



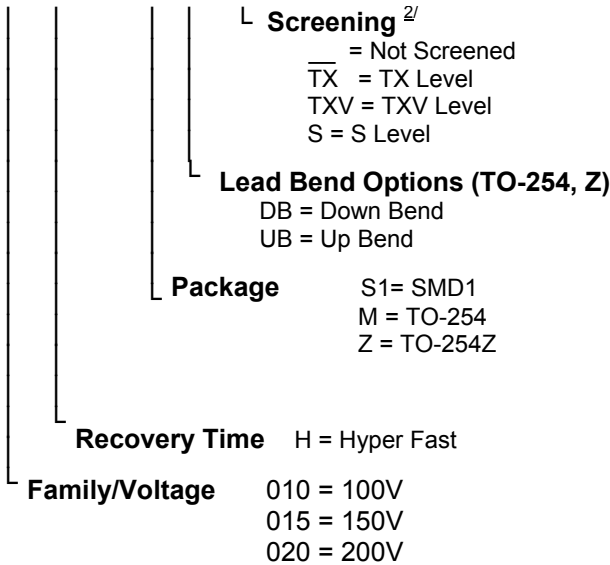
**Solid State Devices, Inc.**

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>**

**SDR60** \_ **H** **CT** \_ \_ \_



**SDR60010HCT  
 thru  
 SDR60020HCT**

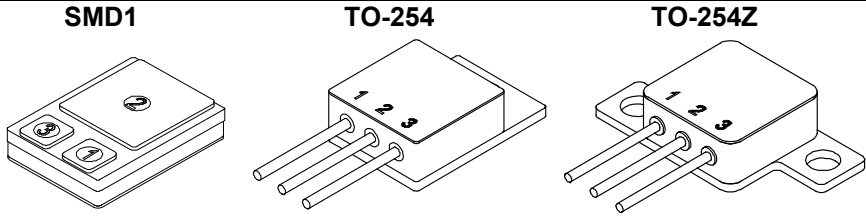
**60 AMP  
 HYPER FAST  
 CENTERTAP RECTIFIER  
 100 - 200 VOLTS  
 35 nsec**

- FEATURES:**
- Hyper Fast Recovery: 35 ns Maximum
  - High Surge Rating
  - Low Reverse Leakage Current
  - Low Junction Capacitance
  - Hermetically Sealed Package, isolated (TO-254, Z) or hot case (SMD1)
  - Gold Eutectic Die Attach Available
  - Ultrasonic Aluminum Wire Bonds
  - TX, TXV, or Space Level Screening Available

| Maximum Ratings   |                 | Symbol               | Value       | Units        |
|---|-----------------|----------------------|-------------|--------------|
| <b>Peak Repetitive Reverse and DC Blocking Voltage <sup>3/</sup></b>  | <b>SDR60010</b> | $V_{RRM}$            | 100         | <b>Volts</b> |
|   | <b>SDR60015</b> | $V_{RWM}$            | 150         |              |
|   | <b>SDR60020</b> | $V_R$                | 200         |              |
| <b>Average Rectified Forward Current <sup>4/</sup></b><br>(Resistive Load, 60 Hz Sine Wave, $T_C = 100^\circ\text{C}$ )   |                 | $I_O$                | 60          | <b>Amps</b>  |
| <b>Peak Surge Current</b><br>(8.3 ms Pulse, Half Sine Wave, $T_A = 25^\circ\text{C}$ , per leg)   |                 | $I_{FSM}$            | 250         | <b>Amps</b>  |
| <b>Operating &amp; Storage Temperature</b>  |                 | $T_{OP}$ & $T_{STG}$ | -65 to +200 | <b>°C</b>    |
| <b>Maximum Total Thermal Resistance</b><br>Junction to Case, each individual diode, SMD1<br>Junction to Case, SMD1 <sup>4/</sup><br>Junction to Case, each individual diode, TO-254, Z<br>Junction to Case, TO-254, Z <sup>4/</sup> |                 | $R_{\theta JC}$      | 1.5         | <b>°C/W</b>  |
|   |                 |                      | 1.0         |              |
|   |                 |                      | 1.8         |              |
|   |                 |                      | 1.2         |              |

**NOTES:**

- <sup>1/</sup> For ordering information, price, and availability, contact factory.
- <sup>2/</sup> Screening based on MIL-PRF-19500. Screening flows available on request.
- <sup>3/</sup> Higher voltages available.
- <sup>4/</sup> Both legs tied together.



