



# SC40J120B

## 产品特性 ( Feature )

- 零反向恢复电流

No reverse recovery current

- 正温度系数

Positive temperature coefficient

- 不受温度影响的开关特性

Temperature independent switching behavior

- 低压降、高工作温度

Low forward voltage and high operating temperature

- 优异的浪涌电流能力

Excellent surge current capability

$V_{RRM}$	1200	V
$I_F, T_C \leq 137^\circ C$	40	A
$Q_C \text{ Typ}$	127.6	nC



## 产品优点 ( Benefits )

- 降低电磁干扰

Reduce EMI

- 高功率密度，可用于更高的工作频率

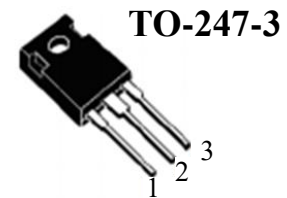
High power density, enable higher frequency

- 降低散热要求，节约系统成本和尺寸

Reduce cooling requirements, save system cost and size

- 极大提升系统效率

Significantly improve system efficiency



## 应用领域 ( Applications )

- 光伏逆变器

Solar inverters

- 功率因数校正

Power Factor Correction

- 不间断电源

Uninterruptable power supplies

- 电机驱动

Motor drives

## 订货型号 ( Order Message )

订货型号 Order codes		印记 Marking	封装 Package
有卤-条管 Halogen-Tube	无卤-条管 Halogen Free-Tube		
SC40J120B-GE-B	SC40J120B-GE-BR	SC40J120B	TO-247-3



额定值 Maximum ratings

Symbol	Parameter	Value	Unit	Test Conditions	Note
V <sub>RRM</sub>	反向重复峰值电压 Repetitive Peak Reverse Voltage	1200	V		
V <sub>RSM</sub>	反向浪涌峰值电压 Surge Peak Reverse Voltage	1200	V		
V <sub>DC</sub>	反向直流电压 DC Blocking Voltage	1200	V		
I <sub>F</sub>	正向平均电流 Continuous Forward Current	20 * 40 **	A	T <sub>C</sub> =150°C	
I <sub>FSM</sub>	正向非重复浪涌电流 Non-Repetitive Peak Forward Surge Current	160	A	T <sub>C</sub> =25°C, t <sub>p</sub> =10ms, Half Sine Wave	
T <sub>J</sub> , T <sub>stg</sub>	工作温度和存储温度 Operating Junction and Storage Temperature	-55 to +175	°C		

\*Per Leg, \*\* Per Device

电学特性 (单管芯) Electrical Characteristics, (Per Leg)

Symbol	Parameter	Typ.	Max.	Unit	Test Conditions	Note
V <sub>F</sub>	正向电压 Forward Voltage	1.5 2.1	1.8 2.4	V	I <sub>F</sub> = 20 A T <sub>J</sub> =25°C I <sub>F</sub> = 20 A T <sub>J</sub> =175°C	Fig. 1
I <sub>R</sub>	反向电流 Reverse Current	5 10	20 100	μA	V <sub>R</sub> = 1200 V T <sub>J</sub> =25°C V <sub>R</sub> = 1200 V T <sub>J</sub> =175°C	Fig. 2
Q <sub>C</sub>	总储存电荷 Total Capacitive Charge	127.6		nC	V <sub>R</sub> = 600V, T <sub>J</sub> = 25°C Q <sub>C</sub> = ∫ <sub>0</sub> <sup>V<sub>R</sub></sup> C(V)dV	Fig. 4
C	总电容 Total Capacitance	1804.2 118.9 90.3		pF	V <sub>R</sub> = 0 V, T <sub>J</sub> = 25°C, f = 1 MHz V <sub>R</sub> = 400 V, T <sub>J</sub> = 25°C, f = 1 MHz V <sub>R</sub> = 800 V, T <sub>J</sub> = 25°C, f = 1 MHz	Fig. 3

热性能(Thermal Characteristics)

Symbol	Parameter	Typ.	Unit	Note
R <sub>θJC</sub>	Thermal Resistance from Junction to Case	0.55	°C/W	

性能曲线图 Performance curve

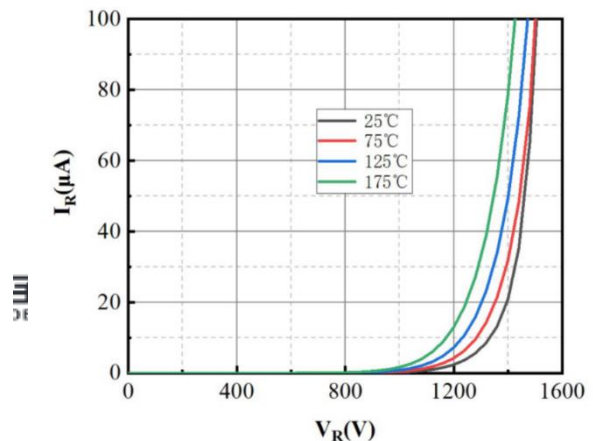
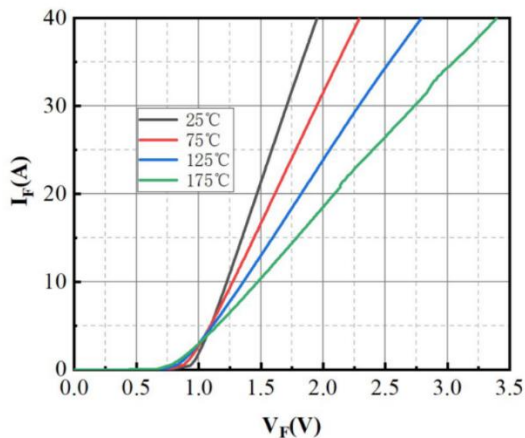




