

Rev.A Sep.-2022

SOT-23

Zener Diode in a SOT-23 Plastic Package.

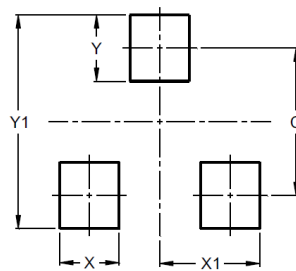
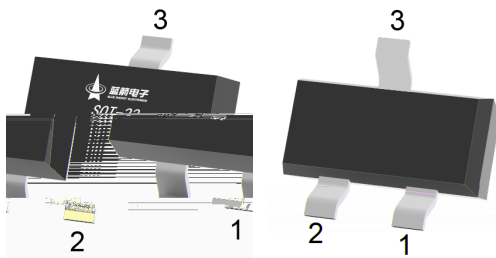
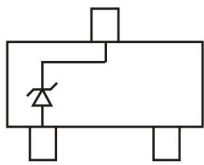
300mW

AEC-Q101

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

2.4V-51V

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



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

PIN: See Equivalent Circuit.

See Electrical Characteristics.

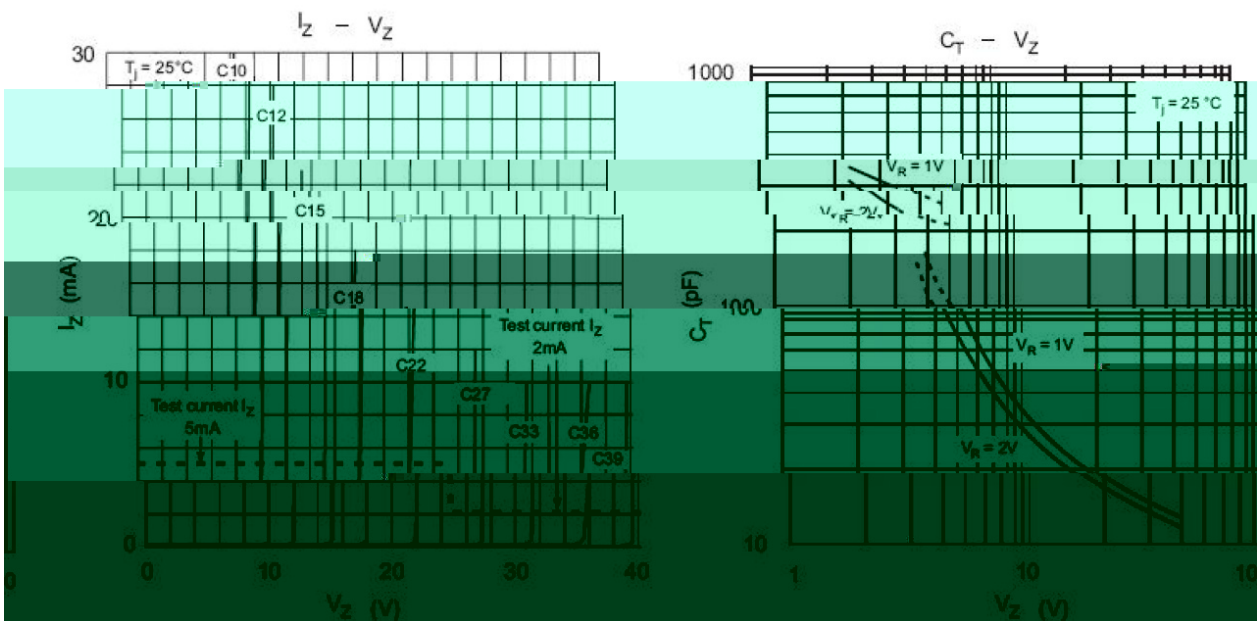
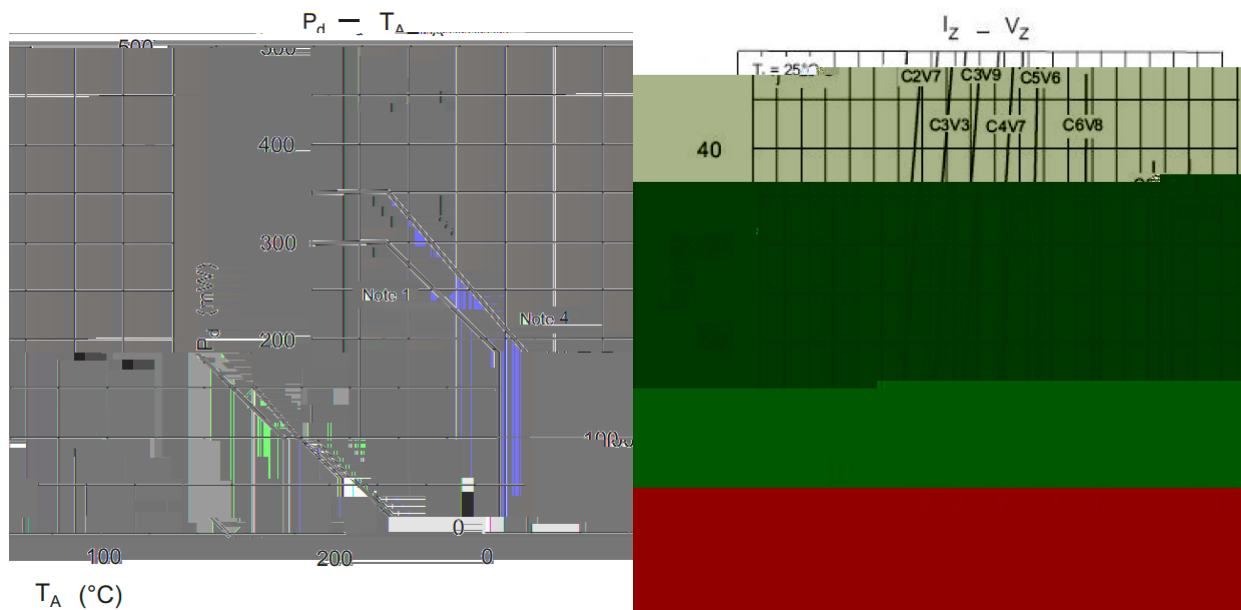
Parameter	Symbol	Rating	Unit
Forward Voltage( $I_F=10mA$ )	$V_F$	0.9	V
Power Dissipation(Note 1)	$P_D$	300	mW
Power Dissipation(Note 4)	$P_D$	350	mW
Thermal Resistance, Junction to Ambient(Note 1)	$R_{JA}$	417	/W
Thermal Resistance, Junction to Ambient(Note 4)	$R_{JA}$	357	/W
Junction and Storage Temperature Range	$T_j, T_{stg}$	-65 150	