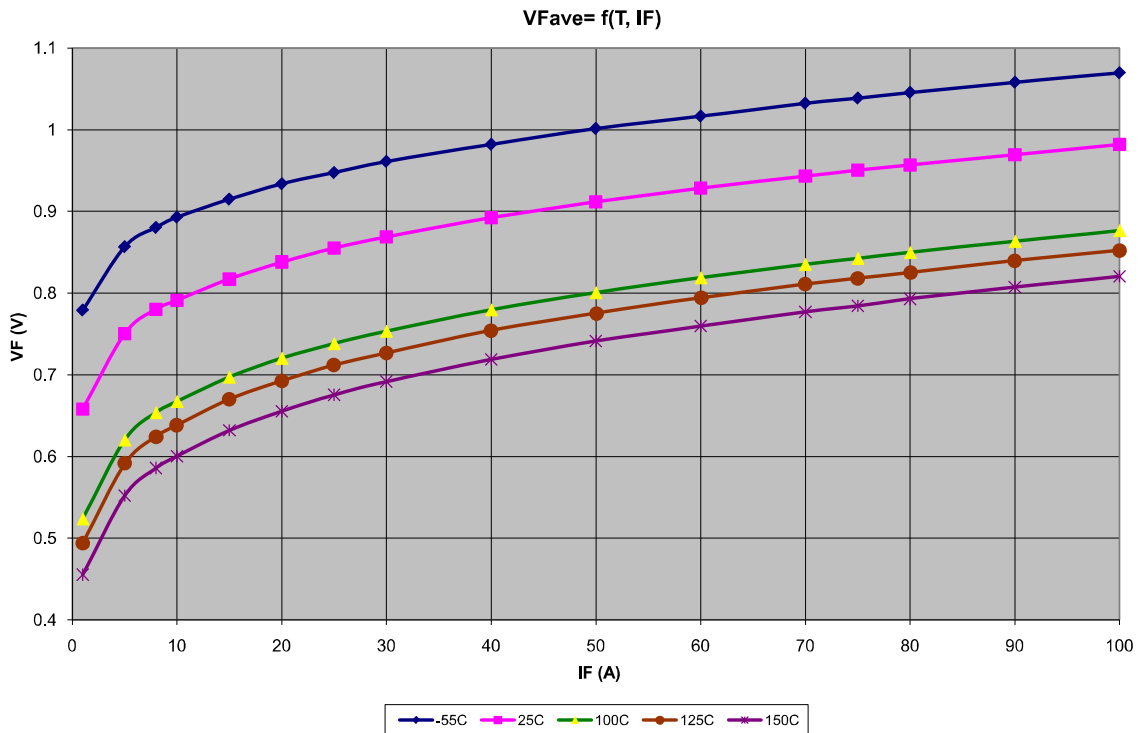


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**SDR60010HCT  
 thru  
 SDR60020HCT**