Figure 1. Forward Characteristics

Figure 2. Reverse Characteristics

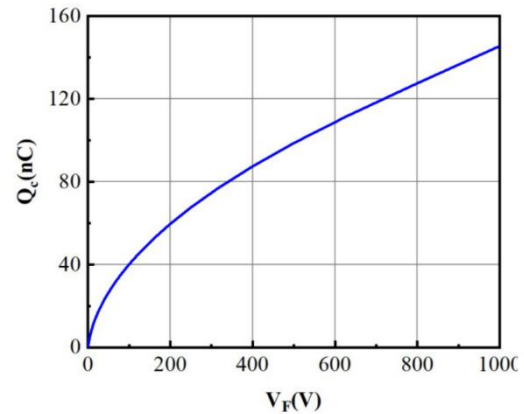
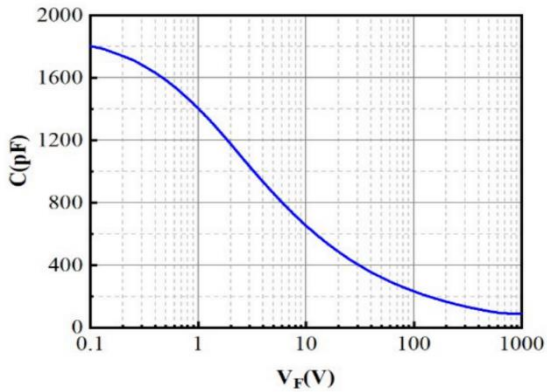
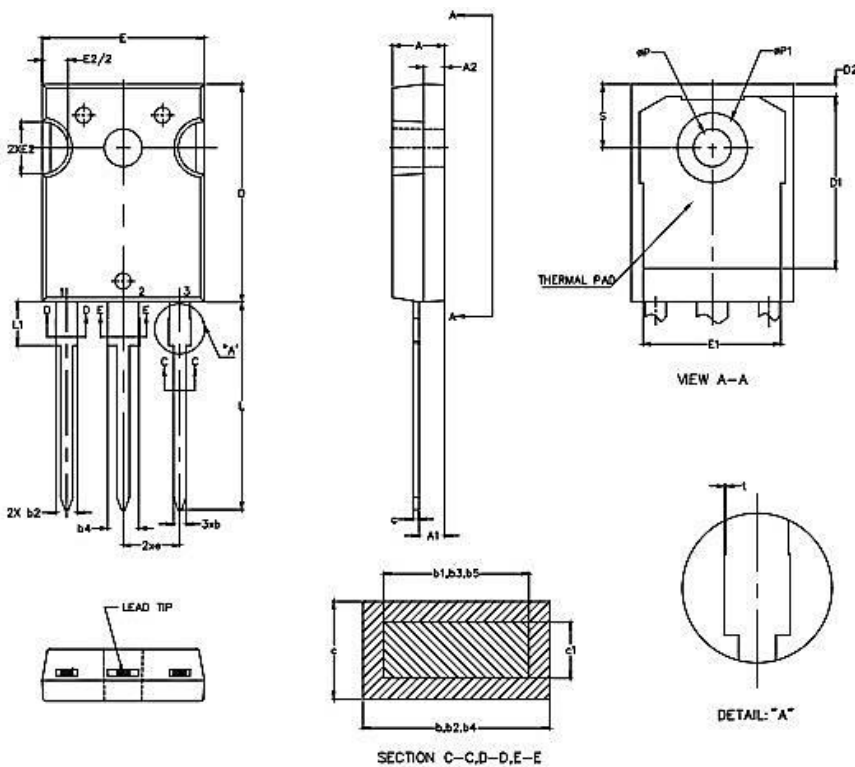


Figure 3. Capacitance vs. Reverse Voltage

Figure 4. Capacitance Charge vs. Reverse Voltage

**Package Dimensions: TO-247-3**



DIMENSION	DIMENSIONS			
	mm		inch	
	MIN.	MAX.	MIN.	MAX.
A	4.90	5.10	0.193	0.201
A1	2.31	2.51	0.091	0.099
A2	1.90	2.10	0.075	0.083
b	1.16	1.26	0.046	0.050
b1	1.15	1.22	0.045	0.048
b2	1.96	2.06	0.077	0.081
b3	1.95	2.02	0.077	0.080
b4	2.96	3.06	0.117	0.120
b5	2.95	3.02	0.116	0.119
c	0.59	0.66	0.023	0.026
c1	0.58	0.62	0.023	0.024
D	20.90	21.10	0.823	0.831
D1	16.25	16.85	0.640	0.663
D2	1.05	1.35	0.041	0.053
E	15.75	15.90	0.620	0.626
E1	13.26	—	0.552	—
E2	4.90	5.10	0.193	0.201
e	5.44BSC		0.214BSC	
L	19.80	20.10	0.780	0.791
L1	—	4.30	—	0.169
øP	3.50	3.70	0.138	0.146
øP1	—	7.40	—	0.291
S	6.05	6.25	0.238	0.246
t	0.00	0.15	0.000	0.006

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