



# SOLID STATE DEVICES, INC.

14830 Valley View Blvd \* La Mirada, Ca 90638

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

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## DESIGNER'S DATA SHEET

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

SDR12 12 J UF UB TX

Screening: <sup>2/</sup> \_ = Not Screened

TX = TX Level

TXV = TXV Level

S = Space Level

Lead Bending: <sup>3/ 4/</sup>

\_ = Straight

UB = Up Bend

DB = Down Bend

Package: <sup>3/</sup> J = TO-257

S.5 = SMD .5

HB = SedPack I (Leadless)

HE = SepPack I (Leaded)

Voltage: 10 = 1000V

12 = 1200V

## SDR1210UF / SDR1212UF SERIES

**12 AMP**  
**1000 - 1200 VOLTS**  
**75 nsec**  
**ULTRA FAST RECTIFIER**

### FEATURES:

- Ultra Fast Recovery: 75nsec Maximum
- High Surge Rating
- Low Reverse Leakage Current
- Low Junction Capacitance
- Hermetically Sealed Package
- Custom Lead Forming Available
- Eutectic Die Attach
- TX, TXV and S Level Screening Available

| Maximum Ratings <sup>3/</sup>                                                                  |                                                  | SYMBOL                                                 | VALUE             | UNITS |
|------------------------------------------------------------------------------------------------|--------------------------------------------------|--------------------------------------------------------|-------------------|-------|
| Peak Repetitive Reverse and<br>DC Blocking Voltage                                             | SDR1210<br>SDR1212                               | V <sub>RRM</sub><br>V <sub>RWM</sub><br>V <sub>R</sub> | 1000<br>1200      | Volts |
| Average Rectified Forward Current.<br>(Resistive load, 60Hz, Sine Wave, T <sub>A</sub> = 25°C) |                                                  | I <sub>O</sub>                                         | 12                | Amps  |
| Peak Surge Current<br>(8.3 ms Pulse, Half Sine Wave, T <sub>A</sub> = 25°C)                    |                                                  | I <sub>FSM</sub>                                       | 125               | Amps  |
| Operating and Storage Temperature                                                              |                                                  | T <sub>OP</sub> & T <sub>stg</sub>                     | -65 TO +175       | °C    |
| Maximum Thermal Resistance<br>Junction to Case                                                 | TO-257 (J)<br>SMD.5 (S.5)<br>SedPack I (HB & HE) | R <sub>QJC</sub>                                       | 1.4<br>0.8<br>0.8 | °C/W  |

| TO-257 (J) | SMD.5 (S.5) | SedPack I (HB) | SedPack I (HE) |
|------------|-------------|----------------|----------------|
|            |             |                |                |

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

**DATA SHEET #: RC0066A**

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| Electrical Characteristics <sup>5/</sup>                                                                                     | SYMBOL                                          | MIN | MAX         | UNITS                 |
|------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|-----|-------------|-----------------------|
| <b>Instantaneous Forward Voltage Drop</b><br>(T <sub>A</sub> = 25°C, 300 - 500µsec Pulse )                                   | I <sub>F</sub> = 8A<br><b>V<sub>F1</sub></b>    | --  | <b>1.50</b> | <b>V<sub>DC</sub></b> |
|                                                                                                                              | I <sub>F</sub> = 12A<br><b>V<sub>F2</sub></b>   | --  | <b>1.60</b> |                       |
| <b>Instantaneous Forward Voltage Drop</b><br>(I <sub>F</sub> = 8A, 300 - 500µsec pulse )                                     | T <sub>A</sub> = -55°C<br><b>V<sub>F3</sub></b> | --  | <b>1.60</b> | <b>V<sub>DC</sub></b> |
|                                                                                                                              | T <sub>A</sub> = 100°C<br><b>V<sub>F4</sub></b> | --  | <b>1.40</b> |                       |
| <b>Reverse Leakage Current</b><br>(80% of Rated V <sub>R</sub> , 300µs pulse min.)                                           | T <sub>A</sub> = 25°C<br><b>I<sub>R1</sub></b>  | --  | <b>30</b>   | <b>mA</b>             |
|                                                                                                                              | T <sub>A</sub> = 100°C<br><b>I<sub>R2</sub></b> | --  | <b>500</b>  |                       |
| <b>Junction Capacitance</b><br>(V <sub>R</sub> = 10V <sub>DC</sub> , T <sub>A</sub> = 25°C, f = 1MHz)                        | <b>C<sub>J</sub></b>                            | --  | <b>50</b>   | <b>pF</b>             |
| <b>Reverse Recovery Time</b><br>(I <sub>F</sub> = 0.5A, I <sub>R</sub> = 1A, I <sub>RR</sub> = 0.25A, T <sub>A</sub> = 25°C) | <b>t<sub>RR</sub></b>                           | --  | <b>75</b>   | <b>nsec</b>           |

## NOTES:

- 1/ For Ordering Information, Price, and Availability Contact Factory.  
2/ Screening per MIL-PRF-19500.  
3/ For Package Outlines Contact Factory.  
4/ Up and Down Bend Configurations Available for M and Z (TO-254 and TO-254Z) Packages Only.  
5/ All Electrical Characteristics @25°C, Unless Otherwise Specified.

## Available Part Numbers:

|                     |                     |
|---------------------|---------------------|
| <b>SDR1210JUF</b>   | <b>SDR1212JUF</b>   |
| <b>SDR1210JUFDB</b> | <b>SDR1212JUFDB</b> |
| <b>SDR1210JUFUB</b> | <b>SDR1212JUFUB</b> |
| <b>SDR1210S.5UF</b> | <b>SDR1212S.5UF</b> |
| <b>SDR1210HBUF</b>  | <b>SDR1212HBUF</b>  |
| <b>SDR1210HEUF</b>  | <b>SDR1212HEUF</b>  |

## PIN ASSIGNMENT

| PACKAGE        | Pin 1   | Pin 2 | Pin 3 |
|----------------|---------|-------|-------|
| TO-257 (J)     | Cathode | Anode | Anode |
| SMD.5 (S.5)    | Cathode | Anode | Anode |
| SedPack 1 (HB) | Cathode | Anode | N/A   |
| SedPack 1 (HE) | Cathode | Anode | N/A   |