/ Descriptions

SOT-23

Zener Diode in a SOT-23 Plastic Package.

/ Features

300mW AEC-Q101

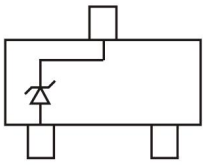
300mW power dissipation, Ideally Suited for Automated Assembly, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

/ Applications

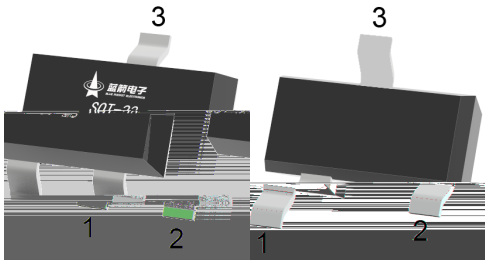
2.4V-39V

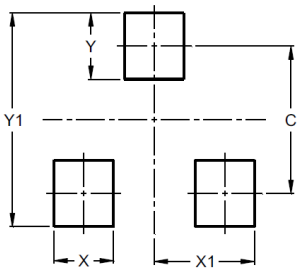
2.4V to 39V wide zener voltage range applications, Meet the stringent requirements of automotive applications.

/ Equivalent Circuit



/ Pinning





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

PIN: See Equivalent Circuit.

/ Marking

See Electrical Characteristics.

/ Absolute Maximum Ratings(Ta=25)

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	

/ Electrical Characteristics(Ta=25)

Type Number	Mark-ing Code	Zener Voltage Range				Maximum Zener Impedance			Maximum Reverse Current	
		V_z @I_{ZT}			I_{ZT}	Z_{ZT} @I_{ZT}	Z_{ZK} @I_{ZK}	I_{ZK}	I_R	@V_R
		Nom (V)	Min (V)	Max (V)	mA			mA	A	V
BRBZX84B2V4Q	QBV	2.4	2.35	2.45	5	94	564	1	45	1
BRBZX84B2V7Q	CVQ	2.7	2.65	2.75	5	94	564	1	18	1
BRBZX84B3V0Q	DVQ	3.0	2.94	3.06	5	89	564	1	9	1
BRBZX84B3V3Q	QEV	3.3	3.23	3.37	5	89	564	1	4.5	1
BRBZX84B3V6Q	QFV	3.6	3.53	3.67	5	84	564	1	4.5	1
BRBZX84B3V9Q	QGV	3.9	3.82	3.96	5	84	564	1	2.7	1
BRBZX84B4V3Q	QHV	4.3	4.21	4.39	5	84	564	1	2.7	1
BRBZX84B4V7Q	Q1V	4.7	4.61	4.79	5	75	564	1	2.7	2
BRBZX84B5V1Q	Q2V	5.1	5.00	5.20	5	56	470	1	1.8	2
BRBZX84B5V6Q	Q3V	5.6	5.49	5.71	5	27	451	1	0.9	2
BRBZX84B6V2Q	Q4V	6.2	6.08	6.32	5	9	376	1	2.7	4
BRBZX84B6V8Q	Q5V	6.8	6.66	6.94	5	14	141	1	1.8	4
BRBZX84B7V5Q	Q6V	7.5	7.35	7.65	5	14	75	1	0.9	5
BRBZX84B8V2Q	Q7V	8.2	8.04	8.36	5	14	75	1	0.63	5
BRBZX84B9V1Q	Q8V	9.1	8.92	9.28	5	14	94	1	0.45	6
BRBZX84B10Q	Q9V	10	9.80	10.20	5	18	141	1	0.18	7
BRBZX84B11Q	Q1U	11	10.78	11.22	5	18	141	1	0.09	8

