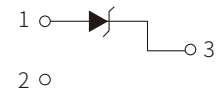


FEATURES

- | 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°C)

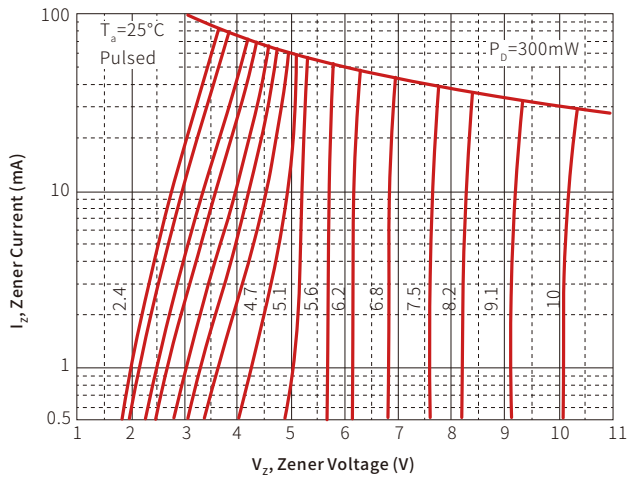
Parameter	Symbo	Value	Unit
Power Dissipation	P _D	300	mW
Maximum forward voltage at I _F =10mA	V _F	0.9	V
Thermal Resistance from Junction to Ambient	R _{θJA}	417	°C/W
Junction and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°C

