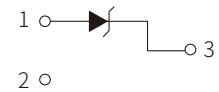


FEATURES

- | 300mW Power Dissipation
- | Ideally Suited for Automated Assembly
- | Meet AEC-Q101 Requirements



Schematic Symbol

APPLICATIONS

- | 2.4V to 51V wide zener voltage range applications
- | Meet the stringent requirements of automotive applications

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$)

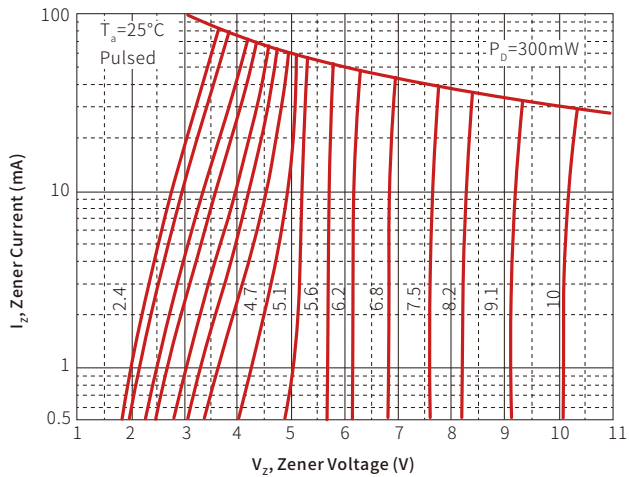
Parameter	Symbol	Value	Unit
Power Dissipation	P_D	300	mW
Maximum forward voltage at $I_F=10\text{mA}$	V_F	0.9	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	417	$^{\circ}\text{C/W}$
Junction and Storage Temperature Range	T_J, T_{STG}	-65 to +150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS

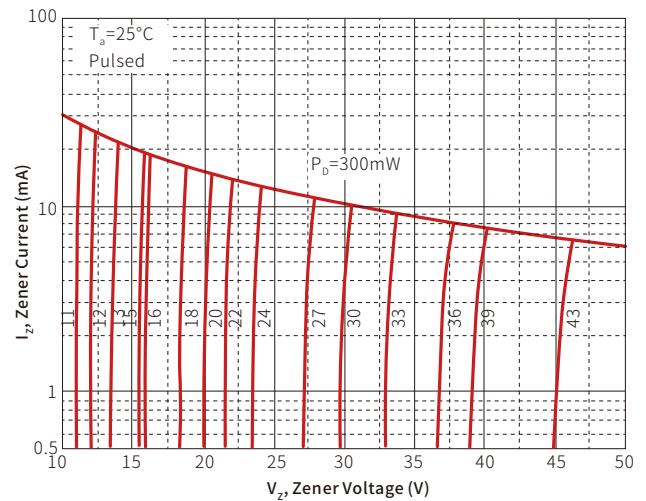
Part Number	Device Marking Code	Zener Voltage Range				Maximum Zener Impedance			Maximum Reverse Current		Typical temperature coefficient @I _{ZT} mV/°C	
		V _Z @I _{ZT}			I _{ZT}	Z _{ZT} @I _{ZT}	Z _{ZK} @I _{ZK}		I _R	V _R		
		Nom(V)	Min(V)	Max(V)	(mA)	(Ω)	(mA)		(uA)	(V)	Min	Max
BZX84C2V4Q	Z11	2.4	2.2	2.6	5	100	600	1.0	50	1.0	-3.5	0
BZX84C2V7Q	Z12	2.7	2.5	2.9	5	100	600	1.0	20	1.0	-3.5	0
BZX84C3V0Q	Z13	3.0	2.8	3.2	5	95	600	1.0	10	1.0	-3.5	0
BZX84C3V3Q	Z14	3.3	3.1	3.5	5	95	600	1.0	5	1.0	-3.5	0
BZX84C3V6Q	Z15	3.6	3.4	3.8	5	90	600	1.0	5	1.0	-3.5	0
BZX84C3V9Q	Z16	3.9	3.7	4.1	5	90	600	1.0	3	1.0	-3.5	0
BZX84C4V3Q	Z17	4.3	4.0	4.6	5	90	600	1.0	3	1.0	-3.5	0
BZX84C4V7Q	Z1	4.7	4.4	5.0	5	80	500	1.0	3	2.0	-3.5	0.2
BZX84C5V1Q	Z2	5.1	4.8	5.4	5	60	480	1.0	2	2.0	-2.7	1.2
BZX84C5V6Q	Z3	5.6	5.2	6.0	5	40	400	1.0	1	2.0	-2.0	2.5
BZX84C6V2Q	Z4	6.2	5.8	6.6	5	10	150	1.0	3	4.0	0.4	3.7
BZX84C6V8Q	Z5	6.8	6.4	7.2	5	15	80	1.0	2	4.0	1.2	4.5
BZX84C7V5Q	Z6	7.5	7.0	7.9	5	15	80	1.0	1	5.0	2.5	5.3
BZX84C8V2Q	Z7	8.2	7.7	8.7	5	15	80	1.0	0.7	5.0	3.2	6.2
BZX84C9V1Q	Z8	9.1	8.5	9.6	5	15	100	1.0	0.5	6.0	3.8	7.0
BZX84C10Q	Z9	10	9.4	10.6	5	20	150	1.0	0.2	7.0	4.5	8.0
BZX84C11Q	Y1	11	10.4	11.6	5	20	150	1.0	0.1	8.0	5.4	9.0
BZX84C12Q	Y2	12	11.4	12.7	5	25	150	1.0	0.1	8.0	6.0	10.0
BZX84C13Q	Y3	13	12.4	14.1	5	30	170	1.0	0.1	8.0	7.0	11.0
BZX84C15Q	Y4	15	13.8	15.6	5	30	200	1.0	0.1	10.5	9.2	13.0
BZX84C16Q	Y5	16	15.3	17.1	5	40	200	1.0	0.1	11.2	10.4	14.0
BZX84C18Q	Y6	18	16.8	19.1	5	45	225	1.0	0.1	12.6	12.4	16.0
BZX84C20Q	Y7	20	18.8	21.2	5	55	225	1.0	0.1	14.0	14.4	18.0
BZX84C22Q	Y8	22	20.8	23.3	5	55	250	1.0	0.1	15.4	16.4	20.0
BZX84C24Q	Y9	24	22.8	25.6	5	70	250	1.0	0.1	16.8	18.4	22.0
BZX84C27Q	Y10	27	25.1	28.9	2	80	300	0.5	0.1	18.9	21.4	25.3
BZX84C30Q	Y11	30	28.0	32.0	2	80	300	0.5	0.1	21.0	24.4	29.4
BZX84C33Q	Y12	33	31.0	35.0	2	80	325	0.5	0.1	23.1	27.4	33.4
BZX84C36Q	Y13	36	34.0	38.0	2	90	350	0.5	0.1	25.2	30.4	37.4
BZX84C39Q	Y14	39	37.0	41.0	2	130	350	0.5	0.1	27.3	33.4	41.2
BZX84C43Q	Y15	43	40.0	46.0	2	150	375	0.5	0.1	30.1	10.0	12.0
BZX84C47Q	Y16	47	44.0	50.0	2	170	375	0.5	0.1	32.9	10.0	12.0
BZX84C51Q	Y17	51	48.0	54.0	2	180	400	0.5	0.1	35.7	10.0	12.0