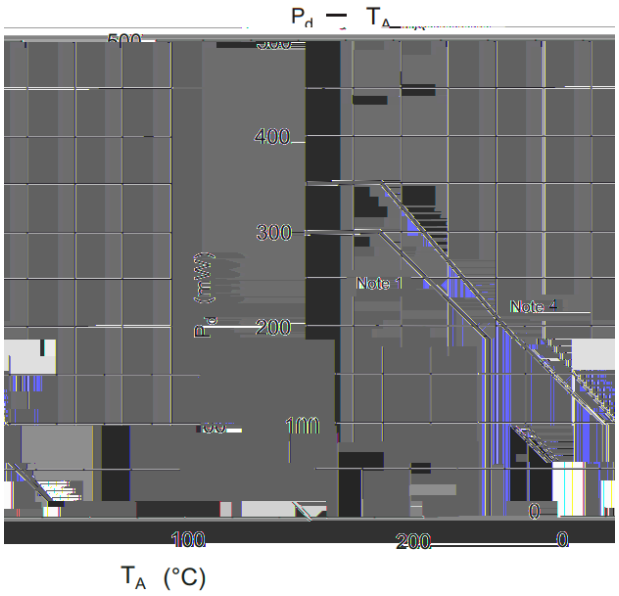
/ Electrical Characteristics(Ta=25)

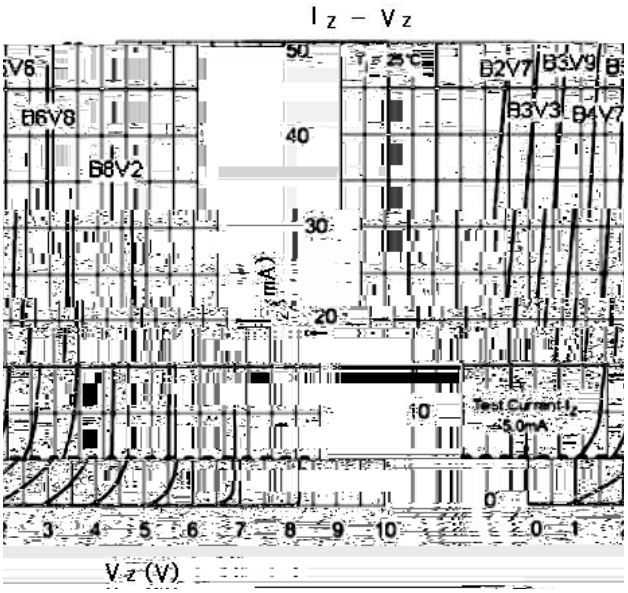
Type Number	Marking Code	Zener Voltage Range (Note 2)				Maximum Zener Impedance (Note 3)			Maximum Reverse Current	
		V_z @I_{ZT}			I_{ZT}	Z_{ZT} @I_{ZT}	Z_{ZK} @I_{ZK}	I_{ZK}	I_R	@V_R
		Nom (V)	Min (V)	Max (V)	mA			mA	uA	V
BRBZX84B12Q	Q2U	12	11.76	12.24	5	23	141	1	0.09	8
BRBZX84B13Q	Q3U	13	12.74	13.26	5	28	160	1	0.045	8
BRBZX84B15Q	Q4U	15	14.70	15.30	5	28	188	1	0.045	10.5
BRBZX84B16Q	Q5U	16	15.68	16.32	5	37	188	1	0.045	11.2
BRBZX84B18Q	Q6U	18	17.64	18.36	5	42	212	1	0.045	12.6
BRBZX84B20Q	Q7U	20	19.60	20.40	5	51	212	1	0.045	14.0
BRBZX84B22Q	Q8U	22	21.56	22.44	5	51	235	1	0.045	15.4
BRBZX84B24Q	Q9U	24	23.52	24.48	5	65	235	1	0.045	16.8
BRBZX84B27Q	QAU	27	26.46	27.54	5	75	282	0.5	0.045	18.9
BRBZX84B30Q	QBU	30	29.40	30.60	5	75	282	0.5	0.045	21.0
BRBZX84B33Q	CUQ	33	32.34	33.66	5	75	306	0.5	0.045	23.0
BRBZX84B36Q	DUQ	36	35.28	36.72	5	84	329	0.5	0.045	25.2
BRBZX84B39Q	QEU	39	38.22	39.78	5	122	329	0.5	0.045	27.3

