

BRSC10650AC

Rev.A Mar.-2023



DATA SHEET

描述 / Descriptions

TO-220AC 塑封封装 SiC 肖特基二极管。

SiC Schottky Barrier Diode in a TO-220AC Plastic Package.

特征 / Features

损耗低，效率高。

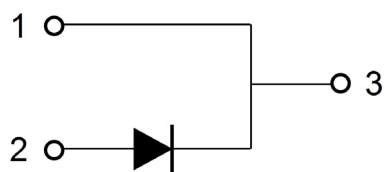
Low power loss, high efficiency.

用途 / Applications

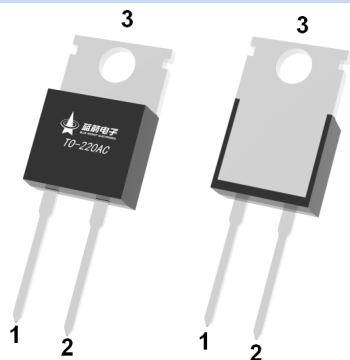
用于高频、高压、大电流整流二极管，续流二极管。

For high frequency, high voltage, high current rectifier diode, freewheeling diode.

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



PIN 1,3 : Cathode PIN2 : Anode

印章代码 / Marking

见印章说明。See Marking Instructions

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极限参数 / Absolute Maximum Ratings(Ta=25°C)

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Peak Repetitive Reverse Voltage	V_{RRM}	650	V
Continuous Forward Current	$I_F(T_C=25^{\circ}C)$	32	A
	$I_F(T_C=135^{\circ}C)$	15	
	$I_F(T_C=154^{\circ}C)$	10	
Peak forward surge current	$I_{FSM}, T_C=25^{\circ}C, t_p=10ms$	96	
	$I_{FSM}, T_C=110^{\circ}C, t_p=10ms$	83	
Repetitive Peak Forward Surge Current	$I_{FRM}, T_C=25^{\circ}C, t_p=10ms$	85	A ² S
i^2t value	$\int i^2 dt, T_C=25^{\circ}C, t_p=10ms$	60.5	
	$\int i^2 dt, T_C=110^{\circ}C, t_p=10ms$	44	W
Power Dissipation	$P_{tot}, T_C=25^{\circ}C$	127	
	$P_{tot}, T_C=110^{\circ}C$	55	
	$P_{tot}, T_C=150^{\circ}C$	21	°C/W
Thermal resistance, Junction to case	$R_{\theta JC}$	1.175	
Junction Temperature Range	T_j	-55~175	°C
Storage Temperature Range	T_{stg}		

电性能参数 / Electrical Characteristics(Ta=25°C)

参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Reverse Voltage	V_R		650	-	-	V
Forward Voltage	V_F	$I_F=5A, T_C=25^{\circ}C$	-	1.17	-	
		$I_F=10A, T_C=25^{\circ}C$	-	1.37	1.6	
		$I_F=10A, T_C=175^{\circ}C$	-	1.66	-	μA
Instantaneous Reverse Current	I_R (Note 1)	$V_R=650V, T_a=25^{\circ}C$	-	5	60	
		$V_R=650V, T_a=175^{\circ}C$	-	12	-	nC
Total capacitive charge	Q_C	$V_R=400V$	-	30	-	
Total capacitance	C	$V_R=1V, f=1MHZ$	-	455	-	pF
		$V_R=200V, f=1MHZ$	-	57	-	
		$V_R=400V, f=1MHZ$	-	56	-	uJ
Capacitance Stored Energy	E_C	$V_R=400V$	-	4.8	-	

