



**THE DATASHEET OF  
BLM18SP300SH1D**



## Features

- Planar Die Construction
- ESD Protected up to 16KV (HBM)
- Halogen Free. "Green" Device (Note 1)
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant t ("P" Suffix Designates RoHS Compliant. See Ordering Information)

**200 mW  
Zener Diode  
2.4 to 39 Volts**

## Maximum Ratings

- Operating Junction Temperature Range: -65°C to +150°C
- Storage Temperature Range: -65°C to +150°C
- Thermal Resistance :625°C/W Junction to Ambient(Note 2)  
417°C/W Junction to Ambient(Note 3)

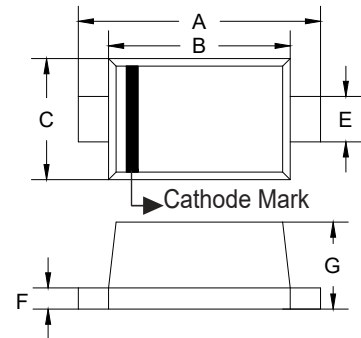
Parameter	Symbol	Rating	Conditions
Power Dissipation	P <sub>D</sub>	200mW	Note 2
		300mW	Note 3
Maximum Forward Voltage	V <sub>F</sub>	0.9V	I <sub>F</sub> =10mA

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

2. Part mounted on FR-4 board with recommended pad layout.

3. Device mounted on an FR4 Printed-Circuit Board (PCB) with approximately 35 mm<sup>2</sup> Cu area at cathode tab

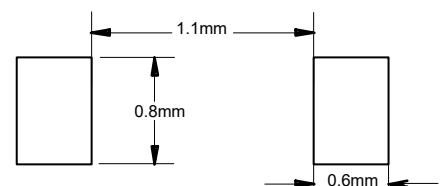
## SOD-523



## DIMENSIONS

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.059	0.067	1.50	1.70	
B	0.043	0.051	1.10	1.30	
C	0.030	0.033	0.75	0.85	
E	0.010	0.014	0.25	0.35	
F	0.003	0.008	0.08	0.20	
G	0.020	0.026	0.50	0.65	

## Suggested Solder Pad Layout



**Electrical Characteristics @ 25°C Unless Otherwise Specified**

MCC Part Number <sup>(4)</sup>	Zener Voltage <sup>(2)</sup>			Maximum Zener Impedance <sup>(3)</sup>		Maximum Zener Impedance <sup>(3)</sup>		Maximum Reverse Current		Typical Temperature Coefficient @ I <sub>ZTC</sub>		Marking Code <sup>(4)</sup>
	V <sub>Z</sub> @ I <sub>ZT</sub>			I <sub>ZT</sub>	Z <sub>ZT</sub>	I <sub>ZK</sub>	Z <sub>ZK</sub>	I <sub>R</sub>	V <sub>R</sub>	Min	Max.	
	Min.(V)	Nom(V)	Max.(V)	mA	Ω	mA	Ω	Max.(μA)	V	mV/°C		
BZT52C2V4T	2.28	2.4	2.56	5	100	1.0	600	50	1.0	-3.5	0	Z11
BZT52C2V7T	2.5	2.7	2.9	5	100	1.0	600	20	1.0	-3.5	0	Z12
BZT52C3V0T	2.8	3.0	3.2	5	95	1.0	600	10	1.0	-3.5	0	Z13
BZT52C3V3T	3.1	3.3	3.5	5	95	1.0	600	5	1.0	-3.5	0	Z14
BZT52C3V6T	3.4	3.6	3.8	5	90	1.0	600	5	1.0	-3.5	0	Z15
BZT52C3V9T	3.7	3.9	4.1	5	90	1.0	600	3	1.0	-3.5	0	Z16
BZT52C4V3T	4.0	4.3	4.6	5	90	1.0	600	3	1.0	-3.5	0	Z17
BZT52C4V7T	4.4	4.7	5.0	5	80	1.0	500	3	2.0	-3.5	0.2	Z1
BZT52C5V1T	4.8	5.1	5.4	5	60	1.0	480	2	2.0	-2.7	1.2	Z2
BZT52C5V6T	5.2	5.6	6.0	5	40	1.0	400	1	2.0	-2.0	2.5	Z3
BZT52C6V2T	5.8	6.2	6.6	5	10	1.0	150	3	4.0	0.4	3.7	Z4
BZT52C6V8T	6.4	6.8	7.2	5	15	1.0	80	2	4.0	1.2	4.5	Z5
BZT52C7V5T	7.0	7.5	7.9	5	15	1.0	80	1	5.0	2.5	5.3	Z6
BZT52C8V2T	7.7	8.2	8.7	5	15	1.0	80	0.7	5.0	3.2	6.2	Z7
BZT52C9V1T	8.5	9.1	9.6	5	15	1.0	100	0.5	6.0	3.8	7.0	Z8
BZT52C10T	9.4	10	10.6	5	20	1.0	150	0.2	7.0	4.5	8.0	Z9
BZT52C11T	10.4	11	11.6	5	20	1.0	150	0.1	8.0	5.4	9.0	Y1
BZT52C12T	11.4	12	12.7	5	25	1.0	150	0.1	8.0	6.0	10.0	Y2
BZT52C13T	12.4	13	14.1	5	30	1.0	170	0.1	8.0	7.0	11.0	Y3
BZT52C15T	13.8	15	15.6	5	30	1.0	200	0.1	10.5	9.2	13.0	Y4
BZT52C16T	15.3	16	17.1	5	40	1.0	200	0.1	11.2	10.4	14.0	Y5
BZT52C18T	16.8	18	19.1	5	45	1.0	225	0.1	12.6	12.4	16.0	Y6
BZT52C20T	18.8	20	21.2	5	55	1.0	225	0.1	14.0	14.4	18.0	Y7
BZT52C22T	20.8	22	23.3	5	55	1.0	250	0.1	15.4	16.4	20.0	Y8
BZT52C24T	22.8	24	25.6	5	70	1.0	250	0.1	16.8	18.4	22.0	Y9
BZT52C27T	25.1	27	28.9	2	80	0.5	300	0.1	18.9	21.4	25.3	Y10
BZT52C30T	28	30	32	2	80	0.5	300	0.1	21.0	24.4	29.4	Y11
BZT52C33T	31	33	35	2	80	0.5	325	0.1	23.1	27.4	33.4	Y12
BZT52C36T	34	36	38	2	90	0.5	350	0.1	25.2	30.4	37.4	Y13
BZT52C39T	37	39	41	2	130	0.5	350	0.1	27.3	33.4	41.2	Y14