CHARACTERISTIC CURVES

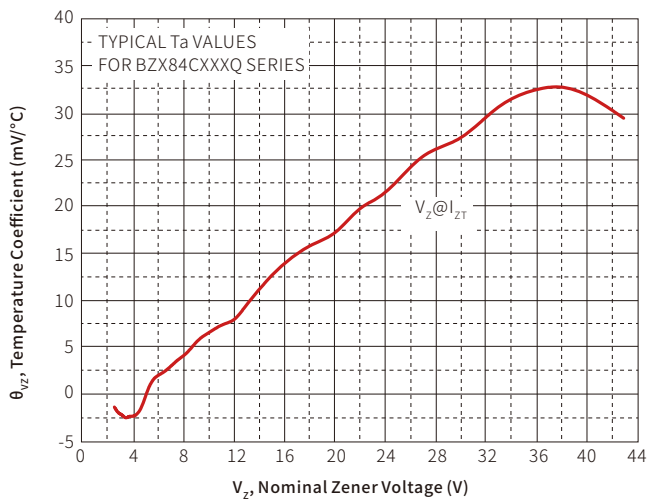
Zener Characteristics (V_Z Up to 10 V)



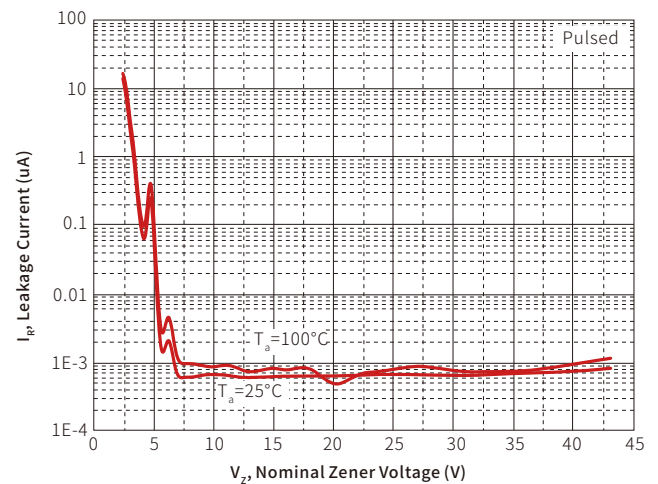
Zener Characteristics (11 V to 43 V)