电参数曲线图 / Electrical Characteristic Curve

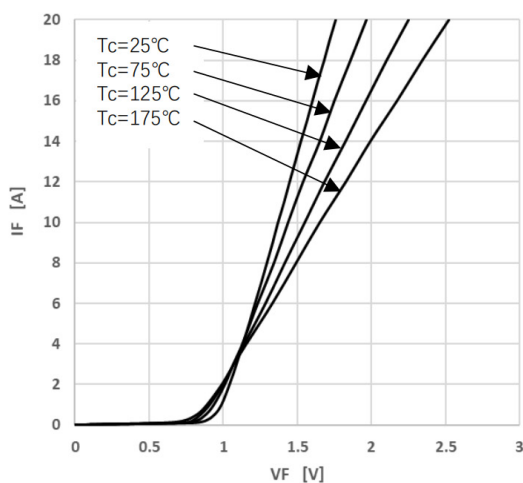


Figure 1 Forward Characteristics

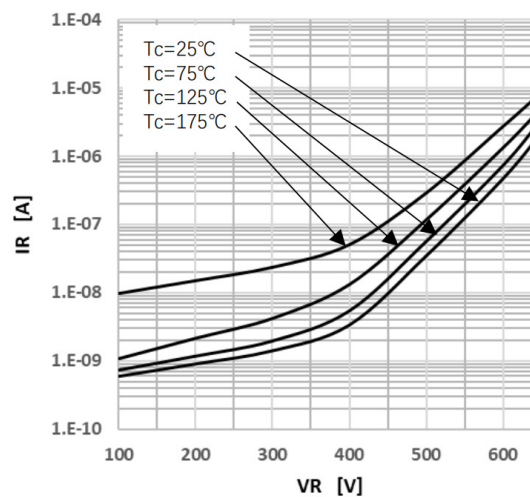


Figure 2 Reverse Characteristics

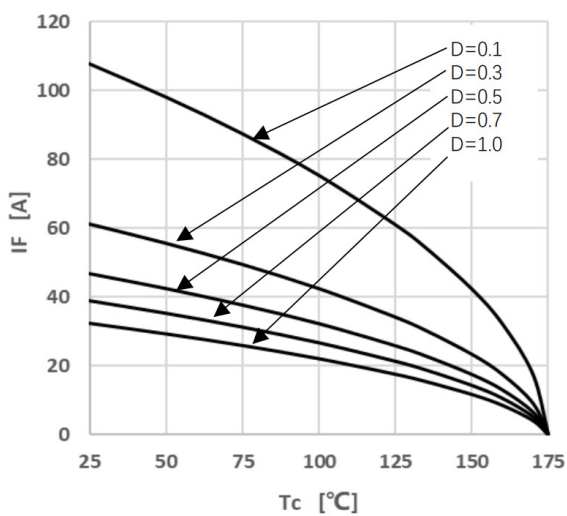


Figure 3 Peak Forward Current Derating

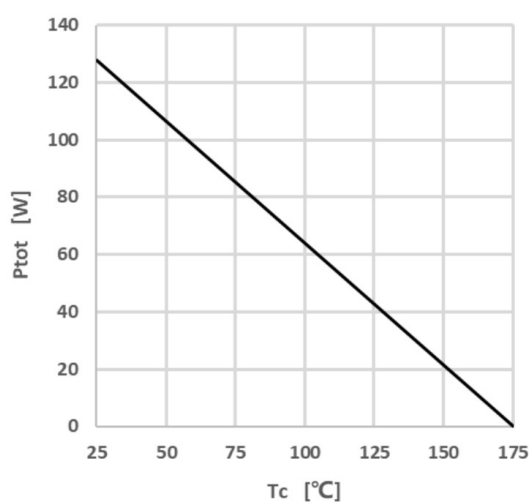


Figure 4 Power Dissipation

电参数曲线图 / Electrical Characteristic Curve