ELECTRICAL CHARACTERISTICS

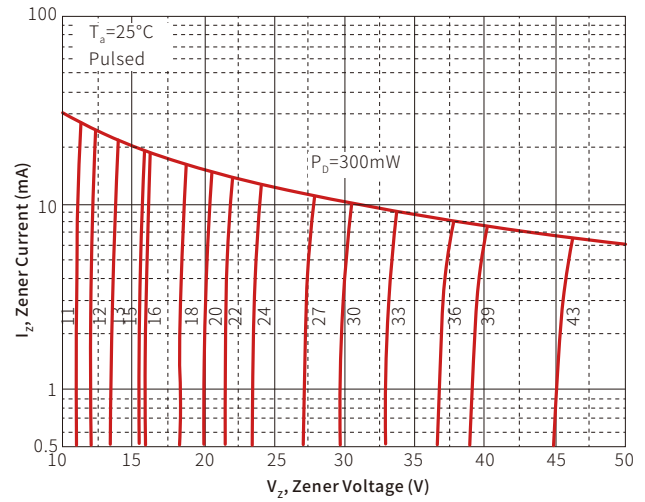
Part Number	Device Marking Code	Zener Voltage Range				Maximum Zener Impedance			Maximum Reverse Current		Typical temperature coefficient @I _{ZT} mV/°C	
		V _Z @I _{ZT}			I _{ZT}	Z _{ZT} @I _{ZT}	Z _{ZK} @I _{ZK}		I _R	V _R	Min	Max
		Nom(V)	Min(V)	Max(V)	(mA)	(Ω)	(mA)	(μA)	(V)			
BZX84C2V4Q	QZB	2.4	2.2	2.6	5	100	600	1.0	50	1.0	-3.5	0
BZX84C2V7Q	QZC	2.7	2.5	2.9	5	100	600	1.0	20	1.0	-3.5	0
BZX84C3V0Q	QZD	3.0	2.8	3.2	5	95	600	1.0	10	1.0	-3.5	0
BZX84C3V3Q	QZE	3.3	3.1	3.5	5	95	600	1.0	5	1.0	-3.5	0
BZX84C3V6Q	QZF	3.6	3.4	3.8	5	90	600	1.0	5	1.0	-3.5	0
BZX84C3V9Q	QZG	3.9	3.7	4.1	5	90	600	1.0	3	1.0	-3.5	0
BZX84C4V3Q	ZHQ	4.3	4.0	4.6	5	90	600	1.0	3	1.0	-3.5	0
BZX84C4V7Q	QZ1	4.7	4.4	5.0	5	80	500	1.0	3	2.0	-3.5	0.2
BZX84C5V1Q	QZ2	5.1	4.8	5.4	5	60	480	1.0	2	2.0	-2.7	1.2
BZX84C5V6Q	QZ3	5.6	5.2	6.0	5	40	400	1.0	1	2.0	-2.0	2.5
BZX84C6V2Q	QZ4	6.2	5.8	6.6	5	10	150	1.0	3	4.0	0.4	3.7
BZX84C6V8Q	QZ5	6.8	6.4	7.2	5	15	80	1.0	2	4.0	1.2	4.5
BZX84C7V5Q	QZ6	7.5	7.0	7.9	5	15	80	1.0	1	5.0	2.5	5.3
BZX84C8V2Q	QZ7	8.2	7.7	8.7	5	15	80	1.0	0.7	5.0	3.2	6.2
BZX84C9V1Q	QZ8	9.1	8.5	9.6	5	15	100	1.0	0.5	6.0	3.8	7.0
BZX84C10Q	QZ9	10	9.4	10.6	5	20	150	1.0	0.2	7.0	4.5	8.0
BZX84C11Q	QY1	11	10.4	11.6	5	20	150	1.0	0.1	8.0	5.4	9.0
BZX84C12Q	QY2	12	11.4	12.7	5	25	150	1.0	0.1	8.0	6.0	10.0
BZX84C13Q	QY3	13	12.4	14.1	5	30	170	1.0	0.1	8.0	7.0	11.0
BZX84C15Q	QY4	15	13.8	15.6	5	30	200	1.0	0.1	10.5	9.2	13.0
BZX84C16Q	QY5	16	15.3	17.1	5	40	200	1.0	0.1	11.2	10.4	14.0
BZX84C18Q	QY6	18	16.8	19.1	5	45	225	1.0	0.1	12.6	12.4	16.0
BZX84C20Q	QY7	20	18.8	21.2	5	55	225	1.0	0.1	14.0	14.4	18.0
BZX84C22Q	QY8	22	20.8	23.3	5	55	250	1.0	0.1	15.4	16.4	20.0
BZX84C24Q	QY9	24	22.8	25.6	5	70	250	1.0	0.1	16.8	18.4	22.0
BZX84C27Q	QYA	27	25.1	28.9	2	80	300	0.5	0.1	18.9	21.4	25.3
BZX84C30Q	QYB	30	28.0	32.0	2	80	300	0.5	0.1	21.0	24.4	29.4
BZX84C33Q	QYC	33	31.0	35.0	2	80	325	0.5	0.1	23.1	27.4	33.4
BZX84C36Q	QYD	36	34.0	38.0	2	90	350	0.5	0.1	25.2	30.4	37.4
BZX84C39Q	QYE	39	37.0	41.0	2	130	350	0.5	0.1	27.3	33.4	41.2
BZX84C43Q	QYF	43	40.0	46.0	2	150	375	0.5	0.1	30.1	10.0	12.0
BZX84C47Q	QYG	47	44.0	50.0	2	170	375	0.5	0.1	32.9	10.0	12.0
BZX84C51Q	QYH	51	48.0	54.0	2	180	400	0.5	0.1	35.7	10.0	12.0

CHARACTERISTIC CURVES

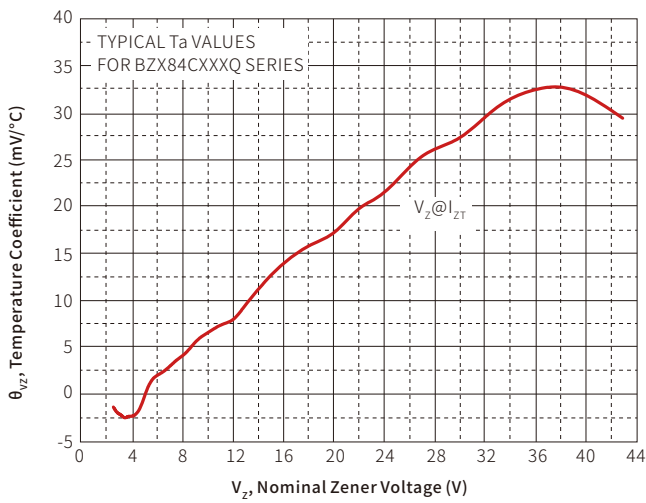
Zener Characteristics (V_Z Up to 10 V)



