

# BRBZT52CXXXQ

Rev.A Dec.-2021

## 描述 / Descriptions

SOD-123 塑封封装 稳压二极管。

Zener Diode in a SOD-123 Plastic Package.

## 特征 / Features

500mW 功耗, 中等电流, 自动贴片组装, 符合 AEC-Q101 标准高可靠性要求, 无卤产品。

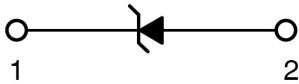
500mW power dissipation, medium current, automated assembly processes, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

## 用途 / Applications

适用于 2.4V-39V 的宽范围稳压电路, 满足汽车应用的严格要求。

2.4V to 39V 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



PIN1:Cathode

PIN2:Anode

## 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 (Note 2) ( $I_F=10\text{mA}$ )	$V_F$	0.9	V
Power Dissipation(Note 1)	$P_D$	500	mW
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	305	°C/W
Junction and Storage Temperature Range	$T_j, T_{stg}$	-65~150	°C

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

Type Number	Mark-ing Code	Zener Voltage Range (Note 2)				Maximum Zener impedance (Note 3)			Maximum Reverse Current (Note 2)		Typical Temperature Coefficient @ $I_{ZTC}$ mV/°C		Test Current $I_{ZTC}$ mA
		$V_z @ I_{ZT}$			$I_{ZT}$	$Z_{ZT} @ I_{ZT}$	$Z_{ZK} @ I_{ZK}$	$I_{ZK}$	$I_R$	@ $V_R$	Min	Max	
		Nom (V)	Min (V)	Max (V)	mA	Ω		mA	uA	V			
BRBZT52C2V4Q	QWX	2.4	2.2	2.6	5	100	600	1	50	1	-3.5	0	5
BRBZT52C2V7Q	QW1	2.7	2.5	2.9	5	100	600	1	20	1	-3.5	0	5
BRBZT52C3V0Q	QW2	3.0	2.8	3.2	5	95	600	1	10	1	-3.5	0	5
BRBZT52C3V3Q	QW3	3.3	3.1	3.5	5	95	600	1	5	1	-3.5	0	5
BRBZT52C3V6Q	QW4	3.6	3.4	3.8	5	90	600	1	5	1	-3.5	0	5
BRBZT52C3V9Q	QW5	3.9	3.7	4.1	5	90	600	1	3	1	-3.5	0	5
BRBZT52C4V3Q	QW6	4.3	4	4.6	5	90	600	1	3	1	-3.5	0	5
BRBZT52C4V7Q	QW7	4.7	4.4	5	5	80	500	1	3	2	-3.5	0.2	5
BRBZT52C5V1Q	QW8	5.1	4.8	5.4	5	60	480	1	2	2	-2.7	1.2	5
BRBZT52C5V6Q	QW9	5.6	5.2	6	5	40	400	1	1	2	-2	2.5	5
BRBZT52C6V2Q	QWA	6.2	5.8	6.6	5	10	150	1	3	4	0.4	3.7	5
BRBZT52C6V8Q	QWB	6.8	6.4	7.2	5	15	80	1	2	4	1.2	4.5	5
BRBZT52C7V5Q	QWC	7.5	7	7.9	5	15	80	1	1	5	2.5	5.3	5
BRBZT52C8V2Q	QWD	8.2	7.7	8.7	5	15	80	1	0.7	5	3.2	6.2	5
BRBZT52C9V1Q	QWE	9.1	8.5	9.6	5	15	100	1	0.5	6	3.8	7	5
BRBZT52C10Q	QWF	10	9.4	10.6	5	20	150	1	0.2	7	4.5	8	5

