

# BRBZX84CXXXQ

Rev.A Sep.-2022

## 描述 / Descriptions

SOT-23 塑封封装稳压二极管。

Zener Diode in a SOT-23 Plastic Package.

## 特征 / Features

300mW 功耗，非常适合于自动化装配流程，符合 AEC-Q101 标准高可靠性要求，无卤产品。

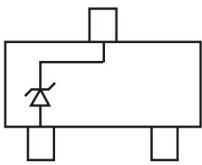
300mW power dissipation, Ideally Suited for Automated Assembly, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

## 用途 / Applications

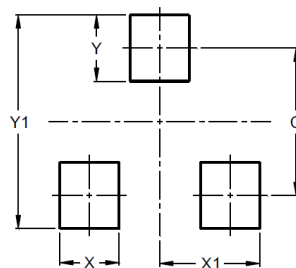
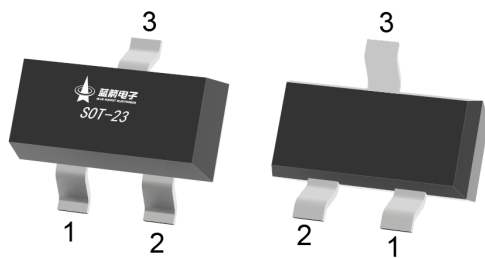
适用于 2.4V-51V 的宽范围稳压电路，满足汽车应用的严格要求。

2.4V to 51V wide zener voltage range applications, Meet the stringent requirements of automotive applications.

## 内部等效电路 / Equivalent Circuit



## 引脚排列 / Pinning



Dimensions	Value (in mm)
C	2.0
X	0.8
X1	1.35
Y	0.9
Y1	2.9

PIN: See Equivalent Circuit.

## 印章代码 / Marking

见电性能参数。 See Electrical Characteristics.

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

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Forward Voltage( I <sub>F</sub> =10mA)	V <sub>F</sub>	0.9	V
Power Dissipation(Note 1)	P <sub>D</sub>	300	mW
Power Dissipation(Note 4)	P <sub>D</sub>	350	mW
Thermal Resistance, Junction to Ambient(Note 1)	R <sub>θJA</sub>	417	°C/W
Thermal Resistance, Junction to Ambient(Note 4)	R <sub>θJA</sub>	357	°C/W
Junction and Storage Temperature Range	T <sub>j</sub> , T <sub>stg</sub>	-65~150	°C