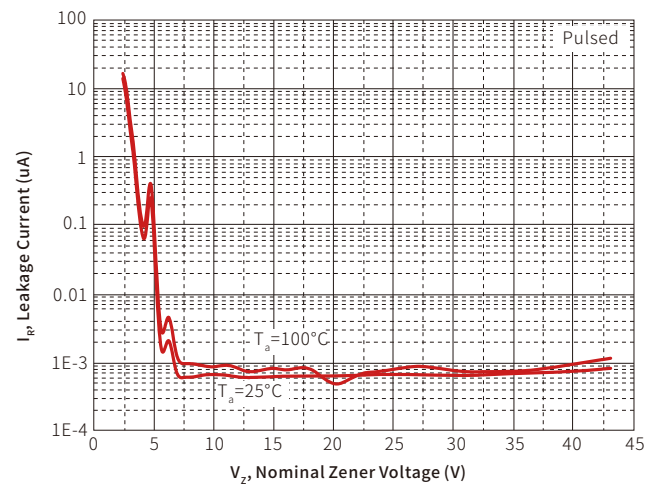
Zener Characteristics (11 V to 43 V)



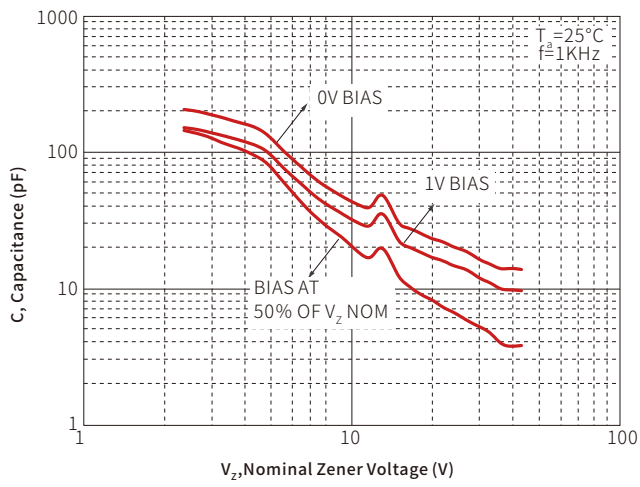
Temperature Coefficients



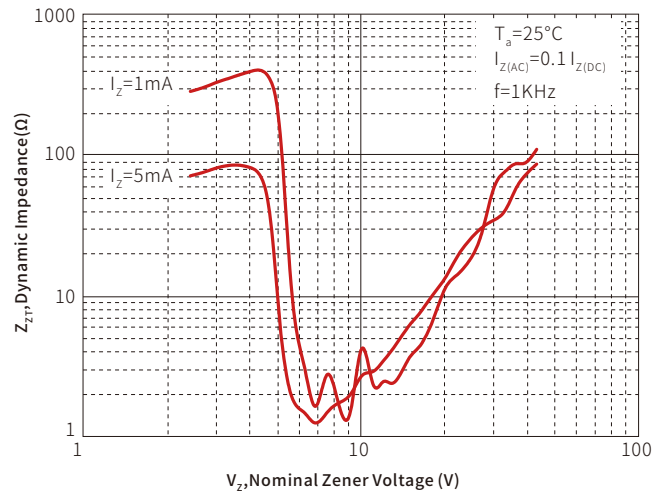
Typical Leakage Current



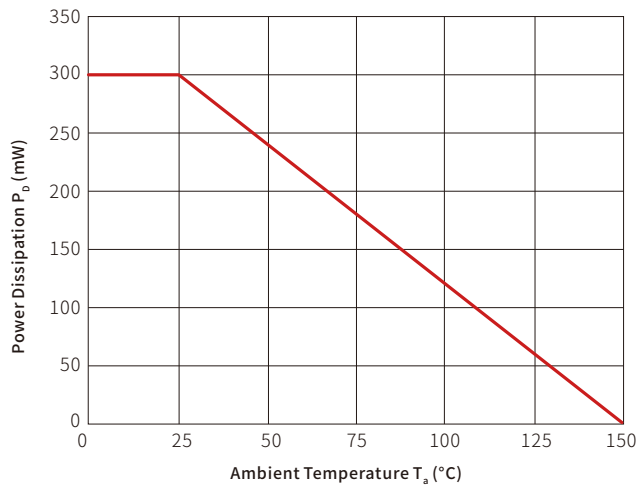
Typical Capacitance



Effect of Zener Voltage on Zener Impedance

