A = 25^\circ\text{C}$ , $f = 1\text{MHz}$ )		$C_J$	—	120 (typ 85)	pF

**NOTES:**

1/ For Ordering Information, Price, and Availability Contact Factory.

**Available Part Numbers:**

SDR3004M, SDR3004Z

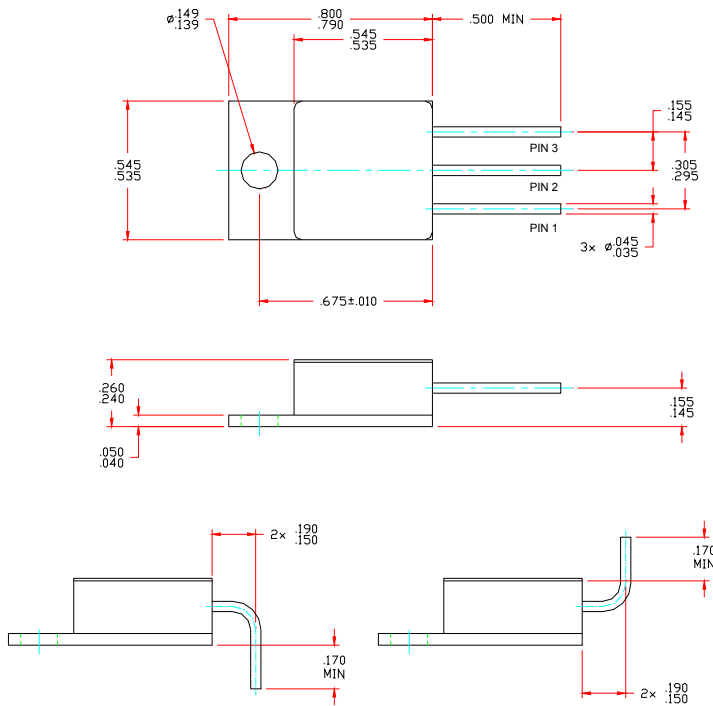
SDR3005M, SDR3005Z

SDR3006M, SDR3006Z

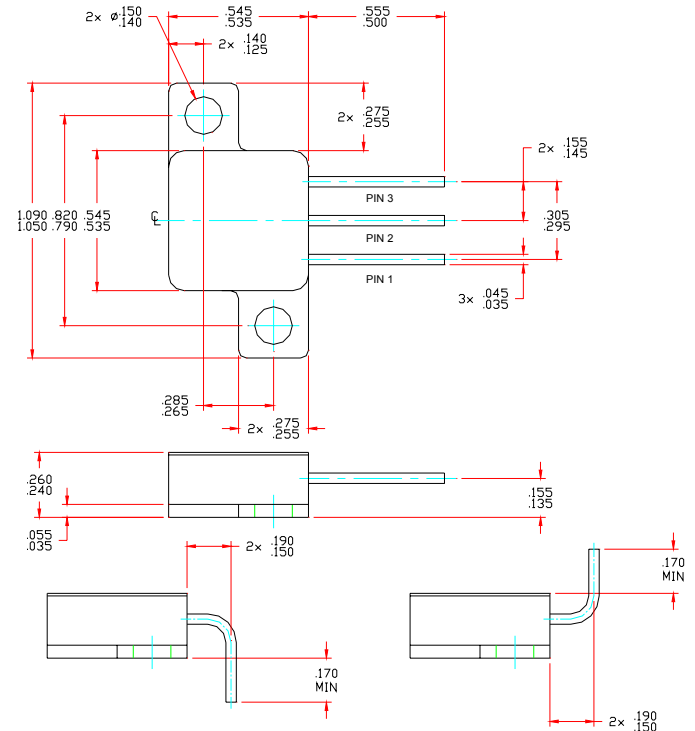
**PIN ASSIGNMENT**

PACKAGE	Pin 1	Pin 2	Pin 3
TO-254 (M)	Cathode	Anode	Anode
TO-254Z (Z)	Cathode	Anode	Anode

**TO-254:**



**TO-254Z:**



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