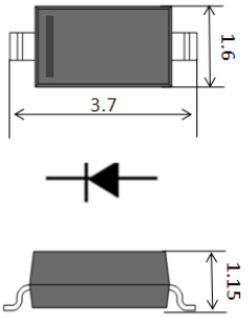
Features

RoHS Compliant SOD-123

- Constant Voltage control
- Wide Voltage Range Selection 2.4V to 47V
- RoHS compliant/Green EMC
- Meets MSL level 1, Per J-STD-020, LF maximum peak of 260℃
- Matte Tin(Sn) Lead finish
- Cathode Band/Device marking
  Refer to table list
- Complies with the standards of AEC-Q101



Maximum Ratings (Ta=25℃)

Symbol	Parameter	Value	Units
P_D	Power Dissipation at TL = 75°C (Note 1)	350	mW
P_D	Power Dissipation at TA= 25°C (Note 2)	500	mW
T_J	Junction Temperature	150	℃
T_{STG}	Storage Temperature	-55 to +125	℃
I_{ZM}	Maximum Regulator Current	P_D/V_Z	mA
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	357	℃/W
V_F	Maximum Instantaneous Forward Voltage at 1mA	0.9	V

Note: 1. Mounted on ceramic substrate with 25mm^{2}copper pads.
2.Mounted on ceramic substrate with 40mm^{2}copperpads.

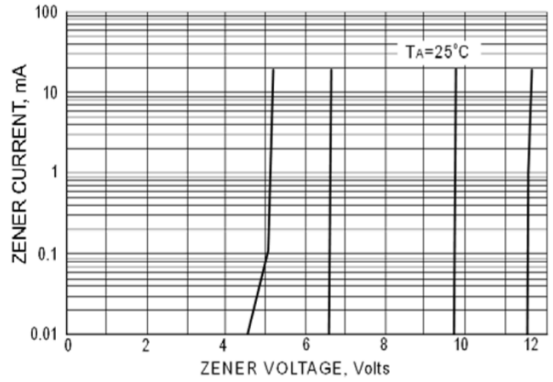
Electrical Characteristics (T =25°C unless otherwise noted)

Type Number	Device Marking	Vz (V) (Note 1)			I_{ZT}	$Z_{ZT}@I_{ZT}$	$Z_{ZK}@I_{ZK}$	Izk (mA)	I_R (uA)	V_R (V)
		Nom(V)	Min(V)	Max(V)	mA	Ω				
SZT52B2V4-AT	2WX	2.4	2.35	2.45	5	100	600	1.0	50	1.0
SZT52B2V7-AT	2W1	2.7	2.65	2.75	5	100	600	1.0	20	1.0
SZT52B3V0-AT	2W2	3.0	2.94	3.06	5	95	600	1.0	10	1.0
SZT52B3V3-AT	2W3	3.3	3.23	3.37	5	95	600	1.0	5	1.0
SZT52B3V6-AT	2W4	3.6	3.53	3.67	5	90	600	1.0	5	1.0
SZT52B3V9-AT	2W5	3.9	3.82	3.98	5	90	600	1.0	3	1.0
SZT52B4V3-AT	2W6	4.3	4.21	4.39	5	90	600	1.0	3	1.0
SZT52B4V7-AT	2W7	4.7	4.61	4.79	5	80	500	1.0	3	2.0
SZT52B5V1-AT	2W8	5.1	5.00	5.20	5	60	480	1.0	2	2.0
SZT52B5V6-AT	2W9	5.6	5.49	5.71	5	40	400	1.0	1	2.0
SZT52B6V2-AT	2WA	6.2	6.08	6.32	5	10	150	1.0	3	4.0
SZT52B6V8-AT	2WB	6.8	6.66	6.94	5	15	80	1.0	2	4.0
SZT52B7V5-AT	2WC	7.5	7.35	7.65	5	15	80	1.0	1	5.0
SZT52B8V2-AT	2WD	8.2	8.04	8.36	5	15	80	1.0	0.7	5.0