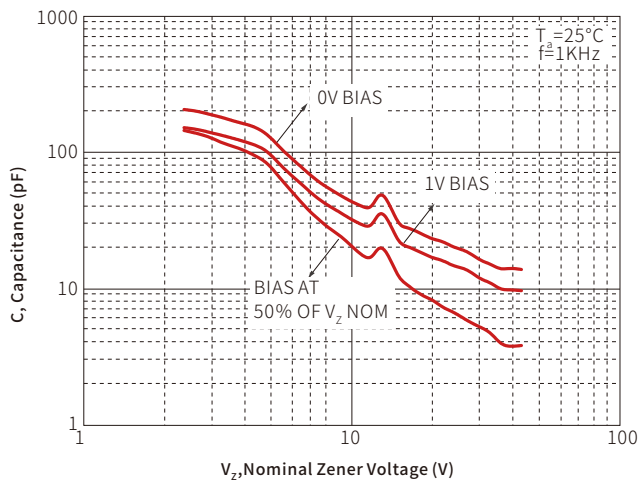
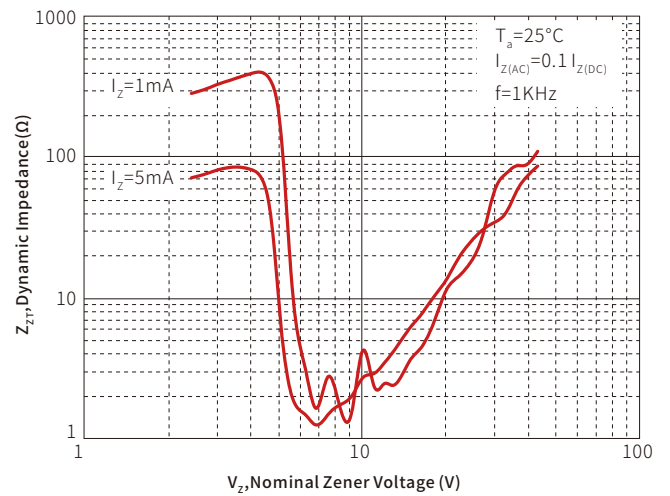
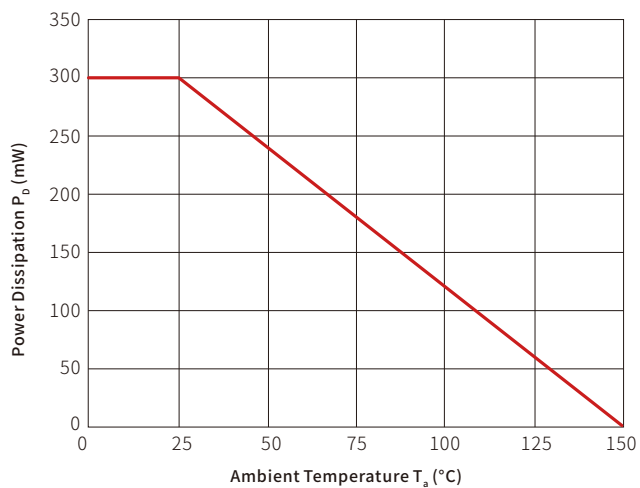