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

Type Number	Marking Code	Zener Voltage Range (Note 2)				Maximum Zener Impedance (Note 3)			Maximum Reverse Current (Note 2)		Typical Temperature Coefficient @I <sub>ZT</sub> mV/°C	
		V <sub>Z</sub> @I <sub>ZT</sub>			I <sub>ZT</sub>	Z <sub>ZT</sub> @I <sub>ZT</sub>	Z <sub>ZK</sub> @I <sub>ZK</sub>	I <sub>R</sub>	V <sub>R</sub>	Min	Max	
		Nom (V)	Min (V)	Max (V)	mA	Ω	Ω	mA	μA			V
BRBZX84C2V4Q	QZB	2.4	2.2	2.6	5.0	100	600	1.0	50	1.0	-3.5	0
BRBZX84C2V7Q	QZC	2.7	2.5	2.9	5.0	100	600	1.0	20	1.0	-3.5	0
BRBZX84C3V0Q	QZD	3.0	2.8	3.2	5.0	95	600	1.0	10	1.0	-3.5	0
BRBZX84C3V3Q	QZE	3.3	3.1	3.5	5.0	95	600	1.0	5.0	1.0	-3.5	0
BRBZX84C3V6Q	QZF	3.6	3.4	3.8	5.0	90	600	1.0	5.0	1.0	-3.5	0
BRBZX84C3V9Q	QZG	3.9	3.7	4.1	5.0	90	600	1.0	3.0	1.0	-3.5	0
BRBZX84C4V3Q	ZHQ	4.3	4.0	4.6	5.0	90	600	1.0	3.0	1.0	-3.5	0
BRBZX84C4V7Q	QZ1	4.7	4.4	5.0	5.0	80	500	1.0	3.0	2.0	-3.5	0.2
BRBZX84C5V1Q	QZ2	5.1	4.8	5.4	5.0	60	480	1.0	2.0	2.0	-2.7	1.2
BRBZX84C5V6Q	QZ3	5.6	5.2	6.0	5.0	40	400	1.0	1.0	2.0	-2.0	2.5
BRBZX84C6V2Q	QZ4	6.2	5.8	6.6	5.0	10	150	1.0	3.0	4.0	0.4	3.7
BRBZX84C6V8Q	QZ5	6.8	6.4	7.2	5.0	15	80	1.0	2.0	4.0	1.2	4.5
BRBZX84C7V5Q	QZ6	7.5	7.0	7.9	5.0	15	80	1.0	1.0	5.0	2.5	5.3
BRBZX84C8V2Q	QZ7	8.2	7.7	8.7	5.0	15	80	1.0	0.7	5.0	3.2	6.2
BRBZX84C9V1Q	QZ8	9.1	8.5	9.6	5.0	15	100	1.0	0.5	6.0	3.8	7.0
BRBZX84C10Q	QZ9	10	9.4	10.6	5.0	20	150	1.0	0.2	7.0	4.5	8.0
BRBZX84C11Q	QY1	11	10.4	11.6	5.0	20	150	1.0	0.1	8.0	5.4	9.0
BRBZX84C12Q	QY2	12	11.4	12.7	5.0	25	150	1.0	0.1	8.0	6.0	10.0
BRBZX84C13Q	QY3	13	12.4	14.1	5.0	30	170	1.0	0.1	8.0	7.0	11.0
BRBZX84C15Q	QY4	15	13.8	15.6	5.0	30	200	1.0	0.1	10.5	9.2	13.0
BRBZX84C16Q	QY5	16	15.3	17.1	5.0	40	200	1.0	0.1	11.2	10.4	14.0