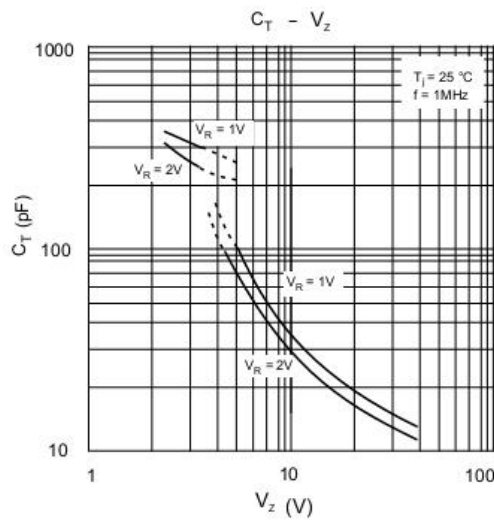
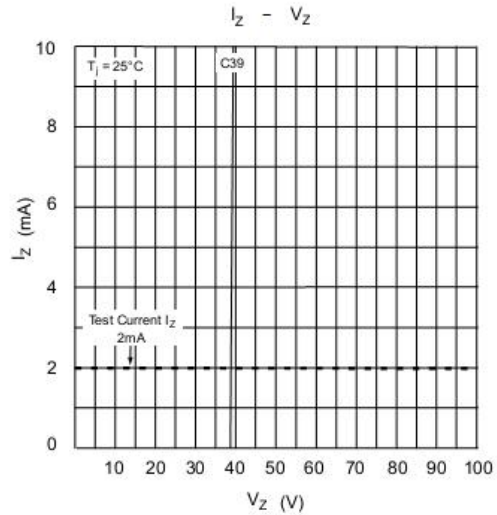
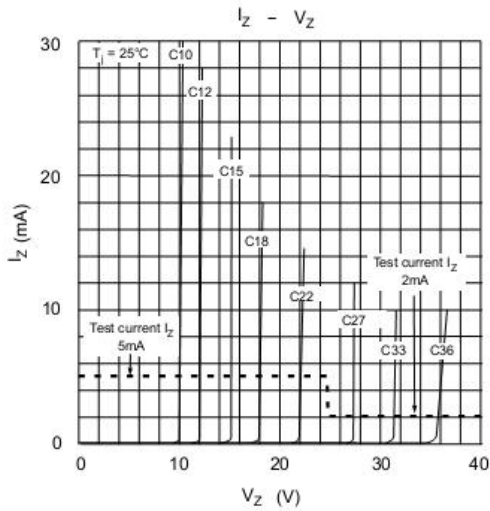
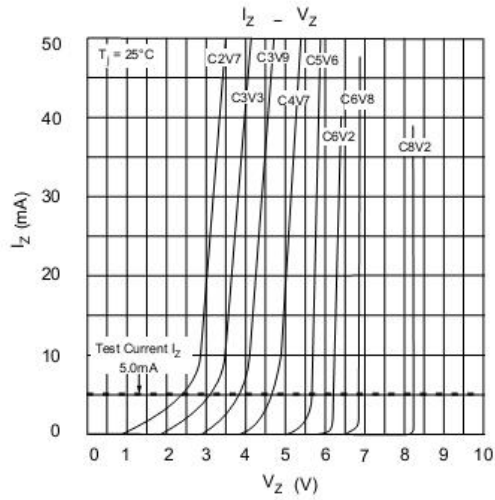
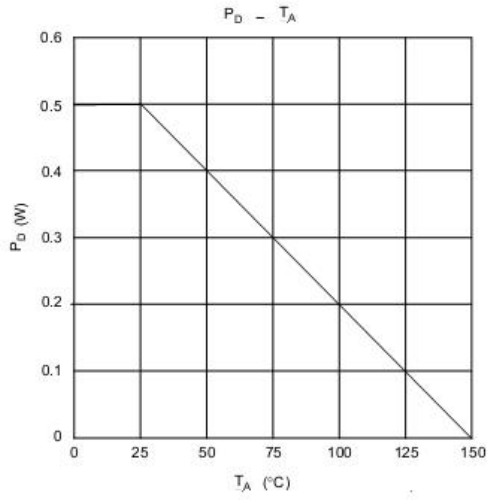
## 电性能参数 / Electrical Characteristics(Ta=25°C)

