

FEATURES

- 300mW Power Dissipation
- Zener Voltages from 2.0V - 75V
- Ideally Suited for Automated Assembly Processes

MECHANICAL DATA

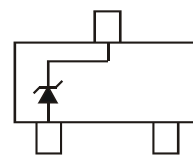
- Case: SOT23
- Case Material: Molded Plastic "Green" Molding Compound.
UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Solderable per MIL-STD-202, Method 208 Lead-Free
Plating (Matte Tin Finish Annealed over Alloy 42 Leadframe). (e3)
- Polarity: See Diagram

VOLTAGE RANGE

2.0 to 75 Volts

300 mW

XX



Device Schematic

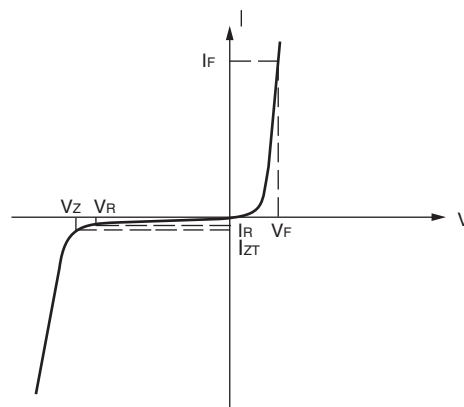
MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating 25°C ambient temperature unless otherwise specified.
Single phase half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Parameters	Symbols	Value	Units
Total Power dissipation	P _D	300	mW
Thermal Resistance, Junction to Ambient ¹⁾	R _{θJA}	417	°C/W
Junction temperature	T _J	-55 to +150	°C
Storage temperature range	T _{STG}	-55 to +150	°C
1) Alumina=0.4×0.3×0.024 in, 99.5% alumina			

ELECTRICAL CHARACTERISTICS

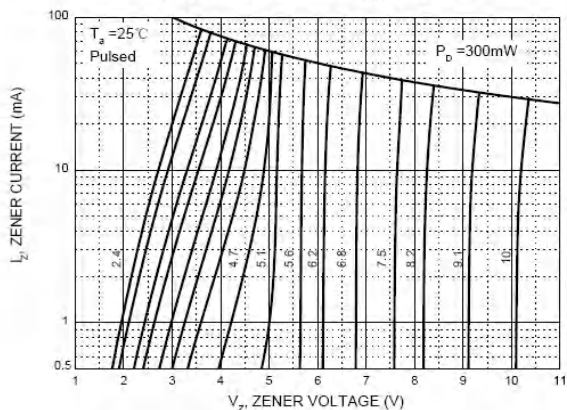
SYMBOL	PARAMETER
V _Z	Reverse Zener voltage at I _{ZT}
I _{ZT}	Reverse current
Z _{ZT}	Maximum Zener impedance at I _{ZT}
I _{ZK}	Reverse current
Z _{ZK}	Maximum Zener impedance at I _{ZK}
I _R	Reverse leakage current at V _R
V _R	Reverse voltage
I _F	Forward current
V _F	Forward voltage at I _F
I _{ZM}	Maximum DC Zener current



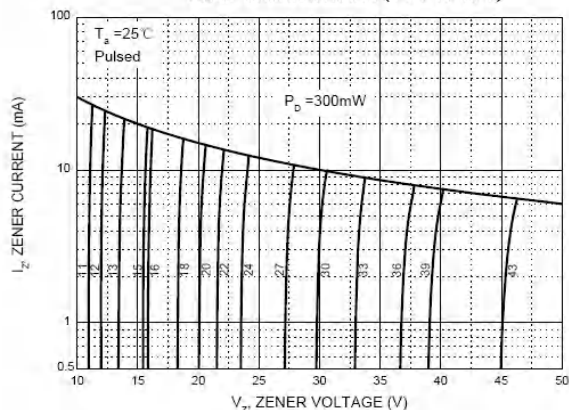
Zener Voltage Regulator

RATING AND CHARACTERISTIC CURVES

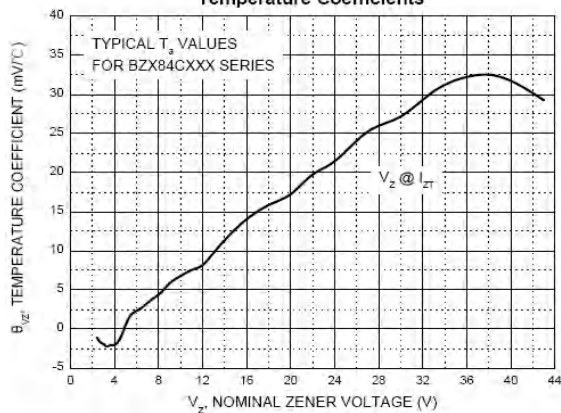
Zener Characteristics (V_Z Up to 10 V)



