

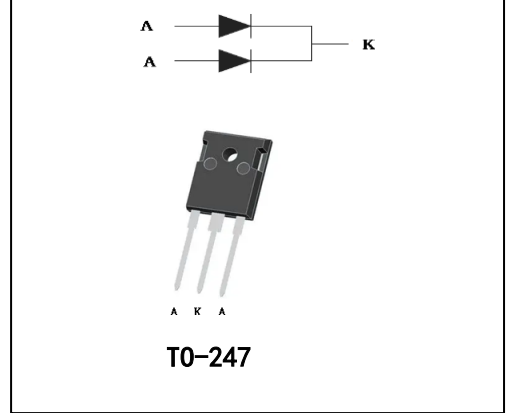


# SC40J120A

## 主要参数 MAIN CHARACTERISTICS

|                             |         |
|-----------------------------|---------|
| $V_{RRM}$                   | 1200V   |
| $I_F, T_C \leq 150^\circ C$ | 40A**   |
| $Q_C$ Typ                   | 190nC** |

## 封装 Package



### 用途

- 光伏逆变器
- 开关模式电源
- 高压 DC/DC 转换器
- 电池充电器
- 电动驱动
- 不间断电源

### APPLICATIONS

- Solar Inverters
- Switch Mode Power Supplies
- High Voltage DC/DC Converters
- Battery Chargers
- Motor Drives
- Uninterruptable power supplies

### 产品特性

- 高阻断电压
- 零反向恢复电流
- 零正向恢复电压
- 高频率应用
- 不受温度影响的开关特性
- 快速开关
- 正温度系数
- RoHS 产品

### FEATURES

- High Blocking Voltage
- Zero Reverse Recovery Current
- Zero Forward Recovery Voltage
- High-Frequency Operation
- Temperature-Independent Switching Behavior
- Extremely Fast Switching
- Positive Temperature Coefficient on  $V_F$
- RoHS product

## 订货信息 ORDER MESSAGE

|                         |            |            |
|-------------------------|------------|------------|
| 订货型号 Order codes        | 印记 Marking | 封装 Package |
| 无卤-条管 Halogen-Free-Tube |            |            |
| SC40J120A-GE-BR         | SC40J120A  | TO-247     |



## 绝对最大额定值 ABSOLUTE RATINGS (Tc=25°C)

| 项 目<br>Parameter   | 符 号<br>Symbol                        | 数 值<br>Value | 单 位<br>Unit |
|--|--------------------------------------|--------------|-------------|
| 反向重复峰值电压<br>Repetitive Peak Reverse Voltage                    | V <sub>RRM</sub>                     | 1200         | V           |
| 反向浪涌峰值电压<br>Surge Peak Reverse Voltage                         | V <sub>RSM</sub>                     | 1200         | V           |
| 反向直流电压<br>DC Blocking Voltage                                  | V <sub>DC</sub>                      | 1200         | V           |
| 正向平均电流<br>Continuous Forward Current                           | I <sub>F</sub><br>Tc=150°C           | 20*          | A           |
| 正向重复浪涌电流<br>Repetitive Peak Forward Surge Current              | I <sub>FRM</sub>                     | 100*         | A           |
| 正向非重复浪涌电流<br>Non-Repetitive Peak Forward Surge Current         | I <sub>FSM</sub>                     | 140*         | A           |
| 非重复正向峰值电流<br>Non-Repetitive Peak Forward Current               | I <sub>F,Max</sub>                   | 1200*        | A           |
| 耗散功率<br>Power Dissipation                                      | P <sub>tot</sub> Tc=25°C<br>Tc=110°C | 283*<br>123* | W           |
| 最高结温及存储温度<br>Operating and Storage Temperature Range           | T <sub>J</sub> , T <sub>STG</sub>    | -55~+175     | °C          |
| 引线最高焊接温度<br>Maximum Lead Temperature for Soldering<br>Purposes | T <sub>L</sub>                       | 300          | °C          |