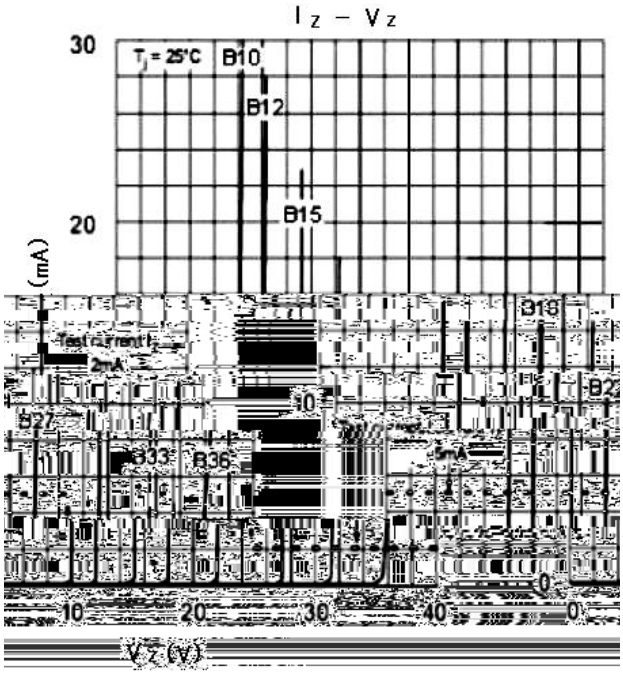
Notes:

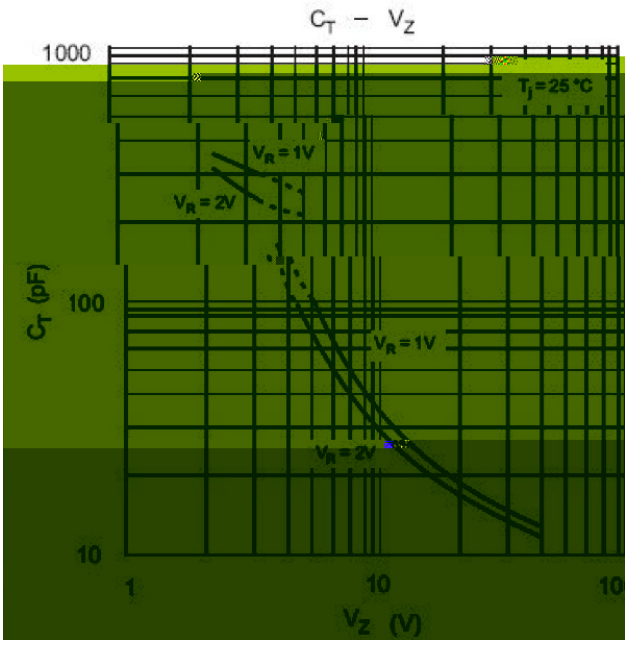
1. Device mounted on FR-4 PC board with recommended pad layout.
2. Short duration test pulse used to minimize self-heating effect.
3. f = 1KHz.
4. Valid provided the terminals are kept at ambient temperature.