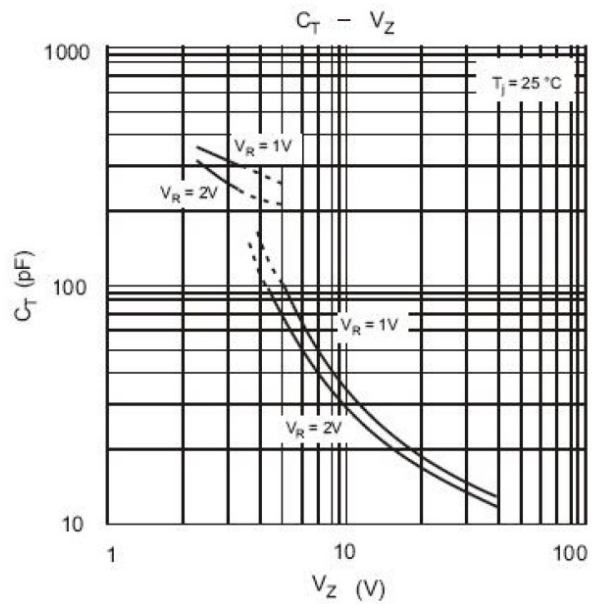
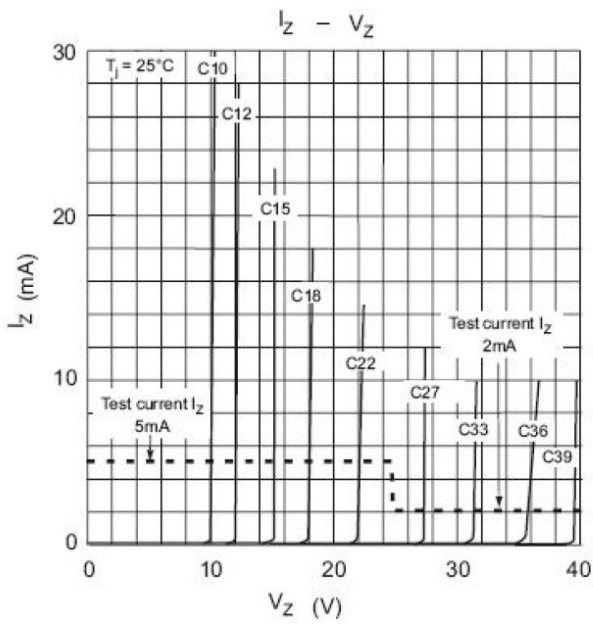
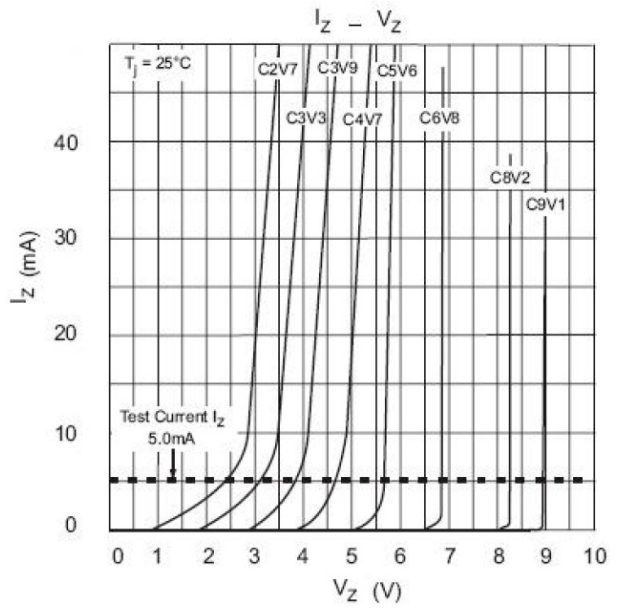
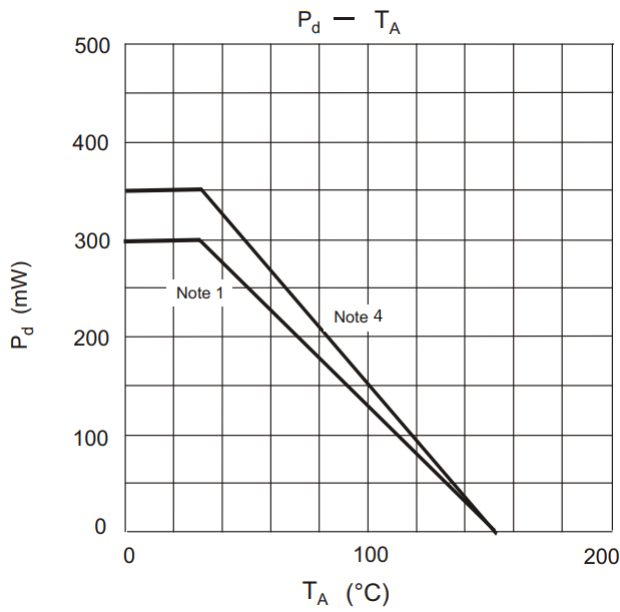
## 电性能参数 / Electrical Characteristics(Ta=25°C)

