



**Solid State Devices, Inc.**

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

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**World's First Silicon Carbide  
Centertap Rectifier  
SSR40C30CT Series**

**40A / 300V  
Schottky Silicon Carbide  
Centertap Rectifier**

**DESIGNER'S DATA SHEET**

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

**SSR40C 30 CT S.5 TX**

- Screening      = Not Screened  
                   TV = TX Level  
                   TXV= TXV Level  
                   S = S Level
- Package <sup>2/</sup> S.5 = SMD.5  
                   G = Cerpack  
                   M = TO-254
- Configuration CT = Centertap
- Voltage 20 = 200 V  
                   30 = 300 V

- Features:**
- World's 1st Hermetic 40A SiC Centertap Rectifier
  - High Voltage 300V
  - Very High Operating Temperature, 250°C
  - No Recovery Time (tfr or trr)
  - High Current Operation, 40A
  - Hermetic Packaging
  - TX, TXV, S Level screening available
  - Higher Voltage upon Request

| Maximum Ratings  |                  | Symbol          | Value       | Units |
|--|------------------|-----------------|-------------|-------|
| <b>Peak Repetitive and Peak Surge Reverse Voltage</b>  | SSR40C20         | $V_{RRM}$       | 200         | Volts |
|  | SSR40C30         | $V_{RSM}$       | 300         |       |
| <b>Average Rectified Forward Current</b><br>(Resistive Load, 60 Hz Sine Wave)                              | Per Leg<br>Total | $I_o$           | 20          | Amps  |
|  |                  |                 | 40          |       |
| <b>Non Repetitive Peak Surge Current</b><br>(8.3 ms Pulse, Half Sine Wave Superimposed on $I_o$ , per leg) |                  | $I_{FSM}$       | 36          | Amps  |
| <b>Power Dissipation</b>   | S.5 & G Package  | $P_D$           | 60          | Watts |
|  | M Package        |                 | 45          |       |
| <b>Operating &amp; Storage Temperature</b>   |                  | Top & Tstg      | -55 to +250 | °C    |
| <b>Maximum Thermal Resistance</b><br>Junction to Case  | S.5 & G Package  | $R_{\theta JC}$ | 1.3         | °C/W  |
|  | M Package        |                 | 1.6         |       |

|                          |                           |                            |
|--------------------------|---------------------------|----------------------------|
| <p><b>TO-254 (M)</b></p> | <p><b>Cerpack (G)</b></p> | <p><b>SMD .5 (S.5)</b></p> |
|--------------------------|---------------------------|----------------------------|



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## World's First Silicon Carbide Centertap Rectifier SSR40C30CT Series

| Electrical Characteristic (Per Leg)   |          | Symbol     | Min | Typ  | Max  | Units |
|---|----------|------------|-----|------|------|-------|
| <b>Instantaneous Forward Voltage Drop</b><br>(T <sub>j</sub> = 25°C, 300 – 500 μsec pulse)                              | If = 10A | <b>Vf1</b> | --- | 1.25 | 1.35 | Volts |
|   | If = 20A | <b>Vf2</b> | --- | 1.57 | 1.70 |       |
| <b>Instantaneous Forward Voltage Drop</b><br>(T <sub>j</sub> = 150°C, 300 – 500 μsec pulse)                             | If = 10A | <b>Vf3</b> | --- | 1.22 | 1.30 | Volts |
|   | If = 20A | <b>Vf4</b> | --- | 1.55 | 1.80 |       |
| <b>Instantaneous Forward Voltage Drop</b><br>(T <sub>j</sub> = -55°C, 300 – 500 μsec pulse)                             | If = 10A | <b>Vf5</b> | --- | 1.35 | 1.45 | Volts |
|   | If = 20A | <b>Vf6</b> | --- | 1.60 | 1.75 |       |
| <b>Reverse Leakage Current</b><br>(V <sub>r</sub> = Rated V <sub>r</sub> , T <sub>j</sub> = 25°C, 300 μsec min pulse)   |          | <b>Ir1</b> | --- | 50   | 200  | μA    |
| <b>Reverse Leakage Current</b><br>(V <sub>r</sub> = Rated V <sub>r</sub> , T <sub>j</sub> = 150°C, 300 μsec min pulse)  |          | <b>Ir2</b> | --- | 200  | 500  | μA    |
| <b>Junction Capacitance</b><br>(V <sub>r</sub> =10 Vdc, T <sub>c</sub> =25°C, f=1MHz)                                   |          | <b>Cj</b>  | --- | 700  | 1000 | pF    |
| <b>Total Capacitive Charge</b><br>(V <sub>R</sub> = 400V, I <sub>F</sub> = 5A, di/dt = 200A/μs, T <sub>J</sub> = 150°C) |          | <b>Qc</b>  | --- | 26   | ---  | nC    |

### NOTES:

- 1/ For Ordering Information, Price, and Availability Contact Factory.
- 2/ For Package Outlines Contact Factory.
- 3/ All Electrical Characteristics @25°C Unless Otherwise Specified.
- 4/ If High Temperature Operation is Desired (> 175°C) Consult Factory for Soldering Consideration.

### Available Part Numbers:

SSR40C20CTS.5    SSR40C20CTG    SSR40C20CTM  
 SSR40C30CTS.5    SSR40C30CTG    SSR40C30CTM

### PIN ASSIGNMENT

| Package             | Pin 1   | Pin 2   | Pin 3 (Tab) |
|---------------------|---------|---------|-------------|
| <b>SMD .5 (S.5)</b> | Cathode | Anode   | Anode       |
| <b>Cerpack (G)</b>  | Anode   | Anode   | Cathode     |
| <b>TO-254 (M)</b>   | Anode   | Cathode | Anode       |
|                     |         |         |             |