**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

# SSR40C100S1
# SSR40C120S1

## 40 A / 1200 V
## Schottky Silicon Carbide Rectifier

## Designer's Data Sheet

**Part Number / Ordering Information** [1/]

**SSR40C** ___ ___ ___

- **Screening** [2/]: __ = Not Screened; TX = TX Level; TXV = TXV; S = S Level
- **Package**: S1 = SMD1
- **Voltage**: 100 = 1000 V; 120 = 1200 V

**FEATURES:**

- 1200 Volt Silicon Carbide Schottky Rectifier
- Average Output Current 40 Amps
- No Reverse Recovery
- No Forward Recovery
- No Switching Time Change Over Temperature
- Small Package Size
- TX, TXV, and Space Level Screening Available.[2/] Consult Factory.

| MAXIMUM RATINGS [3/] | | Symbol | Value | Units |
|---|---|---|---|---|
| **Peak Repetitive and Peak Reverse Voltage** | **SSR30C100S1**<br>**SSR30C120S1** | $V_{RRM}$<br>$V_R$ | 1000<br>1200 | **Volts** |
| **Average Rectified Forward Current** [4/]<br>(Resistive Load, 60 Hz, Sine Wave) | Total | $I_O$ | 40 | **Amps** |
| **Peak Surge Current** [4/]<br>(8.3 ms Pulse, Half Sine Wave, $T_A = 25^oC$) | Total | $I_{FSM}$ | 200 | **Amps** |
| **Operating & Storage Temperature** | | $T_{OP}$ & $T_{stg}$ | -55 to +250 | **°C** |
| **Junction Temperature** | | $T_J$ | -55 to +250 | **°C** |
| **Maximum Thermal Resistance** [4/]<br>(Junction to Case) | Total | $R_{\theta JC}$ | 0.6 | **°C/W** |

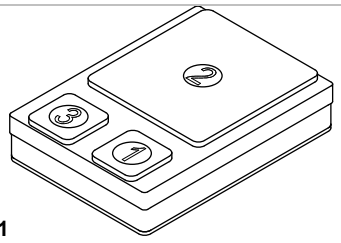
**NOTES:**

1/ For Ordering Information, Price, and Availability Contact Factory.

2/ Screened to MIL-PRF-19500.

3/ Unless Otherwise Specified, All Electrical Characteristics @25ºC

4/ Terminal Pads 1 & 3 Must be connected together for testing and at the Board Level.




**SMD1**

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# SSR40C100S1
# SSR40C120S1

| ELECTRICAL CHARACTERISTICS 3/ 4/ | | Symbol | Min | Typ | Max | Units |
|---|---|---|---|---|---|---|
| **Instantaneous Forward Voltage Drop** ($T_A$=25ºC, Pulse) | $I_F$ = 10 A | $V_{F1}$ | — | 1.10 | 1.25 | $V_{DC}$ |
| | $I_F$ = 20 A | $V_{F2}$ | — | 1.20 | 1.35 | |
| | $I_F$ = 30 A | $V_{F3}$ | — | 1.35 | 1.50 | |
| | $I_F$ = 40 A | $V_{F4}$ | — | 1.45 | 1.65 | |
| **Instantaneous Forward Voltage Drop** ($T_A$=150ºC, Pulse) | $I_F$ = 10 A | $V_{F5}$ | — | 1.15 | - | $V_{DC}$ |
| | $I_F$ = 20 A | $V_{F6}$ | — | 1.27 | 1.50 | |
| | $I_F$ = 30 A | $V_{F7}$ | — | 1.73 | - | |
| | $I_F$ = 40 A | $V_{F8}$ | — | 1.97 | 2.30 | |
| **Instantaneous Forward Voltage Drop** ($T_A$=-55ºC, Pulsed) | $I_F$ = 10 A | $V_{F9}$ | — | 1.10 | - | $V_{DC}$ |
| | $I_F$ = 20 A | $V_{F10}$ | — | 1.15 | 1.30 | |
| | $I_F$ = 30 A | $V_{F11}$ | — | 1.25 | - | |
| | $I_F$ = 40 A | $V_{F12}$ | — | 1.40 | 1.60 | |
| **Reverse Leakage Current** (Rated $V_R$, Pulsed) | $T_A$ = 25ºC | $I_{R1}$ | — | 30 | 100 | µA |
| | $T_A$ = 125ºC | $I_{R2}$ | | 40 | - | |
| | $T_A$ = 150ºC | $I_{R3}$ | | 50 | 500 | |
| | $T_A$ = 175ºC | $I_{R4}$ | | 60 | - | |
| **Junction Capacitance** ($V_R$ = 10V, f = 1MHz, $T_A$ = 25°C) | | $C_J$ | — | 1500 | 2000 | pF |

**NOTES:**

* Pulse Test: Pulse Width = 300 usec, Duty Cycle = 2%

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2/ Screened to MIL-PRF-19500.

3/ Unless Otherwise Specified, All Electrical Characteristics @25ºC

4/ Terminal Pads 1 & 3 must be connected together for testing and at the Board Level.

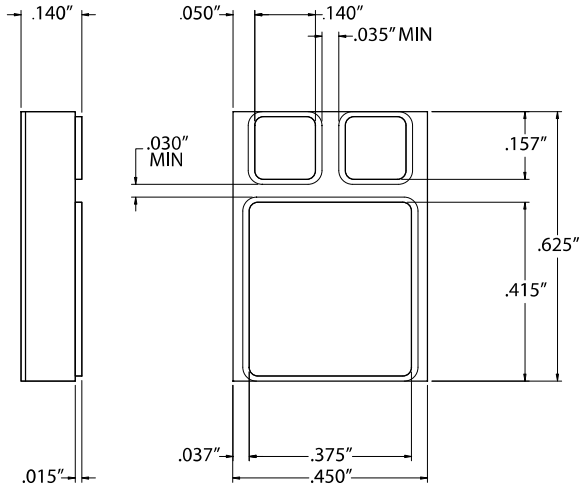
**Available Part Numbers:**

**SSR40C100S1**
**SSR40C120S1**

| PIN ASSIGNMENT | | | |
|---|---|---|---|
| **Package** | **Pin 1** | **Pin 2** | **Pin 3** |
| **SMD1** | Anode | Cathode | Anode |

**SMD1 Outline:**

Tolerances (Unless Specified):
.XX = ±.030"
.XXX = ±.010"




| NOTE: All specifications are subject to change without notification. SCD's for these devices should be reviewed by SSDI prior to release. | DATA SHEET #: SH0043D | DOC |
|---|---|---|