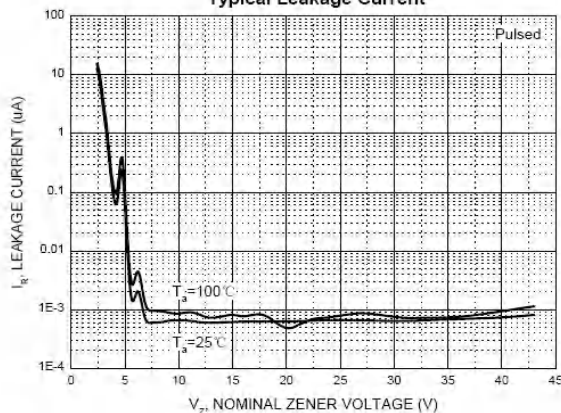
Zener Characteristics (11 V to 43 V)



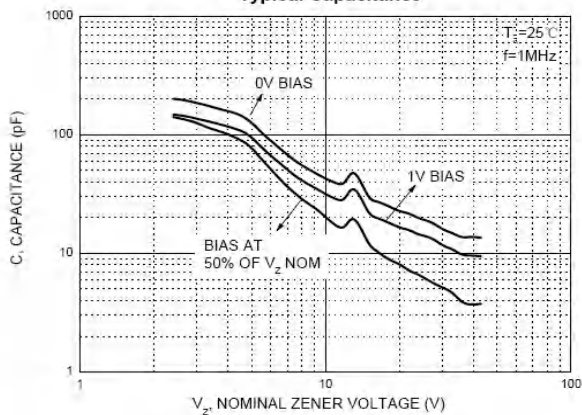
Temperature Coefficients



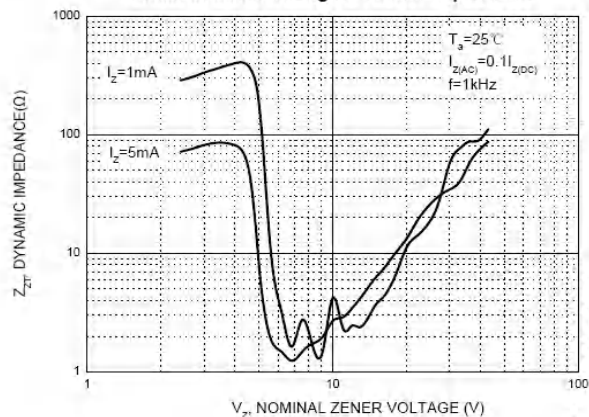
Typical Leakage Current



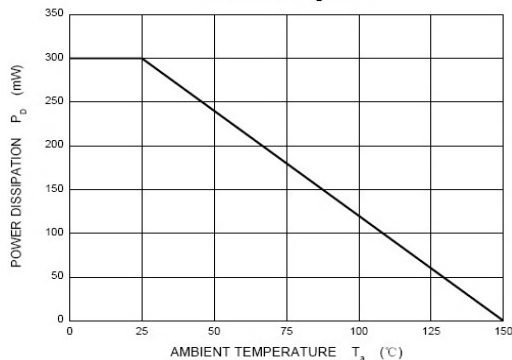
Typical Capacitance



Effect of Zener Voltage on Zener Impedance



Power Derating Curve

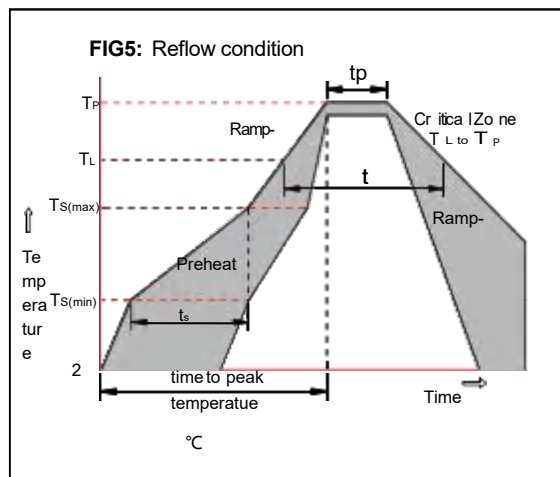


Characteristics at Ta = 25°C

Device	Marking	Zener Voltage Range Vz			Maximum Zenner Impedance			Reverse Current Ir		Temperature Coefficient of Zener voltage @Izt=5mA mV/°C	
		Min	Max	Izt	Zzt	Zzk		Max	VR		
		(V)	(V)	mA	Ω	Ω	mA	μA	V	Min	Max
BZX84C 2V4	Z11	2.20	2.60	5	100	600	1.0	50.0	1.0	-3.5	0.0
BZX84C 2V7	Z12	2.50	2.90	5	100	600	1.0	20.0	1.0	-3.5	0.0
BZX84C 3V0	Z13	2.80	3.20	5	95	600	1.0	10.0	1.0	-3.5	0.0
BZX84C 3V3	Z14	3.10	3.50	5	95	600	1.0	5.0	1.0	-3.5	0.0
BZX84C 3V6	Z15	3.40	3.80	5	90	600	1.0	5.0	1.0	-3.5	0.0
BZX84C 3V9	Z16	3.70	4.10	5	90	600	1.0	3.0	1.0	-3.5	0.0
BZX84C 4V3	Z17	4.00	4.60	5	90	600	1.0	3.0	1.0	-3.5	0.0
BZX84C 4V7	Z1	4.40	5.00	5	80	500	1.0	3.0	2.0	-3.5	0.2
BZX84C 5V1	Z2	4.80	5.40	5	60	480	1.0	2.0	2.0	-2.7	1.2
BZX84C 5V6	Z3	5.20	6.00	5	40	400	1.0	1.0	2.0	-2.0	2.5
BZX84C 6V2	Z4	5.80	6.60	5	10	150	1.0	3.0	4.0	0.4	3.7
BZX84C 6V8	Z5	6.40	7.20	5	15	80	1.0	2.0	4.0	1.2	4.5
BZX84C 7V5	Z6	7.00	7.90	5	15	80	1.0	1.0	5.0	2.5	5.3