| Electrical Characteristic (Per Leg)  |                           | Symbol                 | Typ       | Max    | Units         |
|--|---------------------------|------------------------|-----------|--------|---------------|
| Instantaneous Forward Voltage Drop<br>( $T_A = 25^\circ\text{C}$ , 300 – 500 $\mu\text{sec}$ Pulse)                          | $I_F = 10\text{ A}$       | $V_{F1}$               | 0.80      | 0.95   | $V_{DC}$      |
|  | $I_F = 20\text{ A}$       | $V_{F2}$               | 0.84      | 0.98   |               |
|  | $I_F = 30\text{ A}$       | $V_{F3}$               | 0.88      | 1.10   |               |
| Instantaneous Forward Voltage Drop<br>( $T_A = -55^\circ\text{C}$ , 300 – 500 $\mu\text{sec}$ Pulse)                         | $I_F = 10\text{ A}$       | $V_{F4}$               | 0.90      | 1.1    | $V_{DC}$      |
|  | $I_F = 20\text{ A}$       | $V_{F5}$               | 0.95      | 1.15   |               |
|  | $I_F = 30\text{ A}$       | $V_{F6}$               | 0.97      | 1.2    |               |
| Instantaneous Forward Voltage Drop<br>( $T_A = 125^\circ\text{C}$ , 300 – 500 $\mu\text{sec}$ Pulse)                         | $I_F = 10\text{ A}$       | $V_{F7}$               | 0.64      | 0.80   | $V_{DC}$      |
|  | $I_F = 20\text{ A}$       | $V_{F8}$               | 0.70      | 0.86   |               |
|  | $I_F = 30\text{ A}$       | $V_{F9}$               | 0.74      | 1.00   |               |
| Reverse Leakage Current<br>(100% of rated $V_R$ , 300 $\mu\text{s}$ pulse min.)  | $T_A = 25^\circ\text{C}$  | $I_{R1}$               | 0.025     | 10     | $\mu\text{A}$ |
|  | $T_A = 100^\circ\text{C}$ | $I_{R2}$               | 2.5       | -      |               |
|  | $T_A = 125^\circ\text{C}$ | $I_{R3}$               | 8         | 100    |               |
|  | $T_A = 150^\circ\text{C}$ | $I_{R4}$               | 30        | -      |               |
| Reverse Recovery Time<br>( $I_F = 0.5\text{ A}$ , $I_R = 1\text{ A}$ , $I_{RR} = 0.25\text{ A}$ , $T_A = 25^\circ\text{C}$ ) |                           | $t_{RR1}$              | 30        | 35     | nsec          |
| Reverse Recovery Time<br>( $I_F = 10\text{ A}$ , $di_F/dt = 100\text{ A/us}$ )   | $T_A = 25^\circ\text{C}$  | $t_{RR2}$<br>$I_{RM2}$ | 45<br>2.6 | -<br>- | nsec<br>A     |
|  | $T_A = 100^\circ\text{C}$ | $t_{RR3}$<br>$I_{RM3}$ | 85<br>5   | -<br>- | nsec<br>A     |
| Junction Capacitance<br>( $T_A = 25^\circ\text{C}$ , $f = 1\text{ MHz}$ )  | $V_R = 5\text{ V}_{DC}$   | $C_J$                  | 470       | -      | $\mu\text{F}$ |
|  | $V_R = 10\text{ V}_{DC}$  |                        | 375       | 500    |               |

