

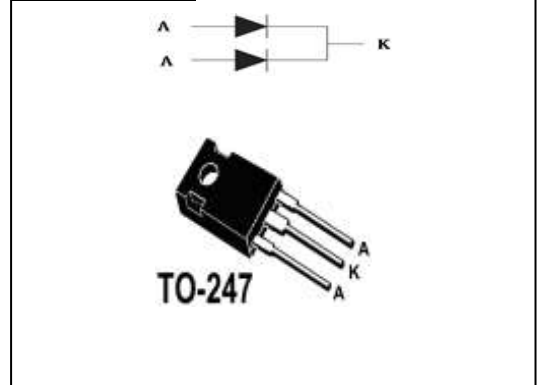


SC40J120B

主要参数 MAIN CHARACTERISTICS

V_{RRM}	1200V
$I_F, T_C \leq 150^\circ\text{C}$	40A**
$Q_C \text{ Typ}$	114nC*

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

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		
SC40J120B-GE-BR	SC40J120B	TO-247



绝对最大额定值 ABSOLUTE RATINGS (Tc=25℃)

项 目 Parameter	符 号 Symbol	数 值 Value	单 位 Unit
反向重复峰值电压 Repetitive Peak Reverse Voltage	V_{RRM}	1200	V
反向浪涌峰值电压 Surge Peak Reverse Voltage	V_{RSM}	1200	V
反向直流电压 DC Blocking Voltage	V_{DC}	1200	V
正向平均电流 Continuous Forward Current	I_F Tc=150℃	20* 40**	A
正向重复浪涌电流 Repetitive Peak Forward Surge Current	I_{FRM}	100	A
正向非重复浪涌电流 Non-Repetitive Peak Forward Surge Current	I_{FSM}	160	A
非重复正向峰值电流 Non-Repetitive Peak Forward Current	$I_{F,Max}$	1200	A
最高结温及存储温度 Operating and Storage Temperature Range	T_J, T_{STG}	-55~+175	℃
引线最高焊接温度 Maximum Lead Temperature for Soldering Purposes	T_L	300	℃

*Per Leg, ** Per Device

**电特性 ELECTRICAL CHARACTERISTICS**

项 目 Parameter	符 号 Symbol	测试条件 Tests conditions	最小 Min	典型 Typ	最大 Max	单位 Units
正向电压 Forward Voltage	V_F	$I_F = 20A$ $T_J = 25^\circ C$ $I_F = 20A$ $T_J = 175^\circ C$	-	1.5 2.2	1.8 3.0	V
反向电流 Reverse Current	I_R	$V_R = 1200 V$ $T_J = 25^\circ C$ $V_R = 1200 V$ $T_J = 175^\circ C$		2 20	20 100	μA
总储存电荷 Total Capacitive Charge	Q_C	$V_R = 800V$, $T_J = 25^\circ C$ $Q_C = \int_0^{V_R} C(V)dV$		114		nC
总电容 Total Capacitance	C	$V_R = 0 V$, $T_J = 25^\circ C$, $f = 1 MHz$ $V_R = 400V$, $T_J = 25^\circ C$, $f = 1 MHz$ $V_R = 800V$, $T_J = 25^\circ C$, $f = 1 MHz$		1300 103 85		pF
电容储存能量 Capacitance Stored Energy	E_C	$V_R = 800 V$		15.6		μJ

热特性 THERMAL CHARACTERISTICS

项 目 Parameter	符 号 Symbol	典型值 Typ	单 位 Unit
		TO-247	
结到管壳的热阻 Thermal Resistance Junction to Case	$R_{th(j-c)}$	0.5	$^\circ C/W$





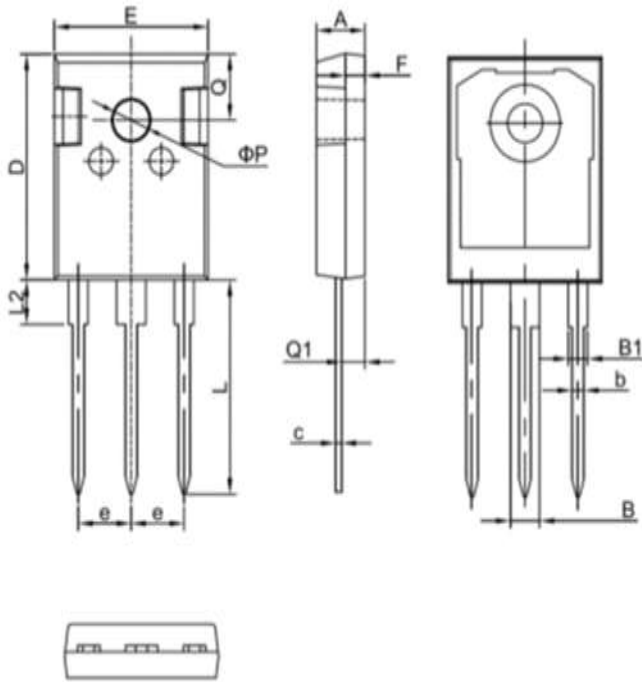
典型性能 Typical Performance

<p>The graph shows forward current I_F (mA) on the y-axis (0 to 20) versus forward voltage V_F (V) on the x-axis (0 to 2). Five curves are shown for different temperatures: -55°C, 25°C, 100°C, 150°C, and 175°C. The curves show that for a given forward voltage, the forward current increases as the temperature increases.</p>	<p>The graph shows reverse current I_R (µA) on the y-axis (0 to 50) versus reverse voltage V_R (V) on the x-axis (0 to 1200). Five curves are shown for different temperatures: -55°C, 25°C, 100°C, 150°C, and 175°C. The reverse current increases with both reverse voltage and temperature.</p>
<p>Forward Characteristics</p>	<p>Reverse Characteristics</p>
<p>The graph shows capacitance C (pF) on the y-axis (0 to 1200) versus reverse voltage V_R (V) on the x-axis (log scale, 0.1 to 1000). The capacitance decreases as the reverse voltage increases.</p>	<p>The graph shows capacitance charge C_d (nC) on the y-axis (0 to 160) versus reverse voltage V_R (V) on the x-axis (0 to 1200). The capacitance charge increases with reverse voltage.</p>
<p>Capacitance vs. Reverse Voltage</p>	<p>Capacitance Charge vs. Reverse Voltage</p>
<p>The graph shows Maximum Dissipated Power, P_{tot} (W) on the y-axis (0 to 300) versus Case Temperature, T_c (°C) on the x-axis (25 to 175). The maximum dissipated power decreases linearly as the case temperature increases.</p>	
<p>Power dissipation as function of case temperature</p>	



TO-247

单位 Unit: mm



符号 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

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