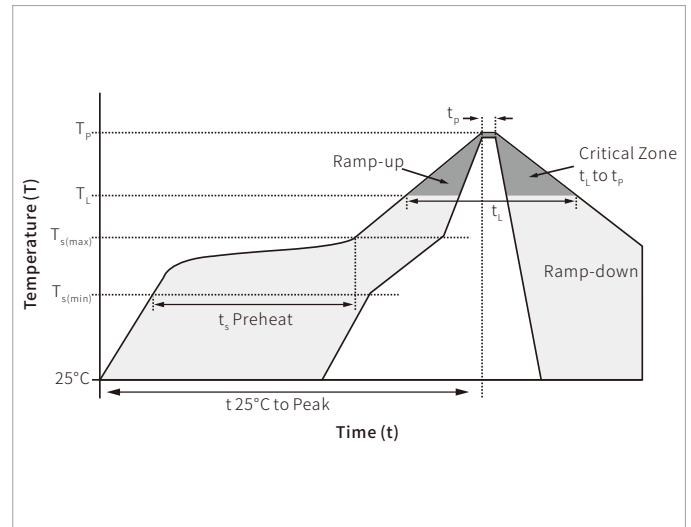


Power Derating Curve

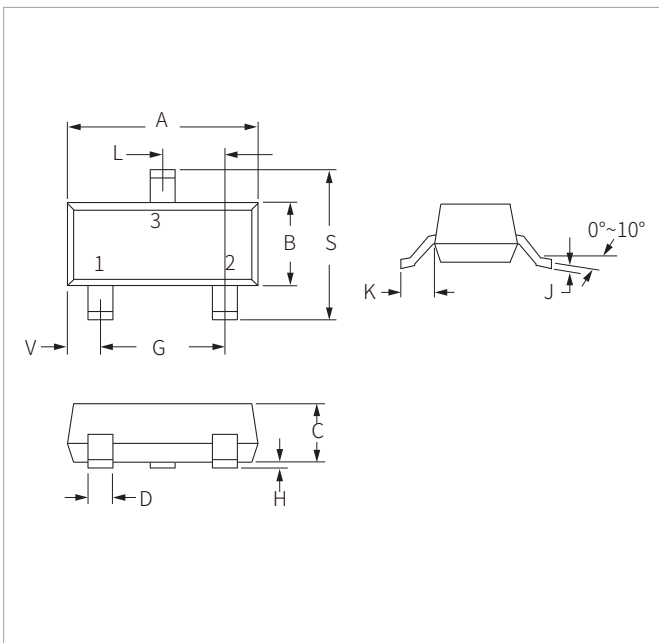


SOLDERING PARAMETERS

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

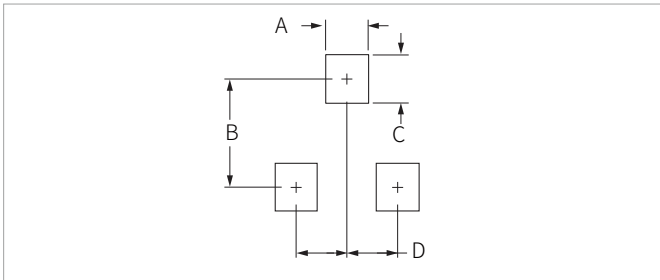


SOT-23 PACKAGE INFORMATION



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"

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