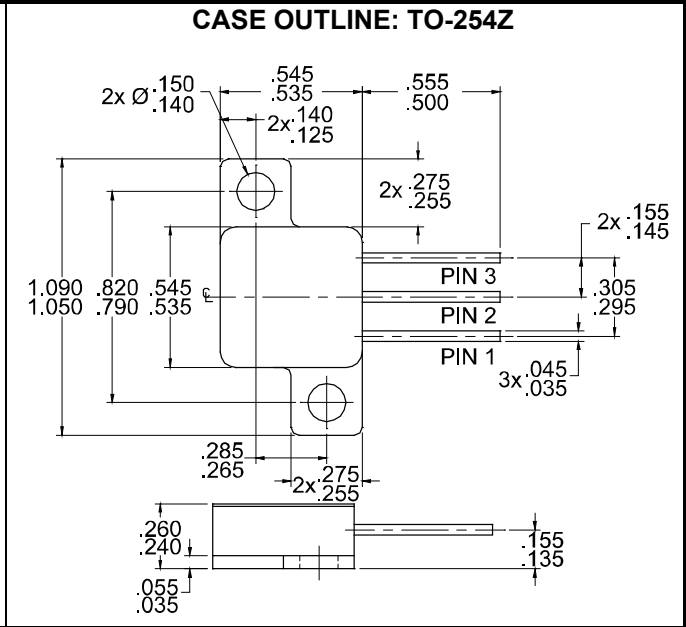
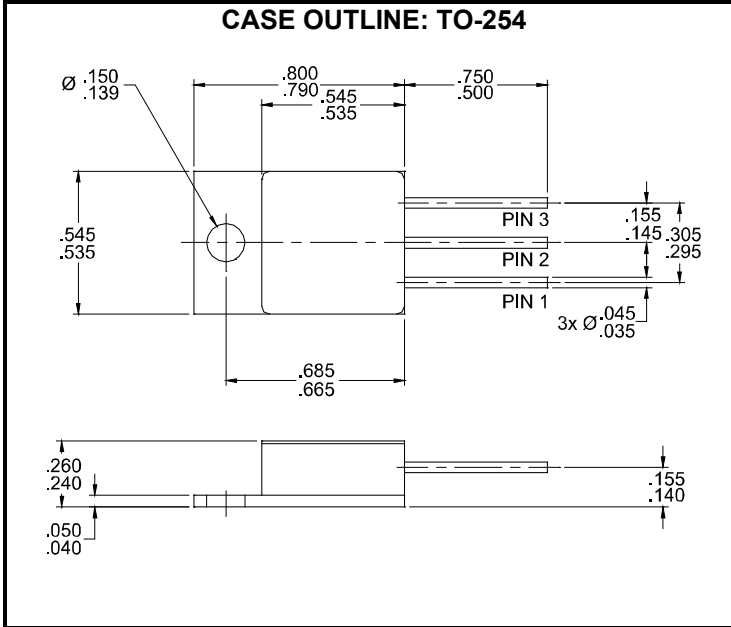
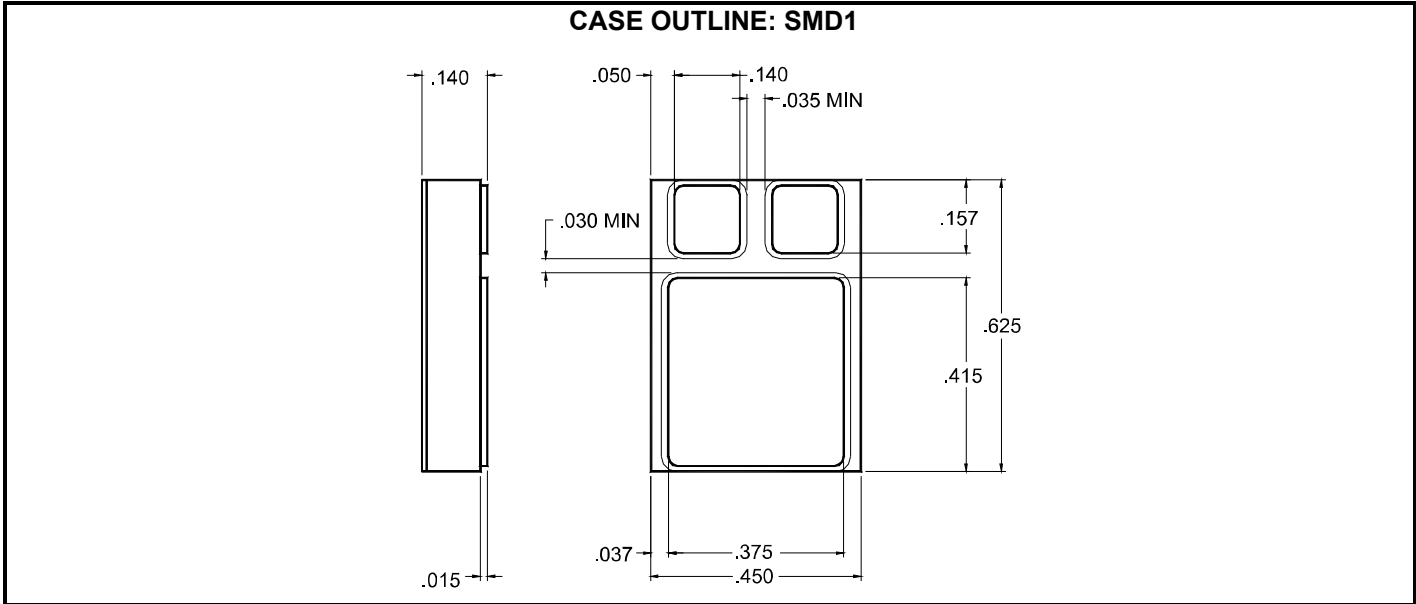




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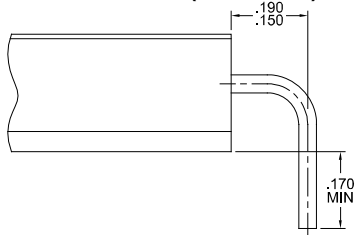
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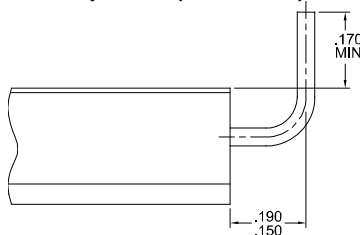


**Optional Lead Bent Configuration**

**Down Bent (DB Suffix)**



**Up Bent (UB Suffix)**



**Pin Assignment**

| Package | Pin 1 | Pin 2   | Pin 3 |
|---------|-------|---------|-------|
| SMD1    | Anode | Cathode | Anode |
| TO-254  | Anode | Cathode | Anode |
| TO-254Z | Anode | Cathode | Anode |

For information on curves, contact the Factory Representative for Engineering Assistance.

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

**DATA SHEET #: RC0147B**

**DOC**