Type Number	Marking Code	Zener Voltage Range (Note 2)				Maximum Zener Impedance (Note 3)			Maximum Reverse Current (Note 2)		Typical Temperature Coefficient @ $I_{ZT}$ mV/°C	
		$V_z @ I_{ZT}$			$I_{ZT}$	$Z_{ZT} @ I_{ZT}$	$Z_{ZK} @ I_{ZK}$		$I_R$	$V_R$	Min	Max
		Nom (V)	Min (V)	Max (V)	mA		mA	uA	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

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		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

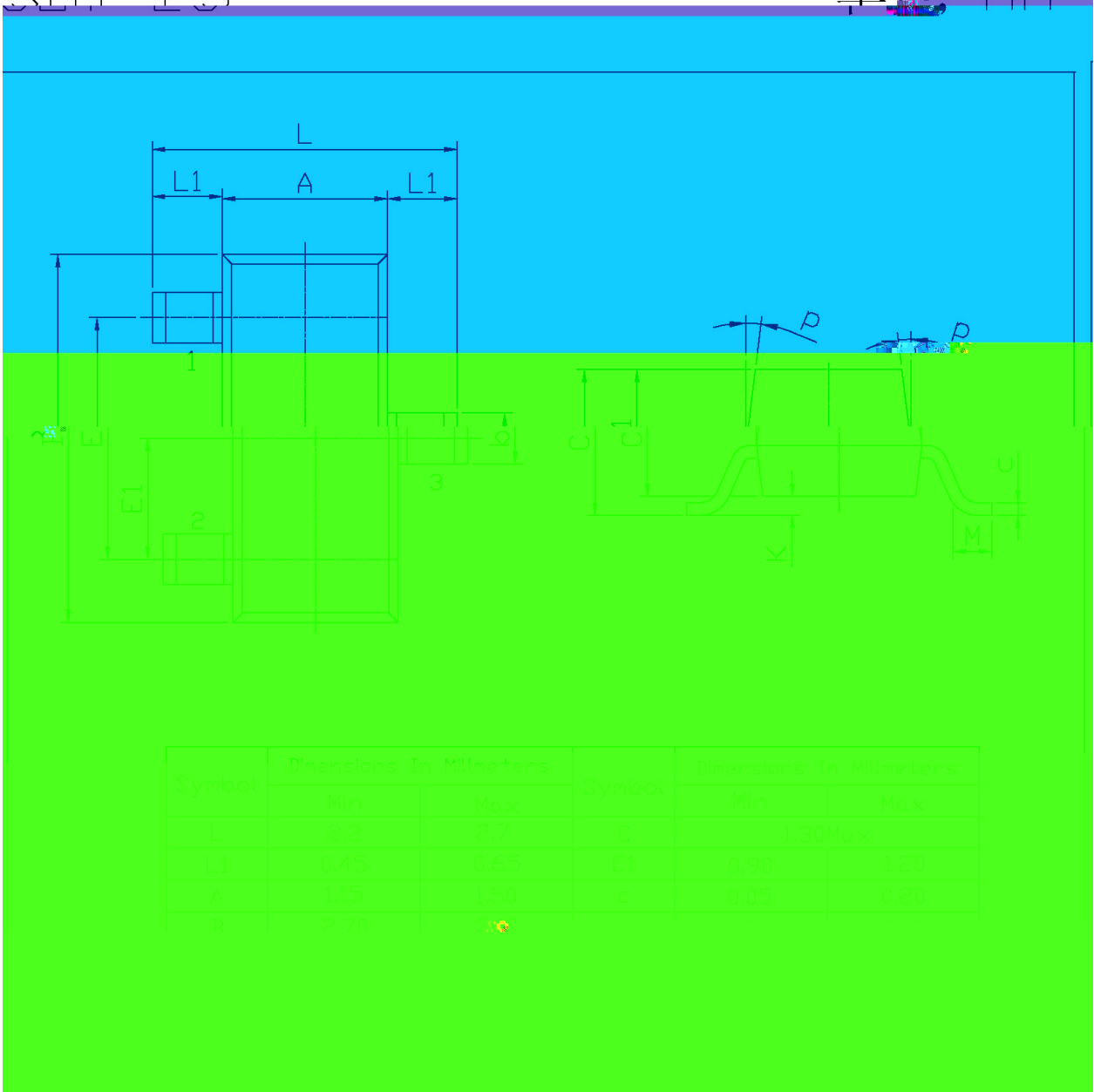
## Notes:

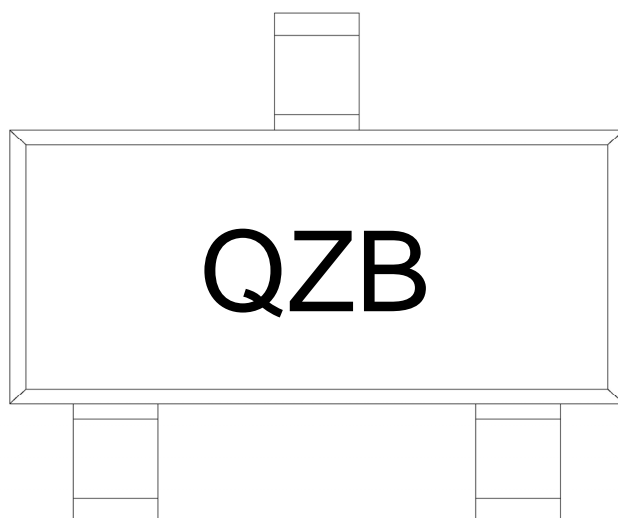
1. Device mounted on FR-4 PC board with recommended pad layout.
2. Short duration test pulse used to minimize self-heating effect.
3. f = 1KHz.
4. Valid provided the terminals are kept at ambient temperature.



SOT-23

单位: mm





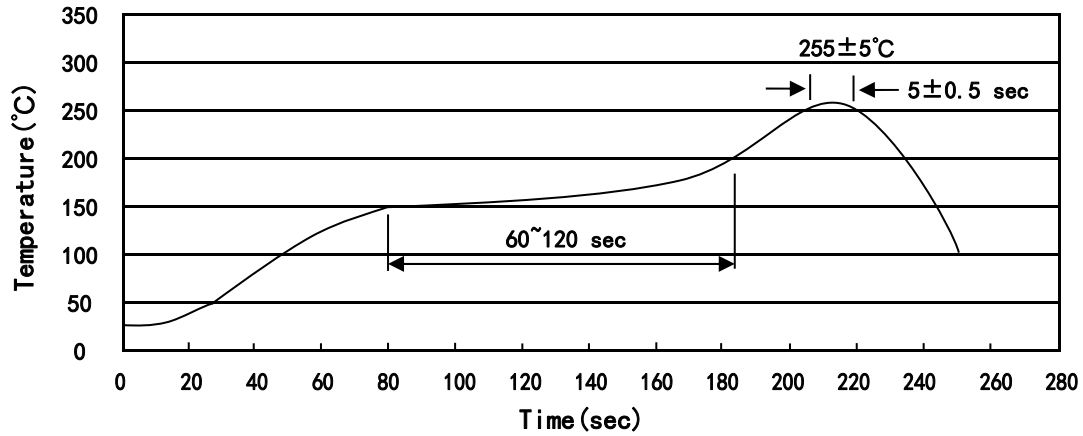
Q

ZB

Note:

Q: Automobile halogen-free product Code

ZB: Product Type

**Temperature Profile for IR Reflow Soldering(Pb-Free)**


Note:

- |   |       |     |           |         |   |
|---|-------|-----|-----------|---------|---|
| 1 | 150   | 200 | 60        | 120sec; | 1.Preheating:150~200 , Time:60~120sec.  |
| 2 | 255±5 |     | 5±0.5sec; |         | 2.Peak Temp.:255±5 , Duration:5±0.5sec. |
| 3 |       | 2   | 10        | /sec.   | 3. Cooling Speed: 2~10 /sec.            |

260±5

10±1 sec.

Temp.:260±5

Time:10±1 sec

/ REEL

Package Type	Units				Dimension		(unit mm <sup>3</sup> )