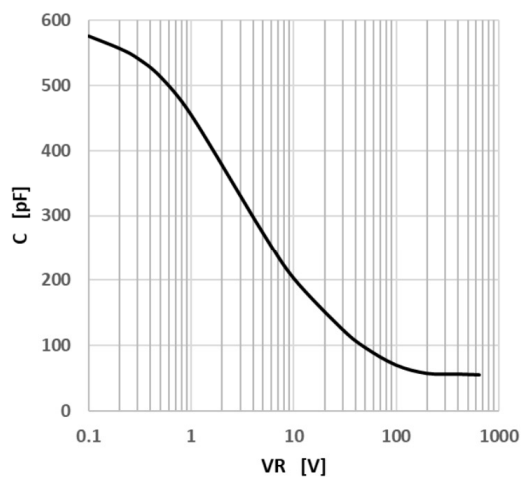


Figure 5 Capacitance vs. Reverse Voltage

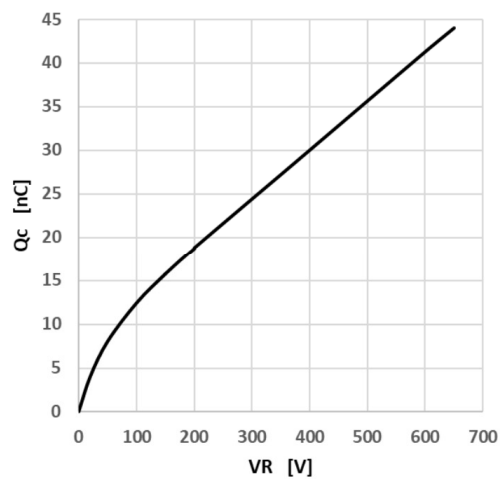


Figure 6 Capacitance Charge vs. Reverse Voltage

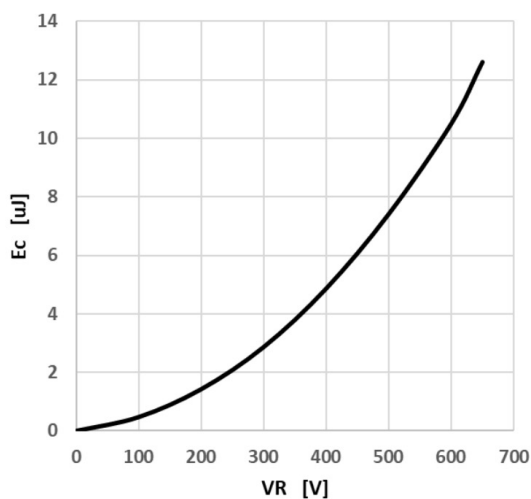


Figure 7 Capacitance Stored Energy

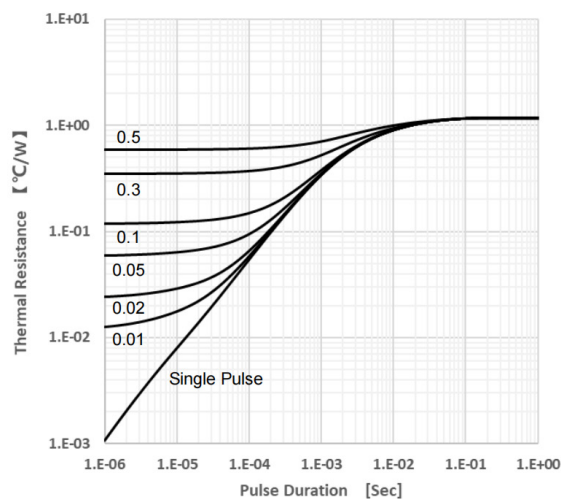
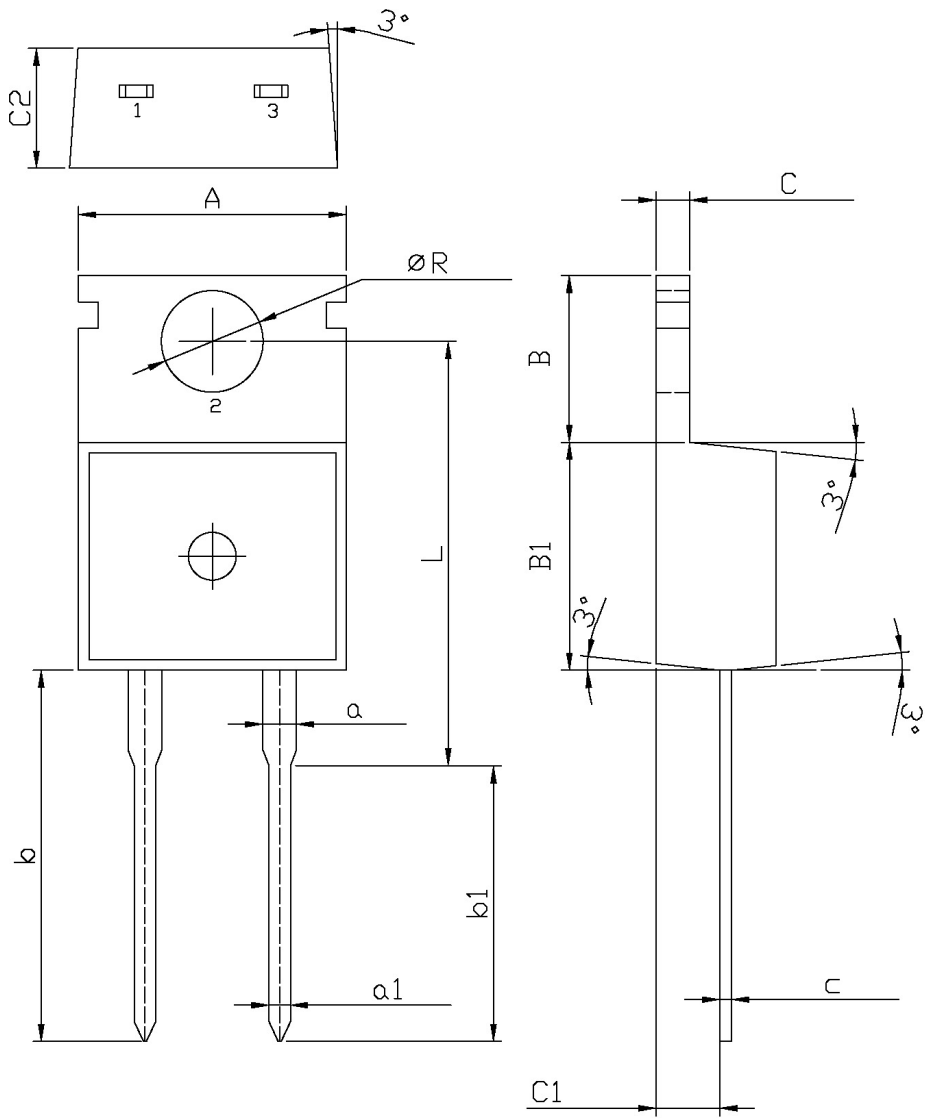


Figure 8 Transient Thermal Impedance