Type Number	Marking Code	Zener Voltage Range (Note 2)				Maximum Zener Impedance (Note 3)			Maximum Reverse Current (Note 2)		Typical Temperature Coefficient @I <sub>ZT</sub> mV/°C	
		V <sub>Z</sub> @I <sub>ZT</sub>			I <sub>ZT</sub>	Z <sub>ZT</sub> @I <sub>ZT</sub>	Z <sub>ZK</sub> @I <sub>ZK</sub>		I <sub>R</sub>	V <sub>R</sub>	Min	Max
		Nom (V)	Min (V)	Max (V)	mA	Ω	Ω	mA	uA	V		
BRBZX84C18Q	QY6	18	16.8	19.1	5.0	45	225	1.0	0.1	12.6	12.4	16.0
BRBZX84C20Q	QY7	20	18.8	21.2	5.0	55	225	1.0	0.1	14.0	14.4	18.0
BRBZX84C22Q	QY8	22	20.8	23.3	5.0	55	250	1.0	0.1	15.4	16.4	20.0
BRBZX84C24Q	QY9	24	22.8	25.6	5.0	70	250	1.0	0.1	16.8	18.4	22.0
BRBZX84C27Q	QYA	27	25.1	28.9	2.0	80	300	0.5	0.1	18.9	21.4	25.3
BRBZX84C30Q	QYB	30	28.0	32.0	2.0	80	300	0.5	0.1	21.0	24.4	29.4
BRBZX84C33Q	QYC	33	31.0	35.0	2.0	80	325	0.5	0.1	23.1	27.4	33.4
BRBZX84C36Q	QYD	36	34.0	38.0	2.0	90	350	0.5	0.1	25.2	30.4	37.4
BRBZX84C39Q	QYE	39	37.0	41.0	2.0	130	350	0.5	0.1	27.3	33.4	41.2
BRBZX84C43Q	QYF	43	40.0	46.0	2.0	150	375	0.5	0.1	30.1	10.0	12.0
BRBZX84C47 Q	QYG	47	44.0	50.0	2.0	170	375	0.5	0.1	32.9	10.0	12.0
BRBZX84C51Q	QYH	51	48.0	54.0	2.0	180	400	0.5	0.1	35.7	10.0	12.0

## Notes:

- 1.Device mounted on FR-4 PC board with recommended pad layout.
- 2.Short duration test pulse used to minimize self-heating effect.
- 3.f = 1KHz.
- 4.Valid provided the terminals are kept at ambient temperature.

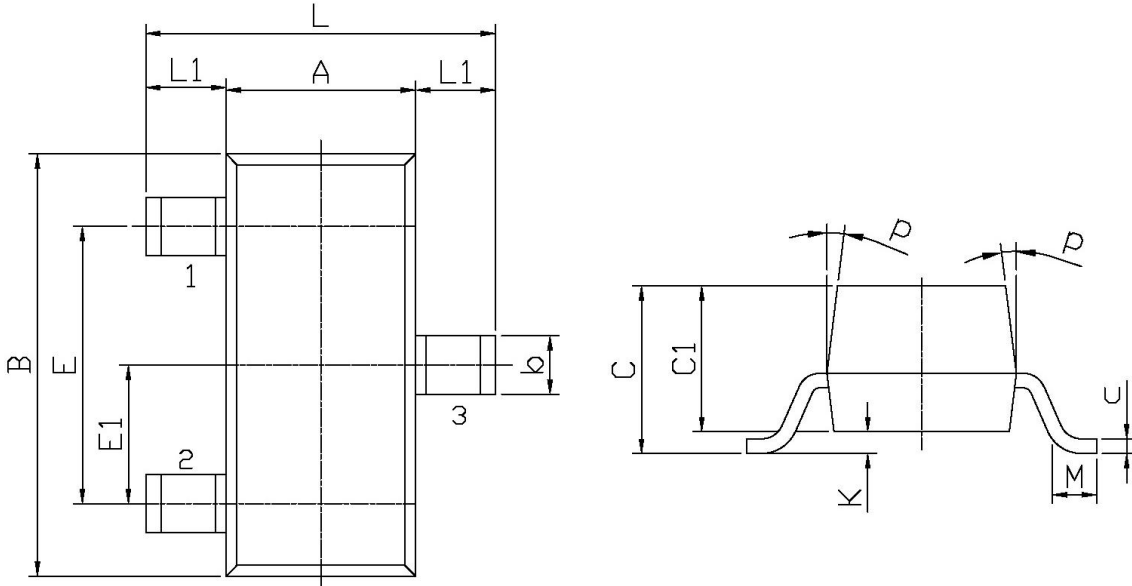
电参数曲线图 / Electrical Characteristic Curve