\*Per Leg, \*\* Per Device

**电特性 ELECTRICAL CHARACTERISTICS**

| 项 目<br>Parameter                       | 符 号<br>Symbol | 测试条件<br>Tests conditions   | 最小<br>Min | 典型<br>Typ          | 最大<br>Max  | 单位 Units |
|--|---------------|--|-----------|--------------------|------------|----------|
| 正向电压<br>Forward Voltage                | $V_F$         | $I_F = 20A$ $T_J = 25^\circ C$<br>$I_F = 20A$ $T_J = 175^\circ C$  | -         | 1.50<br>2.2        | 1.8<br>3.0 | V        |
| 反向电流<br>Reverse Current                | $I_R$         | $V_R = 1200V$ $T_J = 25^\circ C$<br>$V_R = 1200V$ $T_J = 175^\circ C$  |           | 2<br>20            | 20<br>200  | $\mu A$  |
| 总储存电荷<br>Total Capacitive Charge       | $Q_C$         | $V_R = 600V$ , $T_J = 25^\circ C$ , $I_F = 20A$<br>$Q_C = \int_0^{V_R} C(V)dV$   |           | 95                 |            | nC       |
| 总电容<br>Total Capacitance               | C             | $V_R = 0V$ , $T_J = 25^\circ C$ , $f = 1MHz$<br>$V_R = 400V$ , $T_J = 25^\circ C$ , $f = 1MHz$<br>$V_R = 600V$ , $T_J = 25^\circ C$ , $f = 1MHz$ |           | 2010<br>120<br>197 |            | pF       |
| 电容储存能量<br>Capacitance<br>Stored Energy | $E_C$         | $V_R = 600V$   |           | 28.6               |            | $\mu J$  |

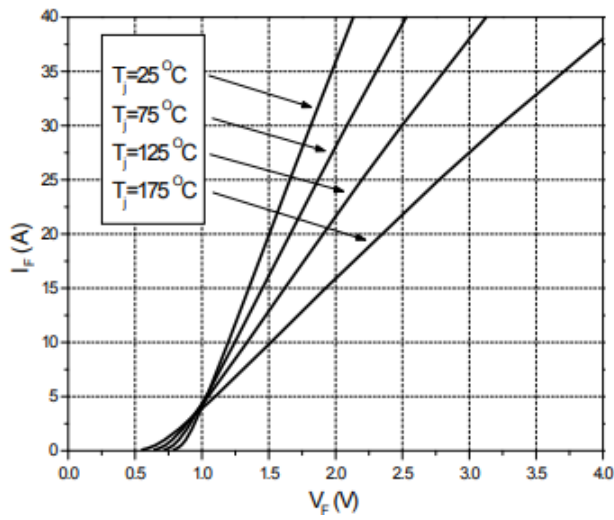
**热特性 THERMAL CHARACTERISTICS**

| 项 目<br>Parameter                               | 符 号<br>Symbol | 典型值<br>Typ | 单 位<br>Unit  |
|--|---------------|------------|--------------|
| 结到管壳的热阻<br>Thermal Resistance Junction to Case | $R_{th(j-c)}$ | 0.53       | $^\circ C/W$ |

