



BAS21-Q/A/C/S

SOT-23 Switching Diode

SOT-23 开关二极管

1. Description 描述

High-voltage switching diode encapsulated in a small SOT-23 Surface-Mounted Device (SMD) plastic package.

这种高压开关二极管采用小型 SOT-23 表面贴装 (SMD) 塑料封装。

2. Features 特性

Feature 特性	Description 描述
Low leakage current 低漏电流	$I_R \leq 100nA @ V_R = 200V$
Reverse Voltage 反向电压	$V_R \leq 200V$
Applications 应用	<ul style="list-style-type: none">• High-speed switching at high voltage 高压下高速开关• High-voltage general-purpose switching applications 高压通用开关应用场景• Voltage clamping 电压箝位• Reverse polarity protection 反极性保护
Environmental Compliance 环保合规	Totally Lead-Free & Fully RoHS Compliant. 完全无铅和符合 RoHS 标准 ^[1] Halogen and Antimony Free, "Green" Device. 无卤素和无锑, “绿色”器件 ^[2]
Automotive Compliance 汽车合规	Qualified according to AEC-Q101 and recommended for use in automotive applications. 通过了 AEC-Q101 认证, 推荐用于汽车电子应用场景。

[1] No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.

无铅, 完全符合欧盟标准 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) 和 2015/863/EU (RoHS 3)。

[2] Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

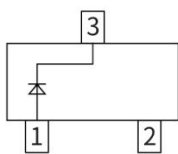
无卤素和无锑的“绿色”产品指溴含量<900ppm, 氯含量<900ppm (溴+氯总含量<1500ppm) 和锑化合物含量<1000ppm。

3. Mechanical Data 封装数据

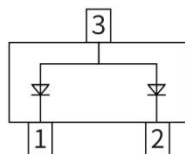
Feature 特性	Description 描述
Package 封装	SOT-23
Moisture Sensitivity Level 湿敏感度等级	J-STD-020 MSL1
Material 材料	Molded Plastic, "Green" Molding Compound; UL Flammability Classification Rating 94V-0. 模塑塑料封装, "绿色" 成型复合材料; UL 可燃性等级 94V-0.
Dimensions 尺寸	1.9mm pitch; 2.9mm × 1.3mm × 1.0mm body 相邻引脚中心距为 1.9mm, 封装本体 (不含引脚) 尺寸为 2.9mm × 1.3mm × 1.0mm
Terminals Compliance 引脚合规	3 terminals, Tin Plated Leads, Solderable per MILSTD-202, Method 208 ^③ 3 个镀锡引脚, 可焊性符合 MIL-STD-202 标准中 208 方法 e3 条款的要求
Weight 重量	0.008 grams (Approximate) 约 0.008 克
Polarity 极性	See Diagrams Below 极性见下图



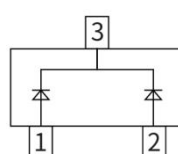
SOT-23 Top View



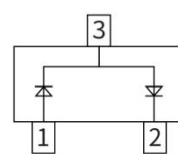
BAS21-Q



BAS21A



BAS21C



BAS21S

4. Ordering Information 订购信息

Part Number	Compliance	Package	Reel Size (inches)	Tape Width (mm)	Quantity Per Reel
BAS21-Q	Automotive	SOT-23	7	8	3000
BAS21A	Automotive	SOT-23	7	8	3000
BAS21C	Automotive	SOT-23	7	8	3000
BAS21S	Automotive	SOT-23	7	8	3000



5. Marking Information 丝印信息

Part Number	Marking Code
BAS21-Q	JS
BAS21A	JS2
BAS21C	JS3
BAS21S	JS4

6. Absolute Maximum Ratings($T_a = +25^\circ\text{C}$) 绝对最大额定值

Characteristic 特性	Symbol 符号	Value 值	Unit 单位
Repetitive Peak Reverse Voltage 重复峰值反向电压	V_{RRM}	250	V
DC Reverse Voltage 直流反向电压	V_R	200	V
Forward Work Current 正向工作电流	$I_F(I_O)$	200	mA
Peak Forward Current 正向峰值电流	I_{FRM}	625	mA