外形尺寸图 / Package Dimensions

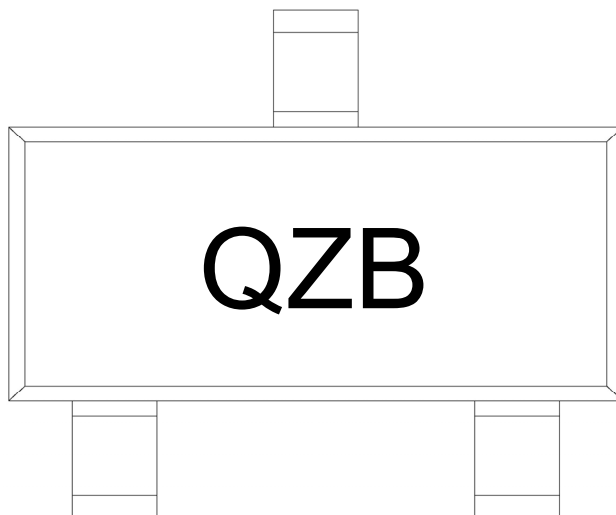
SOT-23

单位: mm



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
L	2.2	2.7	C	1.30Max	
L1	0.45	0.65	C1	0.90	1.20
A	1.15	1.50	c	0.05	0.20
B	2.70	3.10	K	0	0.10
E	1.70	2.10	M	0.20MIN	
E1	0.85	1.05	P	7°	
b	0.35	0.55			

印章说明 / Marking Instructions



说明：

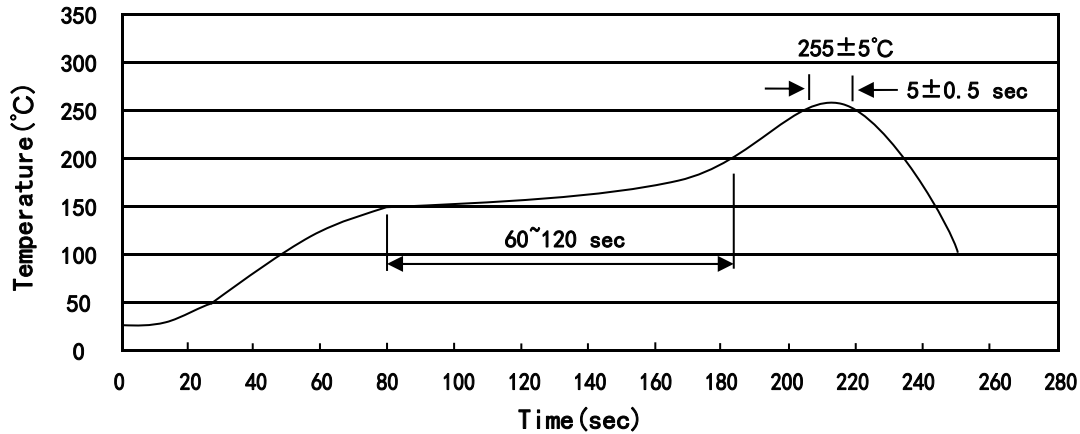
Q： 为汽车无卤产品标识

ZB： 为型号代码

Note:

Q: Automobile halogen-free product Code

ZB: Product Type

**回流焊温度曲线图(无铅) / Temperature Profile for IR Reflow Soldering(Pb-Free)**


说明：

- 1、预热温度 150 ~ 200°C，时间 60 ~ 120sec;
- 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:150~200°C, Time:60~120sec.
- 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：260±5°C

时间：10±1 sec.

Temp.:260±5°C

Time:10±1 sec

**包装规格 / Packaging SPEC.**

卷盘包装 / REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm <sup>3</sup> )		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box 盒	Outer Box 箱
SOT-23	3,000	10	30,000	6	180,000	7" ×8	180×120×180	390×385×205

**使用说明 / Notices**