Type Number	Marking Code	Zener Voltage Range (Note 2)				Maximum Zener Impedance (Note 3)			Maximum Reverse Current (Note 2)		Typical Temperature Coefficient @I <sub>ZTC</sub> mV/°C		Test Current I <sub>ZTC</sub> mA
		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>ZK</sub>	I <sub>R</sub>	@V <sub>R</sub>	Min	Max	
		Nom (V)	Min (V)	Max (V)	mA	Ω		mA	μA	V			
BRBZT52C11Q	QWG	11	10.4	11.6	5	20	150	1	0.1	8	5.4	9	5
BRBZT52C12Q	QWH	12	11.4	12.7	5	25	150	1	0.1	8	6	10	5
BRBZT52C13Q	QWI	13	12.4	14.1	5	30	170	1	0.1	8	7	11	5
BRBZT52C15Q	QWJ	15	13.8	15.6	5	30	200	1	0.1	10.5	9.2	13	5
BRBZT52C16Q	QWK	16	15.3	17.1	5	40	200	1	0.1	11.2	10.4	14	5
BRBZT52C18Q	QWL	18	16.8	19.1	5	45	225	1	0.1	12.6	12.4	16	5
BRBZT52C20Q	QWM	20	18.8	21.2	5	55	225	1	0.1	14	14.4	18	5
BRBZT52C22Q	QWN	22	20.8	23.3	5	55	250	1	0.1	15.4	16.4	20	5
BRBZT52C24Q	QWO	24	22.8	25.6	5	70	250	1	0.1	16.8	18.4	22	5
BRBZT52C27Q	QWP	27	25.1	28.9	2	80	300	0.5	0.1	18.9	21.4	25.3	2
BRBZT52C30Q	QWQ	30	28	32	2	80	300	0.5	0.1	21	24.4	29.4	2
BRBZT52C33Q	QWR	33	31	35	2	80	325	0.5	0.1	23.1	27.4	33.4	2
BRBZT52C36Q	QWS	36	34	38	2	90	350	0.5	0.1	25.2	30.4	37.4	2
BRBZT52C39Q	QWT	39	37	41	2	130	350	0.5	0.1	27.3	33.4	41.2	2

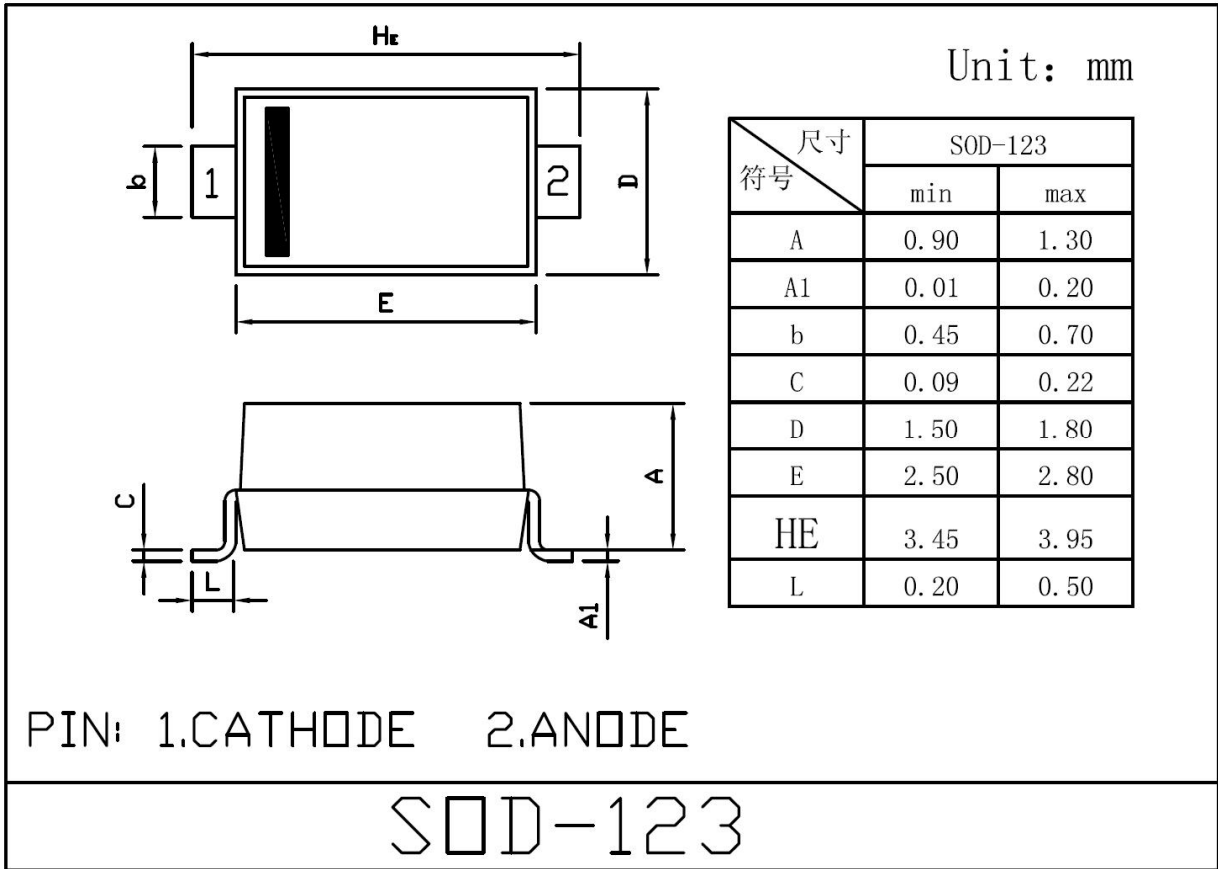
## Notes:

