PRELIMINARY

# SDR656CTM & Z

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

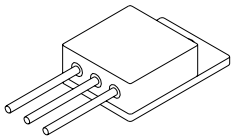
## Designer's Data Sheet

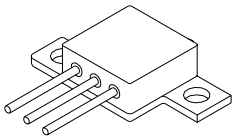
## 40AMPS 600 VOLTS 30 nsec HYPER FAST CENTERTAP RECTIFIER

**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**

**TO-254** **TO-254Z**





| Maximum Ratings | SYMBOL | VALUE | UNITS |
|---|---|---|---|
| **Peak Repetitive Reverse and DC Blocking Voltage** **SDR656CTM & Z** | $V_{RRM}$ $V_{RWM}$ $V_R$ | 600 | Volts |
| **Average Rectified Forward Current.** (Resistive load, 60Hz, Sine Wave, $T_A$ = 25°C) 1/ | Io | 40 | Amps |
| **Peak Surge Current** (8.3 ms Pulse, Half Sine Wave, $T_A$ = 25°C) 2/ | $I_{FSM}$ | 200 | Amps |
| **Operating and Storage Temperature** | $T_{OP}$ & $T_{STG}$ | -65 TO +175 | °C |
| **Maximum Thermal Resistance** Junction to Case, each individual diode Junction to Case, 1/ | $R_{\theta JC}$ | 2.0 1.0 | °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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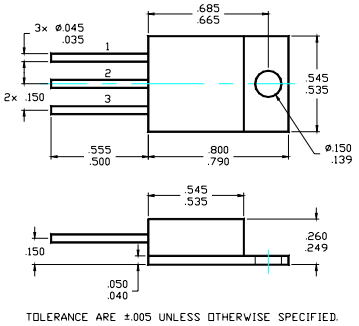
| Electrical Characteristics (per leg) | SYMBOL | VALUE | UNITS |
|---|---|---|---|
| **Instantaneous Forward Voltage Drop**<br>($I_F$ = 10A $T_A$ = 25°C, 300µsec pulse )<br>($I_F$ = 20A $T_A$ = 25°C, 300µsec pulse ) | $V_F$ | **1.35**<br>**1.55** | $V_{DC}$<br>$V_{DC}$ |
| **Instantaneous Forward Voltage Drop**<br>($I_F$ = 10A $T_A$ = 100°C, 300µsec pulse )<br>($I_F$ = 10A $T_A$ = -55°C, 300µsec pulse ) | $V_F$ | **1.25**<br>**1.45** | $V_{DC}$<br>$V_{DC}$ |
| **Reverse Leakage Current**<br>(Rated $V_R$, $T_A$ = 25°C, 300µs pulse minimum ) | $I_R$ | **50** | **µA** |
| **Reverse Leakage Current**<br>(Rated $V_R$, $T_A$ = 100°C, 300µs pulse minimum ) | $I_R$ | **5** | **mA** |
| **Junction Capacitance**<br>($V_R$ = 10$V_{DC}$, $T_A$ = 25°C, f = 1MHz) | $C_J$ | **50** | **pf** |
| **Reverse Recovery Time**<br>($T_A$= 25°C, $I_F$ = 0.5A, $I_R$ = 1.0A, $I_{RR}$ = 0.25A) | $T_{RR}$ | **30** | **nsec** |

## CASE OUTLINE: TO-254

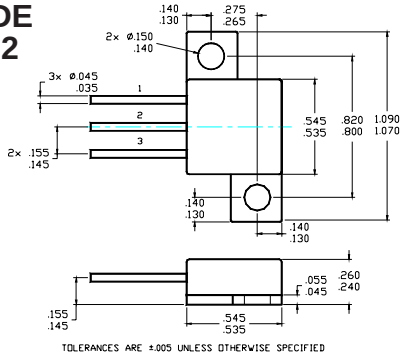
**PIN 1: ANODE 1**
**PIN 2: CATHODE**
**PIN 3: ANODE 2**




TOLERANCE ARE ±.005 UNLESS OTHERWISE SPECIFIED.

## CASE OUTLINE: TO-254Z

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




TOLERANCES ARE ±.005 UNLESS OTHERWISE SPECIFIED

## TYPICAL OPERATING CURVES

**$T_A$= 25°C Unless otherwise specified**