BZX84C 8V2	Z7	7.70	8.70	5	15	80	1.0	0.7	5.0	3.2	6.2
BZX84C 9V1	Z8	8.50	9.60	5	15	100	1.0	0.5	6.0	3.8	7.0
BZX84C 10	Z9	9.40	10.60	5	20	150	1.0	0.2	7.0	4.5	8.0
BZX84C 11	Y1•	10.40	11.60	5	20	150	1.0	0.1	8.0	5.4	9.0
BZX84C 12	Y2•	11.40	12.70	5	25	150	1.0	0.1	8.0	6.0	10.0
BZX84C 13	Y3	12.40	14.10	5	30	170	1.0	0.1	8.0	7.0	11.0
BZX84C 15	Y4	13.80	15.60	5	30	200	1.0	0.1	10.5	9.2	13.0
BZX84C 16	Y5	15.30	17.10	5	40	200	1.0	0.1	11.2	10.4	14.0
BZX84C 18	Y6•	16.80	19.10	5	45	225	1.0	0.1	12.6	12.4	16.0
BZX84C 20	Y7	18.80	21.20	5	55	225	1.0	0.1	14.0	14.4	18.0
BZX84C 22	Y8	20.80	23.30	5	55	250	1.0	0.1	15.4	16.4	20.0
BZX84C 24	Y9	22.80	25.60	5	70	250	1.0	0.1	16.8	18.4	22.0
BZX84C 27	Y10	25.10	28.90	2	80	300	0.5	0.1	18.9	21.4	25.3
BZX84C 30	Y11•	28.00	32.00	2	80	300	0.5	0.1	21.0	24.4	29.4
BZX84C 33	Y12	31.00	35.00	2	80	325	0.5	0.1	23.1	27.1	33.4
BZX84C 36	Y13	34.00	38.00	2	90	350	0.5	0.1	25.2	30.4	37.4
BZX84C 39	Y14	37.00	41.00	2	130	350	0.5	0.1	27.3	33.4	41.2
BZX84C 43	Y15	40.00	46.00	2	100	700	1.0	0.1	32.0	10.0	12.0
BZX84C 47	Y16	44.00	50.00	2	100	750	1.0	0.1	35.0	10.0	12.0
BZX84C 51	Y17	48.00	54.00	2	125	750	1.0	0.1	38.0	10.0	12.0
BZX84C 56	Y18	52.00	60.00	2	135	700	1.0	0.1	39.0	10.0	12.0
BZX84C 62	Y19	58.00	66.00	2	200	1000	1.0	0.2	47.0	10.0	12.0
BZX84C 68	Y20	64.00	72.00	2	250	1000	1.0	0.2	52.0	10.0	12.0
BZX84C 75	Y21•	70.00	79.00	2	300	1000	1.0	0.2	57.0	10.0	12.0