7. Thermal Characteristics($T_a = +25^\circ\text{C}$) 热特性

Characteristic 特性	Symbol 符号	Value 值	Unit 单位
Power Dissipation 耗散功率	P_D	225	mW
Thermal Resistance From Junction To Ambient 结到环境的热阻	$R_{\theta JA}$	555	$^\circ\text{C}/\text{W}$
Junction Temperature 结温	T_J	-55 ~ +150	$^\circ\text{C}$
Storage Temperature 储藏温度	T_{stg}	-55 ~ +150	$^\circ\text{C}$

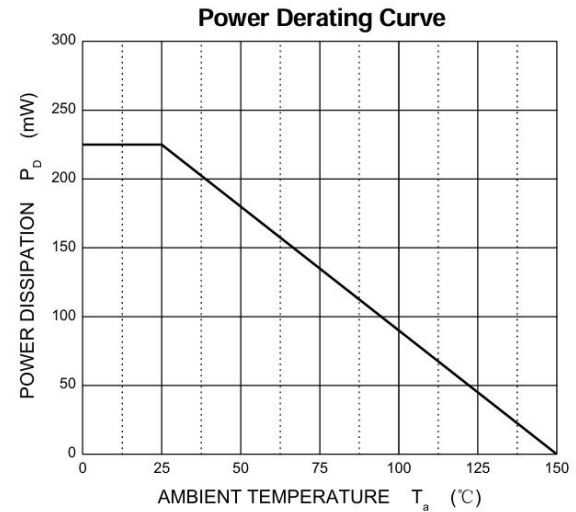
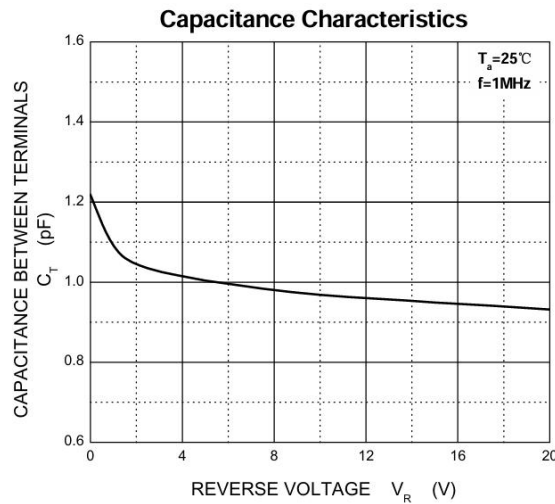
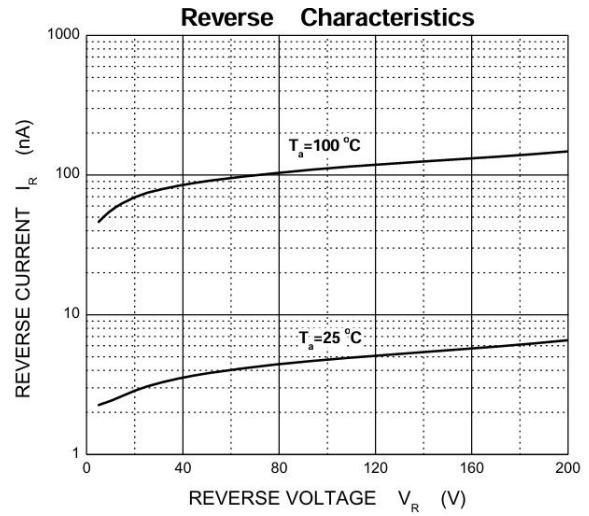
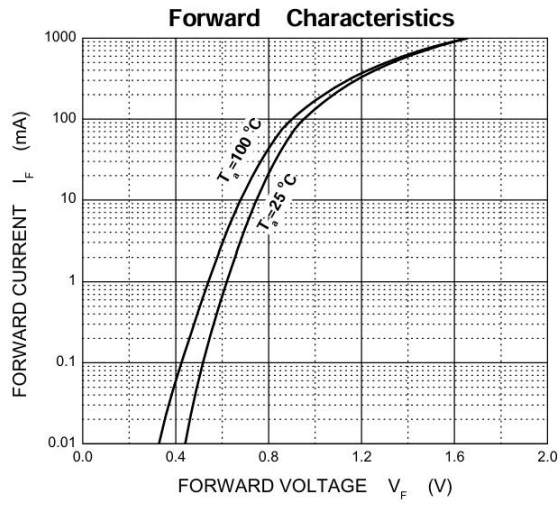