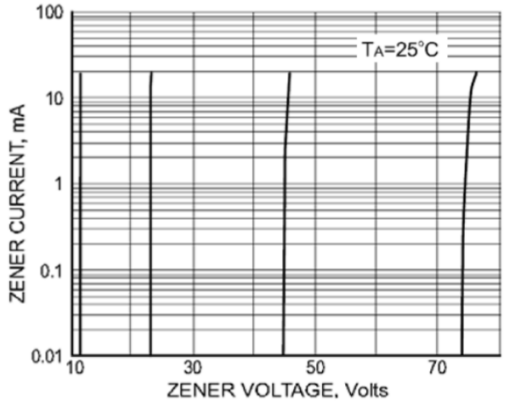
Type Number	Device Marking	Vz (V) (Note 1)			I_{ZT}	Z_{ZT}@I_{ZT}	Z_{ZK}@I_{ZK}	Izk (mA)	IR (uA)	VR (V) Max
		Nom(V)	Min(V)	Max(V)	mA	Ω				
SZT52B9V1-AT	2WE	9.1	8.92	9.28	5	15	100	1.0	0.5	6.0
SZT52B10-AT	2WF	10	9.80	10.20	5	20	150	1.0	0.2	7.0
SZT52B11-AT	2WG	11	10.78	11.22	5	20	150	1.0	0.1	8.0
SZT52B12-AT	2WH	12	11.76	12.24	5	25	150	1.0	0.1	8.0
SZT52B13-AT	2WI	13	12.74	13.26	5	30	170	1.0	0.1	8.0
SZT52B14-AT	2WY	14	13.72	14.28	5	25	110	1.0	0.1	10.5
SZT52B15-AT	2WJ	15	14.70	15.30	5	30	200	1.0	0.1	10.5
SZT52B16-AT	2WK	16	15.68	16.32	5	40	200	1.0	0.1	11.2
SZT52B18-AT	2WL	18	17.64	18.36	5	45	225	1.0	0.1	12.6
SZT52B20-AT	2WM	20	19.60	20.40	5	55	225	1.0	0.1	14.0
SZT52B22-AT	2WN	22	21.56	22.44	5	55	250	1.0	0.1	15.4
SZT52B24-AT	2WO	24	23.52	24.48	5	70	250	1.0	0.1	16.8
SZT52B27-AT	2WP	27	26.46	27.54	2	80	300	0.5	0.1	18.9
SZT52B30-AT	2WQ	30	29.40	30.60	2	80	300	0.5	0.1	21.0
SZT52B33-AT	2WR	33	32.34	33.66	2	80	325	0.5	0.1	23.1
SZT52B36-AT	2WS	36	35.28	36.72	2	90	350	0.5	0.1	25.2
SZT52B39-AT	2WT	39	38.22	39.78	2	130	350	0.5	0.1	27.3
SZT52B43-AT	2WU	43	42.14	43.86	2	130	350	0.5	0.1	29.4
SZT52B47-AT	2WV	47	45.83	48.17	2	170	1000	0.25	0.1	36