外形尺寸图 / Package Dimensions

T□-220AC Unit:mm



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	9.8	10.2	B	6.3	6.7
R	3.56	3.64	B1	9.0	9.4
L	15.7	16.1	C1	2.2	2.6
b	12.6	13.6	C	1.2	1.4
b1	9.6	10.6	c	0.4	0.6
a	1.22	1.32	C2	4.3	4.7
a1	0.7	0.9			

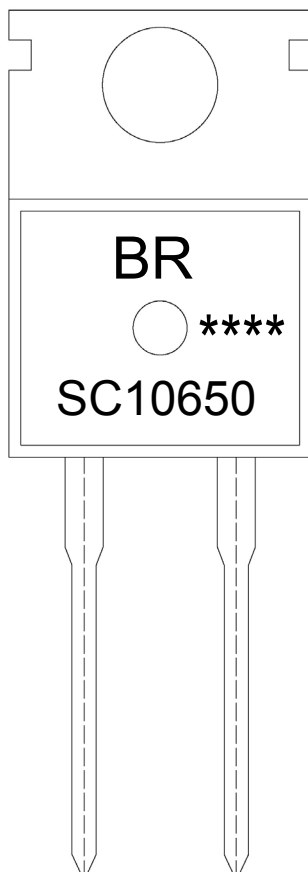
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印章说明 / Marking Instructions