8. Electrical Characteristics($T_a = + 25^\circ\text{C}$) 电特性

Characteristic 特性	Symbol 符号	Min. 最小值	Typ. 典型值	Max. 最大值	Unit 单位	Conditions 条件
Reverse Breakdown Voltage 反向击穿电压	$V_{(BR)}$	250	-	-	V	$I_R = 100\mu A$
Reverse Leakage Current 反向漏电流	I_R	-	-	100	nA	$V_R = 200V$
Forward Voltage 正向电压	V_F	-	-	1	V	$I_F = 100mA$
		-	-	1.25	V	$I_F = 200mA$
Diode Capacitance 二极管电容	C_D	-	-	5	pF	$V_R = 0, f = 1MHz$
Reverse Recovery Time 反向恢复时间	t_{rr}	-	-	50	ns	-

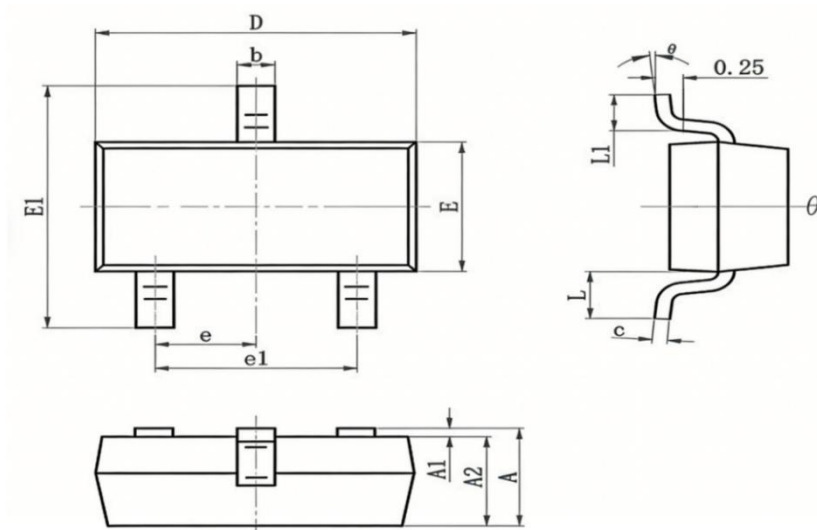


9. Typical Electrical Characteristics Curve 典型电特性曲线



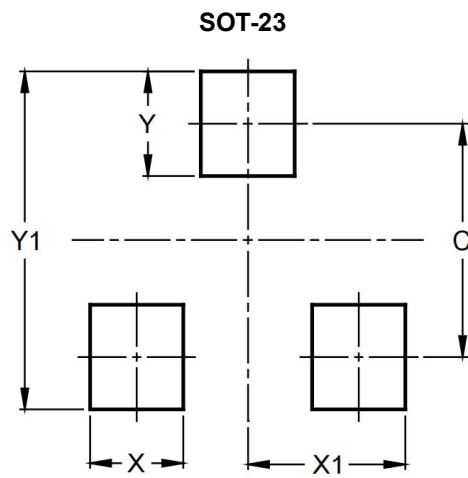
10. Package Outline Dimensions 封装外形尺寸

SOT-23



Symbol 符号	Millimeters 毫米	
	Min.最小值	Max.最大值
A	0.900	1.150
A1	0	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.900	1.000
e1	1.800	2.000
L	0.500	0.600
L1	0.300	0.500
θ	0°	8°

11. Suggested Pad Layout 推荐焊盘布局



Dimensions 尺寸	Millimeters 毫米
C	2.0
X	0.8
X1	1.35
Y	0.9
Y1	2.9

Fig. Soldering footprint for SOT-23

图 SOT-23 的引脚焊接



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