Temperature Coefficients



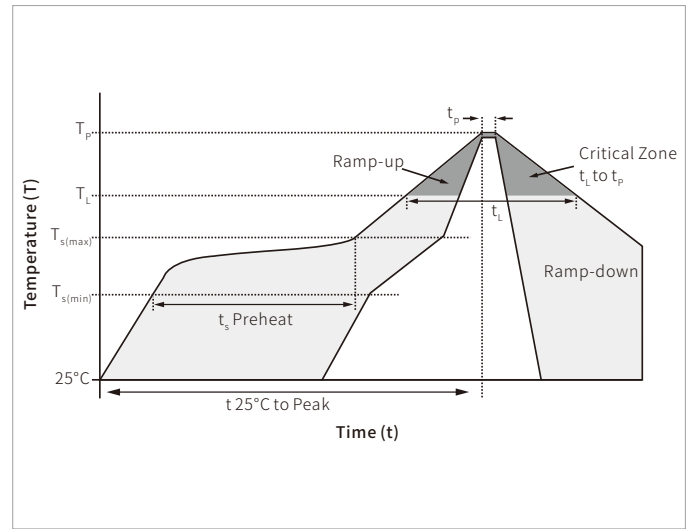
Typical Leakage Current



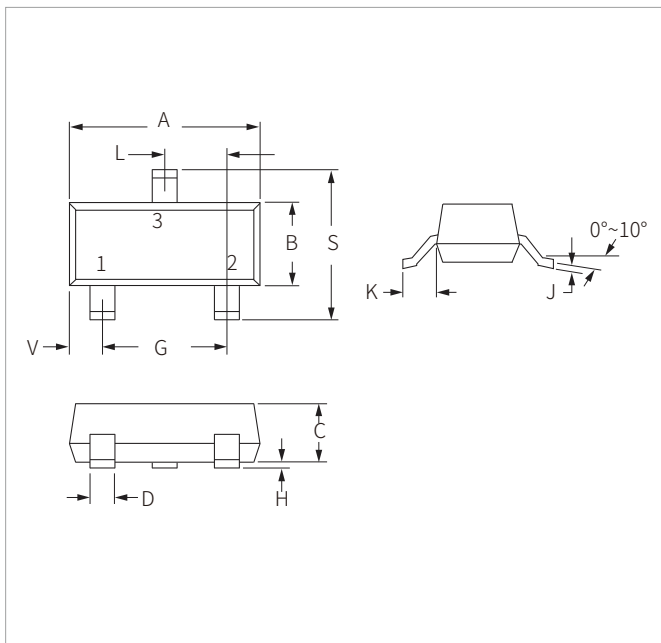
Typical Capacitance

Effect of Zener Voltage on Zener Impedance

Power Derating Curve


SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak		3°C/second max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Time (min to max) (t_L)	60 – 150 seconds
Peak Temperature (T_p)		260°C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_p)		8 minutes max.
Do not exceed		260°C

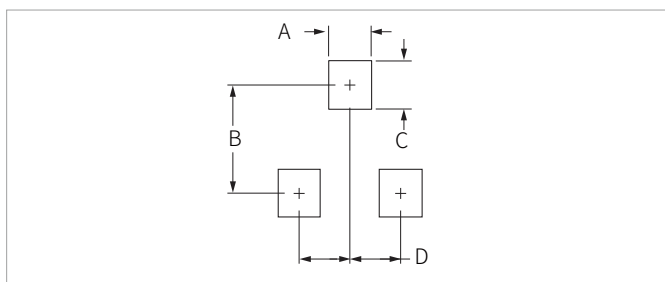


SOT-23 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.80	3.05	0.110	0.120
B	1.20	1.40	0.047	0.055
C	0.90	1.15	0.035	0.045
D	0.37	0.50	0.015	0.020
G	1.75	2.05	0.069	0.081
H	0.01	0.100	0.001	0.004
J	0.085	0.180	0.003	0.007
K	0.35	0.69	0.014	0.029
L	0.89	1.02	0.035	0.040
S	2.10	2.65	0.083	0.104
V	0.45	0.60	0.018	0.024

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.71	0.97	0.028	0.038
B	1.88	2.13	0.074	0.084
C	0.71	0.97	0.028	0.038
D	0.81	1.07	0.032	0.042

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
BZX84CxxxQ	SOT-23	3000PCS	7"

Headquarters

No.3387 Shendu Road
Pujiang I&E Park
Minhang Shanghai China
201000

Hotline

400-021-5756

Web

<https://www.semiware.com>

Sales Center

Tel: 86-21-3463-7458
Email: sales18@semiware.com

Customer Service

Tel: 86-21-5484-1001
Email: sales17@semiware.com

Technical Support

Tel: 86-21-3463-7654
Email: fae01@semiware.com

Complaint & Suggestions

Tel: 86-21-3463-7172
Ext: 8868
Email: cs03@semiware.com

By QR Code

Website



Wechat

To find your local partner within Semiware's global website: www.semiware.com

© 2022 Semiware Semiconductor Inc.

The content of this document has been carefully checked and understood. However, neither Semiware nor its subsidiaries assume any liability whatsoever for any errors or inaccuracies of this document and the consequences thereof. Published specifications are subject to change without notice. Product suitability for any area of application must ultimately be determined by the customer. In all cases, products must never be operated outside their published specifications. Semiware does not guarantee the availability of all published products. This disclaimer shall be governed by substantive Chinese law and resulting disputes shall be settled by the courts at the place of business of Semiware. Latest publications and a complete disclaimer can be downloaded from the Semiware website. All trademarks recognized.