说明：

BR： 为公司代码

SC10650： 为产品型号

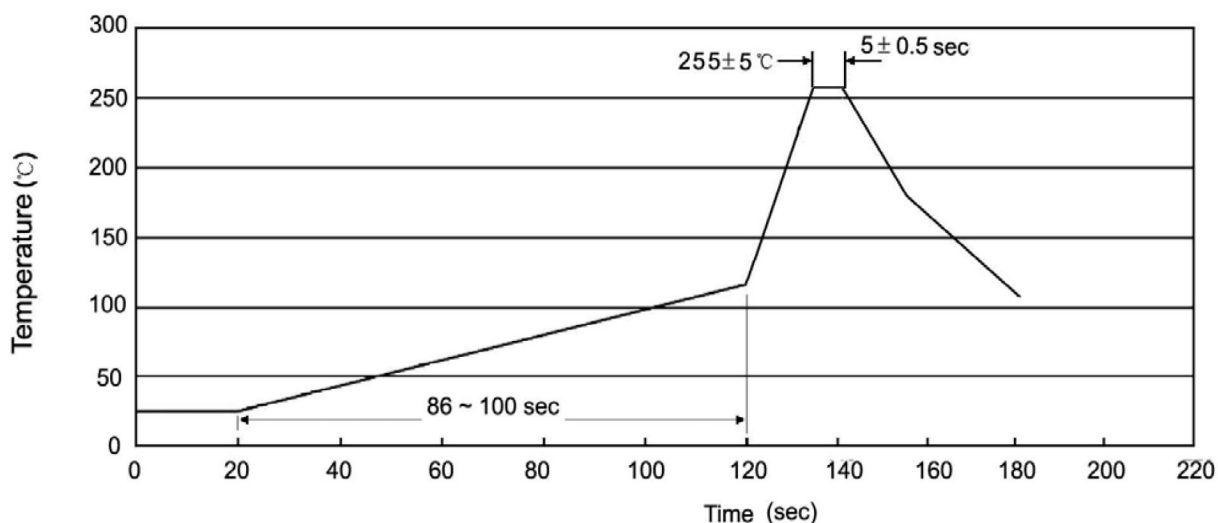
****： 为生产批号代码，随生产批号变化

Note:

BR: Company Code

SC10650： Product Type

****: Lot No. Code, code change with Lot No

波峰焊温度曲线图(无铅) / Temperature Profile for Dip Soldering(Pb-Free)


说明：

- 1、预热温度 25 ~ 150°C，时间 60 ~ 90sec;
- 2、峰值温度 255±5°C，时间持续为 5±0.5sec;
- 3、焊接制程冷却速度为 2 ~ 10°C/sec.

Note:

- 1.Preheating:25~150°C, Time:60~90sec.
- 2.Peak Temp.:255±5°C, Duration:5±0.5sec.
3. Cooling Speed: 2~10°C/sec.

耐焊接热试验条件 / Resistance to Soldering Heat Test Conditions

温度：270±5°C

时间：10±1 sec.

Temp.:270±5°C

Time:10±1 sec

包装规格 / Packaging SPEC.

散件包装 / BULK

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	Units/Bag 只/袋	Bags/Inner Box 袋/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Bag 袋	Inner Box 盒	Outer Box 箱
TO-220/F/AC/FAC	200	10	2,000	5	10,000	135×190	237×172×102	560×245×195

套管包装 / TUBE

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	Units/Tube 只/套管	Tubes/Inner Box 套管/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Tube 套管	Inner Box 盒	Outer Box 箱
TO-220/F/AC/FAC	50	20	1,000	5	5,000	532×31.4×5.5	555×164×50	575×290×180

使用说明 / Notices