Note1:Pulse Width=10ms

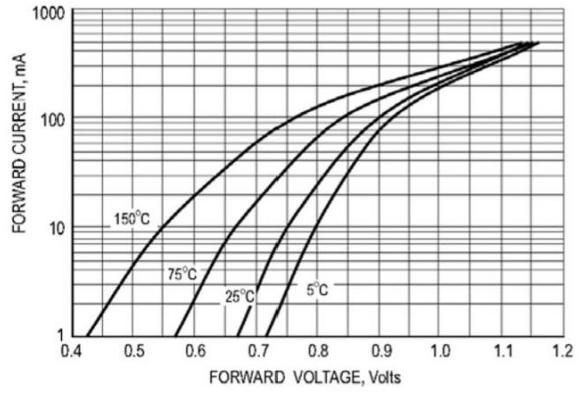
Typical Characteristics



ZENER BREAKDOWN CHARACTERISTIC

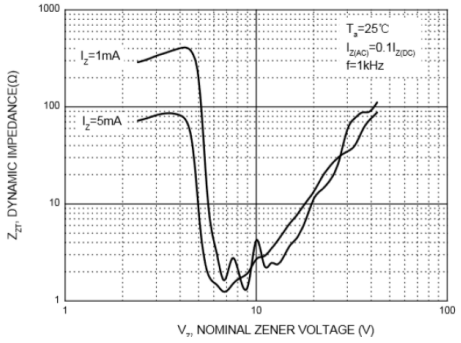


ZENER BREAKDOWN CHARACTERISTICS

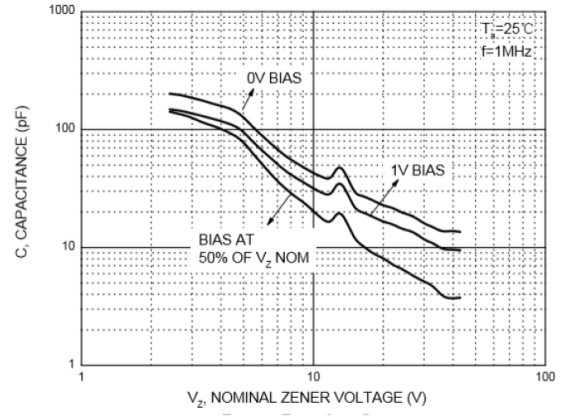


TYPICAL FORWARD VOLTAGE

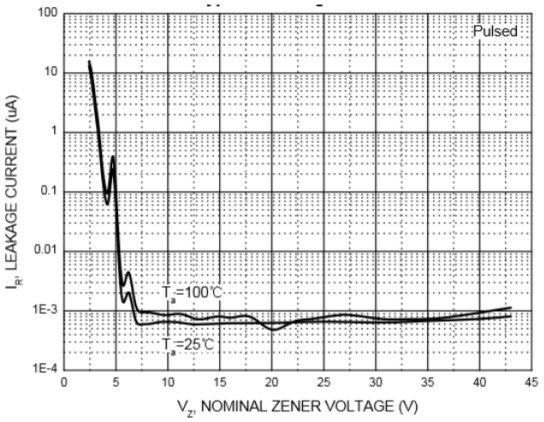
ZENER BREAKDOWN CHARACTERISTICS



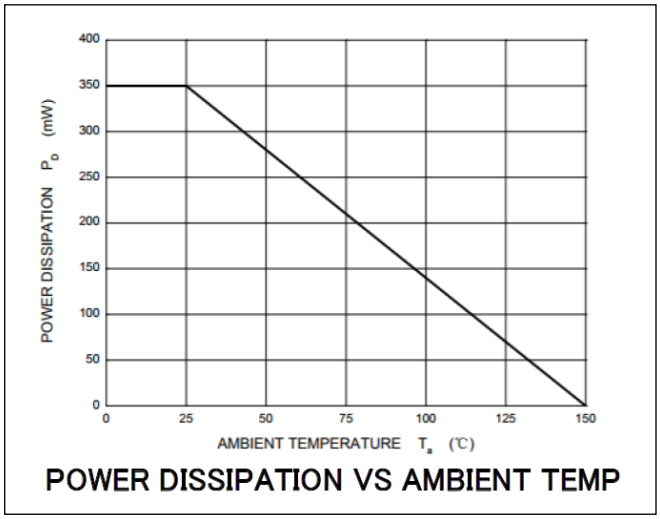
Effect of Zener Voltage on Zener Impedance



Typical Capacitance



Typical Leakage Current

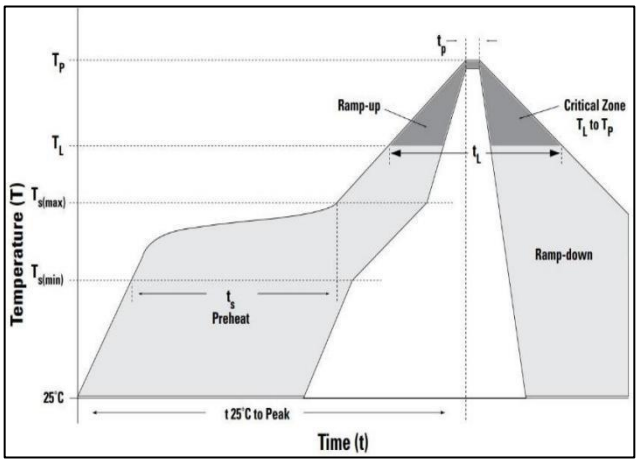


POWER DISSIPATION VS AMBIENT TEMP

Soldering Parameters

Reflow Condition		Lead–free assembly
Pre Heat	- Temperature Min ($T_{s(min)}$)	150°C
	- Temperature Max ($T_{s(max)}$)	200°C
	- Time (min to max) (t_s)	60 – 120 secs
Average ramp up rate (Liquidus Temp (T_A) to peak		3°C/second max
$T_{S(max)}$ to T_A - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T_A) (Liquidus)	217°C
	- Time (min to max) (t_s)	60 – 150 seconds
Peak Temperature (T_P)		$260^{+0/-5}$ °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

Soldering profile

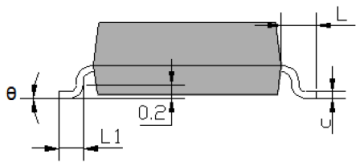


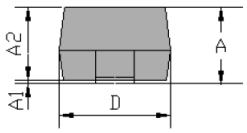
Order Information

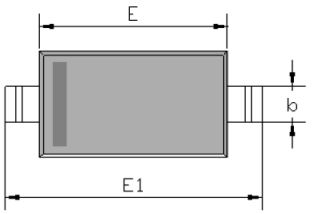
Device	Package	Shipping	Notes
SZT52B-AT Series	SOD123	Tape & Reel 3000pcs /7" Reel	

Package Dimensions

SOD-123



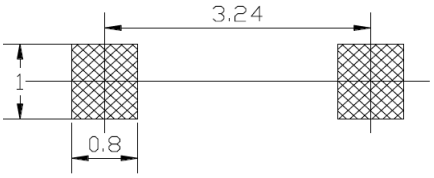




SOD123 Package Outline

Unit	A	A1	A2	b	c	D	E	E1	L	L1	θ
Max.	1.25	0.10	1.15	0.65	0.15	1.70	2.80	3.85	0.500 REF.	0.45	8°
Min.	1.05	0.00	1.05	0.45	0.08	1.50	2.60	3.55		0.25	0°

Note:
1. Halogen free,EMC
2. Pb free solder
3. Lead thickness includes solder plating
4. Lead frame: A42
5. Other Tolerance: ±0.05
6. Dimensions are exclusive of Burrs,Mold Flash and Tie Bar extrusions
7. Unit: mm



Land Pattern Recommendation

Revision history of Specification

Version	Change Items	Effective Date
1.0	Initial Release	13-Aug-2021
1.1	Update Key Marking	10-Jul-2023
1.2	Add MSL Level Add Soldering Parameters Add Soldering profile Update PD （Power Dissipation）	7-Apr-2024
1.3	Add VF	9- Apr-2024

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