



PRELIMINARY

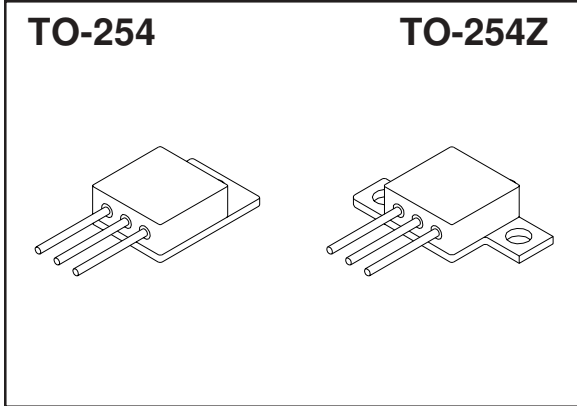
**SOLID STATE DEVICES, INC.**  
14005 Stage Road \* Santa Fe Springs, Ca 90670  
Phone: (562) 404-4474 \* Fax: (562) 404-1773

# SDR656CTM & Z

## Designer's Data Sheet

**40AMPS  
600 VOLTS  
30 nsec  
HYPER FAST  
CENTERTAP RECTIFIER**

- FEATURES:**
- Hyper Fast Recovery: 30nsec Maximum
  - High Surge Rating
  - Low Reverse Leakage Current
  - Low Junction Capacitance
  - Hermetically Sealed Package
  - Gold Eutectic Die Attach Available
  - Ultrasonic Aluminum Wire Bonds
  - Common Anode and Doubler Versions Available
  - TX, TXV and Space Level Screening Available



Maximum Ratings	SYMBOL	VALUE	UNITS
Peak Repetitive Reverse and DC Blocking Voltage <b>SDR656CTM &amp; Z</b>	$V_{RRM}$ $V_{RWM}$ $V_R$	600	Volts
Average Rectified Forward Current. (Resistive load, 60Hz, Sine Wave, $T_A = 25^\circ\text{C}$ ) <u>1/</u>	$I_o$	40	Amps
Peak Surge Current (8.3 ms Pulse, Half Sine Wave, $T_A = 25^\circ\text{C}$ ) <u>2/</u>	$I_{FSM}$	200	Amps
Operating and Storage Temperature	$T_{OP}$ & $T_{STG}$	-65 TO +175	$^\circ\text{C}$
Maximum Thermal Resistance Junction to Case, each individual diode Junction to Case, <u>1/</u>	$R_{\theta JC}$	2.0 1.0	$^\circ\text{C/W}$

1/ Both legs tied together

2/ Per leg

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

**DATA SHEET #: RC0028A**

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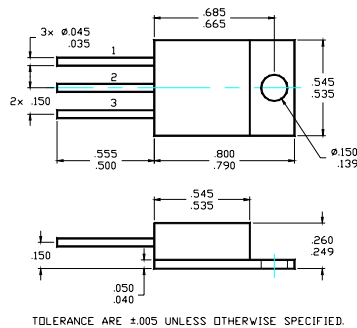
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Electrical Characteristics (per leg)	SYMBOL	VALUE	UNITS
<b>Instantaneous Forward Voltage Drop</b> ( $I_F = 10A$ $T_A = 25^\circ C$ , 300 $\mu$ sec pulse ) ( $I_F = 20A$ $T_A = 25^\circ C$ , 300 $\mu$ sec pulse )	$V_F$	1.35	$V_{DC}$
		1.55	$V_{DC}$
<b>Instantaneous Forward Voltage Drop</b> ( $I_F = 10A$ $T_A = 100^\circ C$ , 300 $\mu$ sec pulse ) ( $I_F = 10A$ $T_A = -55^\circ C$ , 300 $\mu$ sec pulse )	$V_F$	1.25	$V_{DC}$
		1.45	$V_{DC}$
<b>Reverse Leakage Current</b> (Rated $V_R$ , $T_A = 25^\circ C$ , 300 $\mu$ s pulse minimum )	$I_R$	50	$\mu A$
<b>Reverse Leakage Current</b> (Rated $V_R$ , $T_A = 100^\circ C$ , 300 $\mu$ s pulse minimum )	$I_R$	5	mA
<b>Junction Capacitance</b> ( $V_R = 10V_{DC}$ , $T_A = 25^\circ C$ , $f = 1MHz$ )	$C_J$	50	pf
<b>Reverse Recovery Time</b> ( $T_A = 25^\circ C$ , $I_F = 0.5A$ , $I_R = 1.0A$ , $I_{RR} = 0.25A$ )	$T_{RR}$	30	nsec

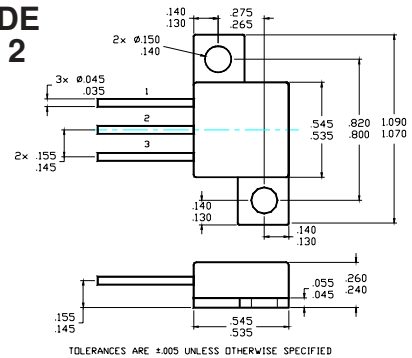
## CASE OUTLINE: TO-254

**PIN 1: ANODE 1**  
**PIN 2: CATHODE**  
**PIN 3: ANODE 2**



## CASE OUTLINE: TO-254Z

**PIN 1: ANODE 1**  
**PIN 2: CATHODE**  
**PIN 3: ANODE 2**



## TYPICAL OPERATING CURVES

$T_A = 25^\circ C$  Unless otherwise specified