1. Device mounted on ceramic PCB; 7.6mm x 9.4mm x 0.87mm with pad areas 25mm<sup>2</sup>.
2. Short duration test pulse used to minimize self-heating effect.
3. f = 1kHz.

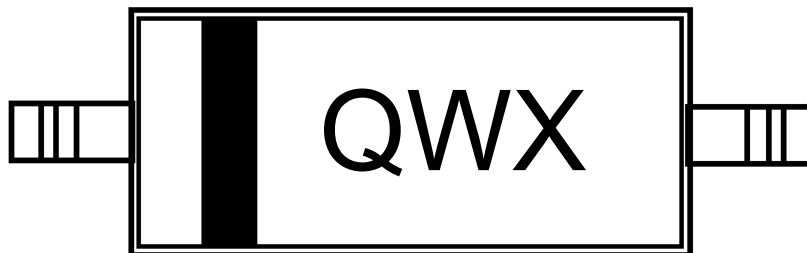
电参数曲线图 / Electrical Characteristic Curve



外形尺寸图 / Package Dimensions



印章说明 / Marking Instructions



说明：

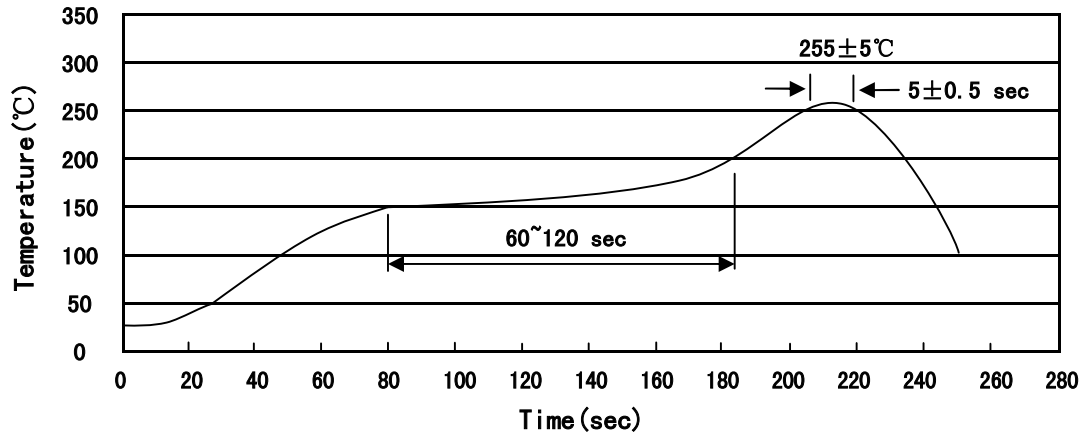
Q： 为汽车无卤产品标识

WX： 为型号代码

Note:

Q: Automobile halogen-free product Code

WX: Product Type Code

**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
SOD-123	3,000	10	30,000	6	180,000	7" × 8	180×120×180	390×385×205

**使用说明 / Notices**