/ Electrical Characteristic Curve

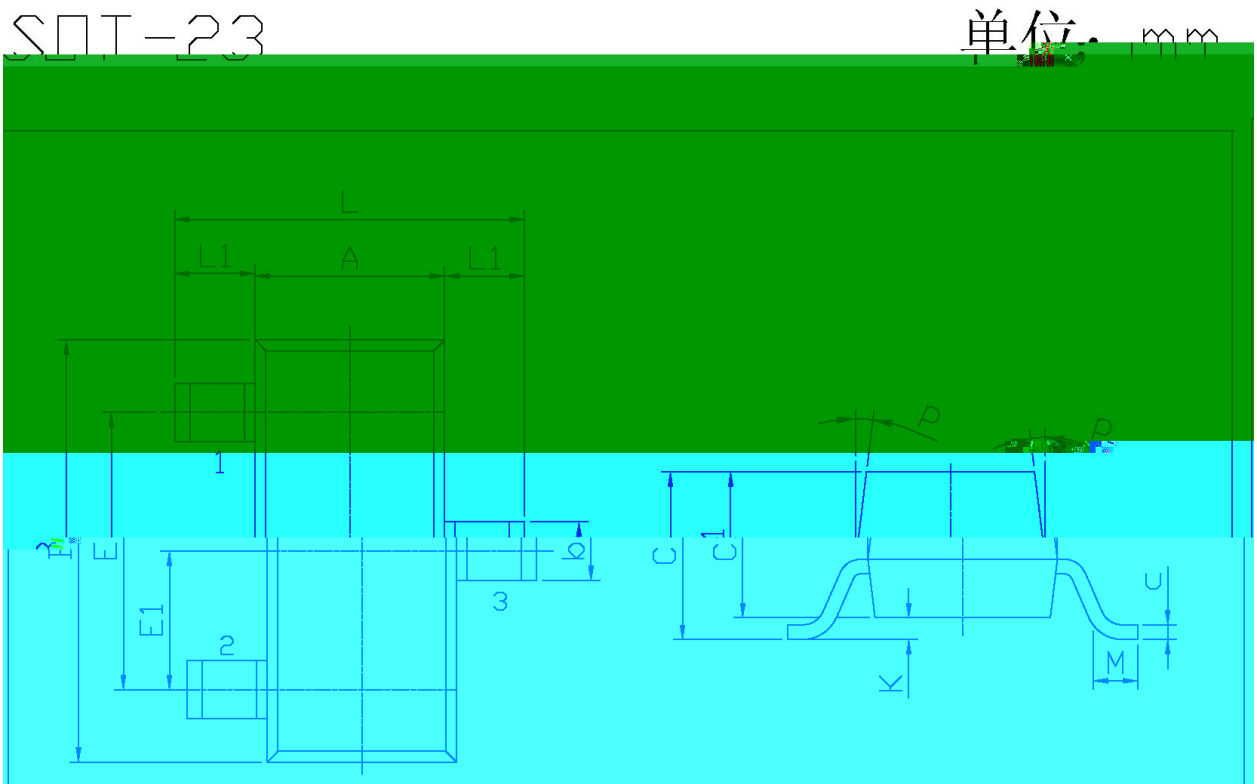






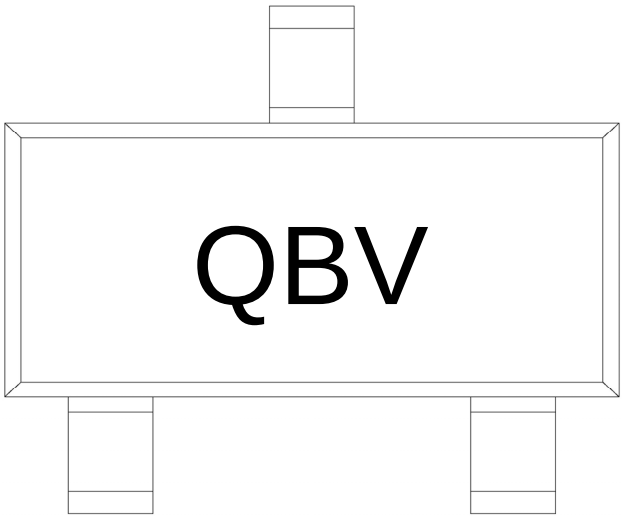


/ Package Dimensions



Symbol	Dimensions In Millmeters		Symbol	Dimensions In Millmeters	
	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			

/ Marking Instructions



Q

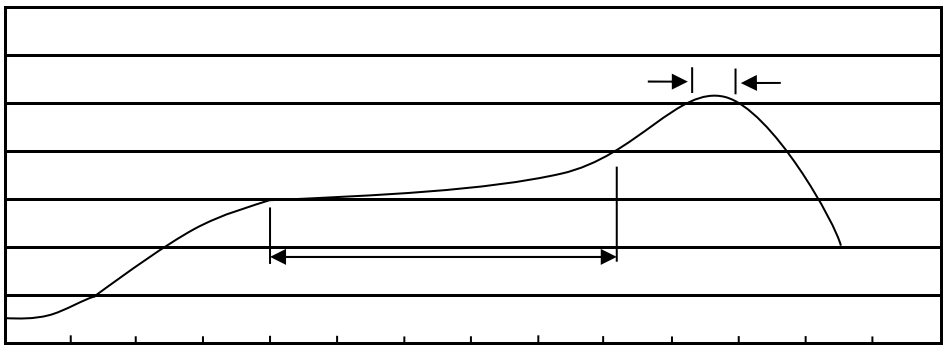
BV

Note:

Q: Automobile halogen-free product Code

BV: 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.

/ Resistance to Soldering Heat Test Conditions

260±5 10±1 sec. Temp.:260±5 Time:10±1 sec

/ Packaging SPEC.

/ REEL

Package Type	Units					Dimension		(unit mm³)
	Units/Reel /	Reels/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Reel	Inner Box	Outer Box
SOT-23	3,000	10	30,000	6	180,000	7 ×8	180×120×180	390×385×205

/ Notices