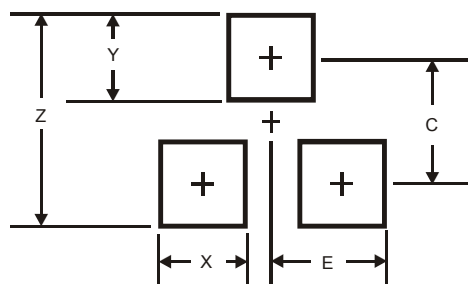
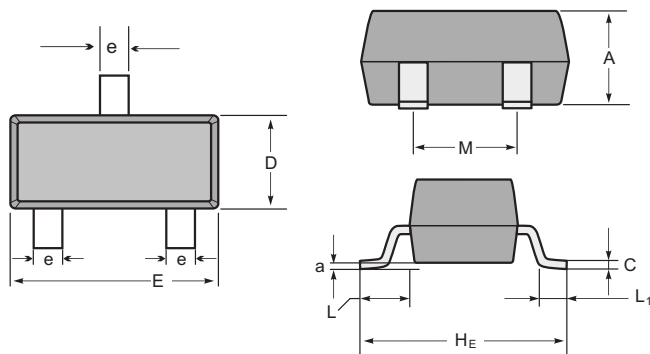
Soldering parameters

Reflow Condition		Pb-Free assembly (see as below)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_P)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260°C



Package Dimensions & Suggested Pad Layout

SOT23

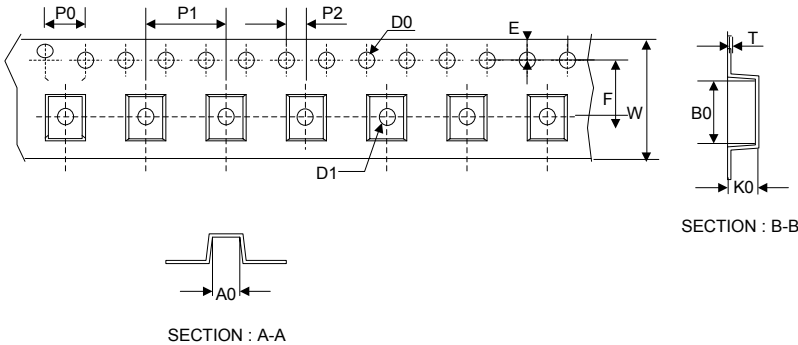
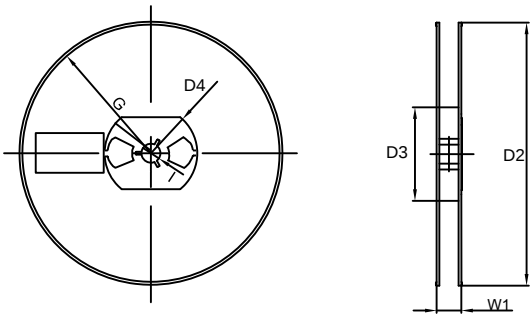


SOT-23 mechanical data

UNIT		A	C	D	E	H _E	e	M	L	L ₁	a
mm	max	1.1	0.15	1.4	3.0	2.6	0.5	1.95	0.55 (ref)	0.36 (ref)	0.0
	min	0.9	0.08	1.2	2.8	2.2	0.3	1.7			0.15
mil	max	43	6	55	118	102	20	77	22 (ref)	14 (ref)	0.0
	min	35	3	47	110	87	12	67			6

Dimensions	SOT23
Z	2.9
X	0.8
Y	0.9
C	2.0
E	1.35

Tape & reel specification

Tape		Symbol	Dimension (mm)
		P0	4.00±0.10
		P1	4.00±0.10
		P2	2.00±0.10
		D0	1.55±0.10
		D1	1.05±0.10
		E	1.55±0.10
		F	3.60±0.10
		W	8.00±0.10
		A0	3.80±0.20
		B0	3.25±0.20
		K0	1.45±0.10
		T	0.25±0.05
		D2	178.0±3.0
		D3	55Min.
		D4	R24.0±3.0
7" Reel		G	R82.0±3.0
		I	13.0±2.0
		W1	11.0±3.0
		Quantity: 3000PCS	