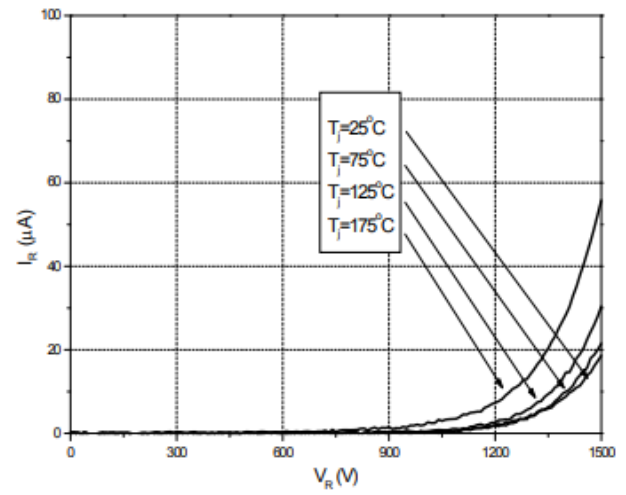




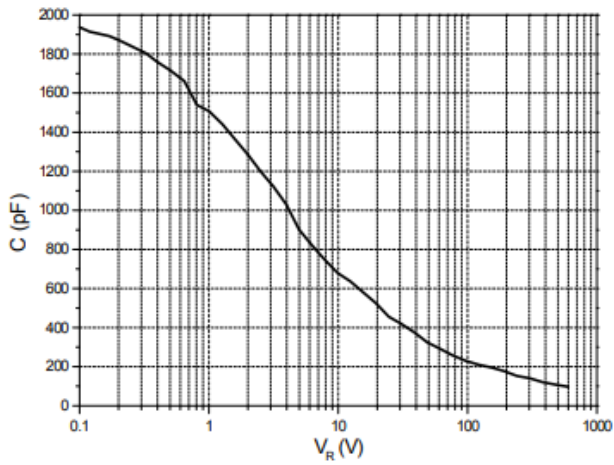
## 典型性能 Typical Performance



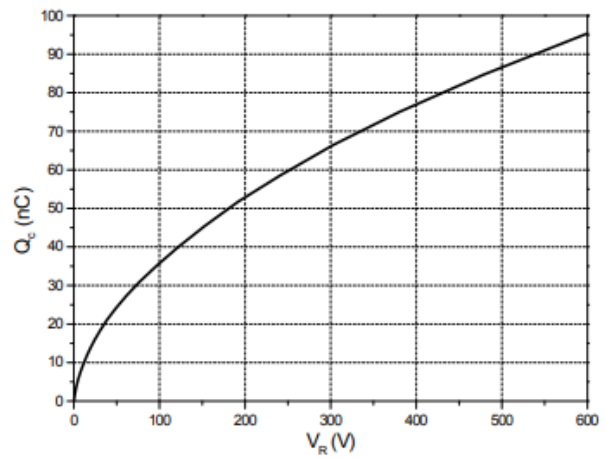
Forward Characteristics



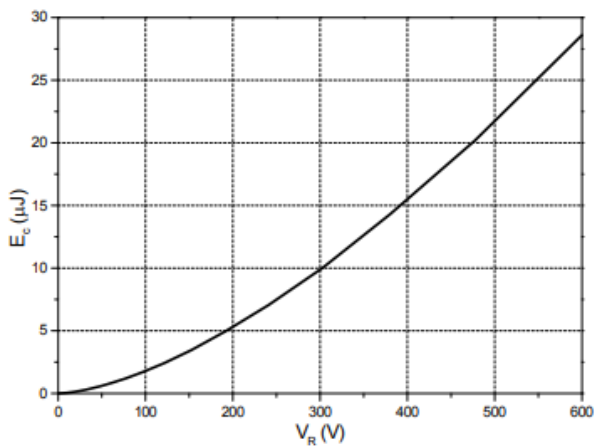
Reverse Characteristics



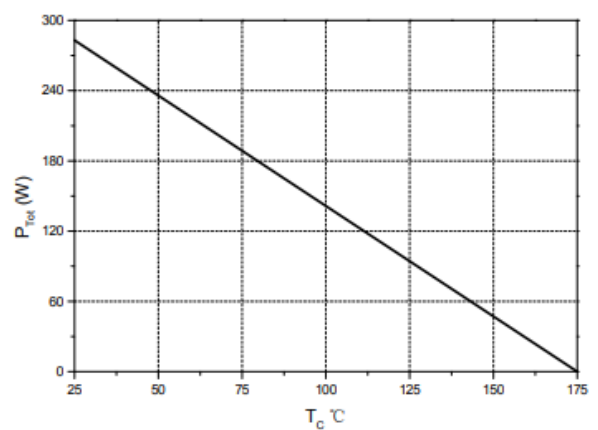
Capacitance vs. Reverse Voltage



Capacitance Charge vs. Reverse Voltage



Capacitance Stored Energy

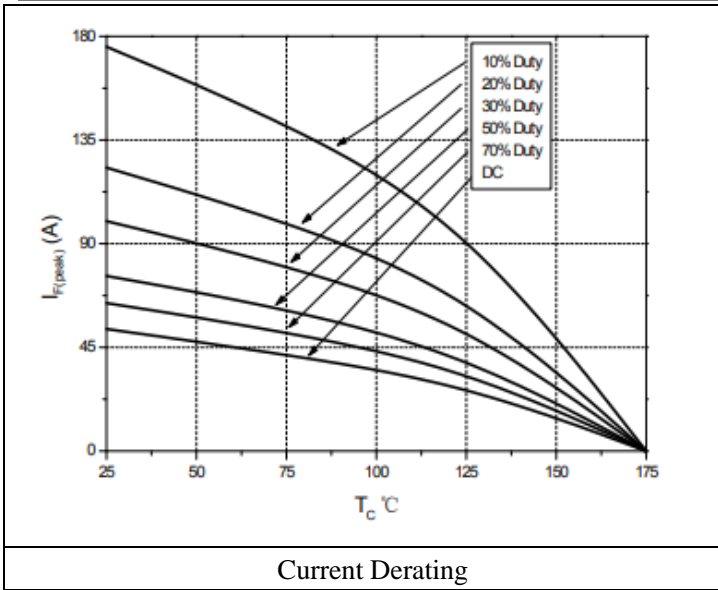


Power Derating

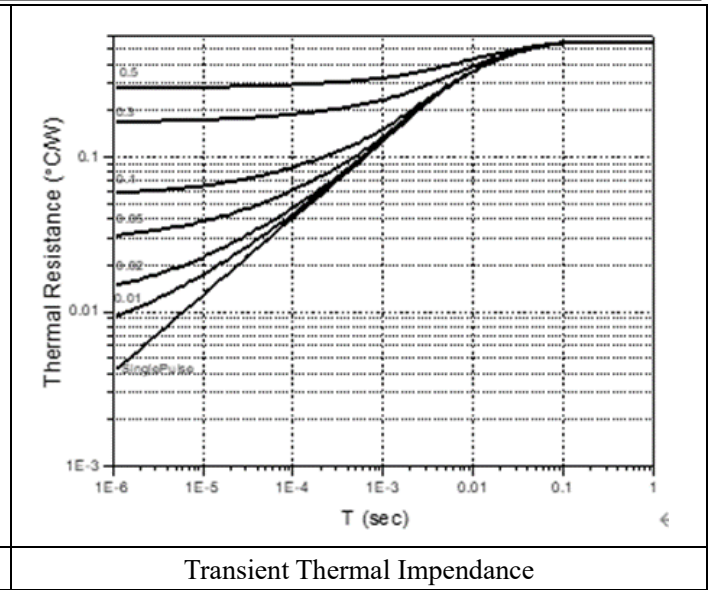




# SC40J120A



Current Derating

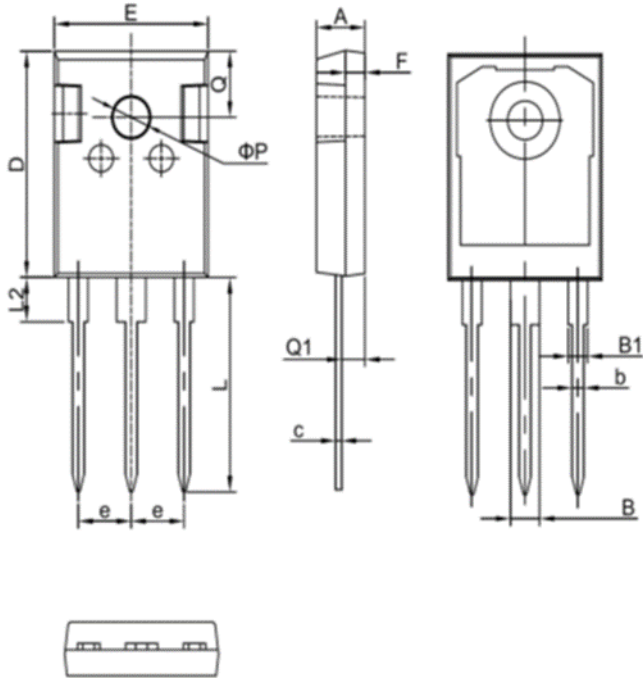


Transient Thermal Impedance



## TO-247

单位 Unit: mm



| 符号<br>symbol | MIN   | MAX   |
|--------------|-------|-------|
| A            | 4.90  | 5.10  |
| B            | 2.95  | 3.35  |
| B1           | 1.95  | 2.35  |
| b            | 1.15  | 1.35  |
| c            | 0.50  | 0.70  |
| D            | 20.90 | 21.10 |
| E            | 15.70 | 15.90 |
| e            | 5.34  | 5.54  |
| F            | 1.90  | 2.10  |
| L            | 19.40 | 20.40 |
| L2           | 4.03  | 4.23  |
| Q            | 6.00  | 6.40  |
| Q1           | 2.30  | 2.50  |
| P            | 3.50  | 3.70  |

←





### 注意事项

1. 吉林华微电子股份有限公司的产品销售分为直销和销售代理，无论哪种方式，订货时请与公司核实。
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3. 在电路设计时请不要超过器件的绝对最大额定值，否则会影响整机的可靠性。
4. 本说明书如有版本变更不另外告知。

### NOTE

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3. Please do not exceed the absolute maximum ratings of the device when circuit designing.
4. Jilin Sino-microelectronics co., Ltd reserves the right to make changes in this. specification sheet and is subject to change without prior notice.

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