- Note :
2. Tested with pulses, period = 5ms, pulse width=300us
  3. f=1KHz
  4. Standard Zener voltage tolerance is ±5% with a "C" suffix (e.g.: BZT52C2V4T),suffix "B" is ± 2 % tolerance (e.g.: BZT52B2V4T)

**Electrical Characteristics @ 25°C Unless Otherwise Specified**

MCC Part Number <sup>(4)</sup>	Zener Voltage <sup>(2)</sup>			Maximum Zener Impedance <sup>(3)</sup>		Maximum Zener Impedance <sup>(3)</sup>		Maximum Reverse Current		Typical Temperature Coefficient @ I <sub>ZT</sub>		Marking Code <sup>(4)</sup>
	V <sub>Z</sub> @ I <sub>ZT</sub>			I <sub>ZT</sub>	Z <sub>ZT</sub>	I <sub>ZK</sub>	Z <sub>ZK</sub>	I <sub>R</sub>	V <sub>R</sub>	Min	Max.	
	Min.(V)	Nom(V)	Max.(V)	mA	Ω	mA	Ω	Max.(μA)	V	mV/°C		
BZT52B2V4T	2.35	2.4	2.45	5	100	1.0	600	50	1.0	-3.5	0	.Z11
BZT52B2V7T	2.65	2.7	2.75	5	100	1.0	600	20	1.0	-3.5	0	.Z12
BZT52B3V0T	2.94	3.0	3.06	5	95	1.0	600	10	1.0	-3.5	0	.Z13
BZT52B3V3T	3.23	3.3	3.37	5	95	1.0	600	5	1.0	-3.5	0	.Z14
BZT52B3V6T	3.53	3.6	3.67	5	90	1.0	600	5	1.0	-3.5	0	.Z15
BZT52B3V9T	3.82	3.9	3.98	5	90	1.0	600	3	1.0	-3.5	0	.Z16
BZT52B4V3T	4.21	4.3	4.39	5	90	1.0	600	3	1.0	-3.5	0	.Z17
BZT52B4V7T	4.61	4.7	4.79	5	80	1.0	500	3	2.0	-3.5	0.2	.Z1
BZT52B5V1T	5.00	5.1	5.20	5	60	1.0	480	2	2.0	-2.7	1.2	.Z2
BZT52B5V6T	5.49	5.6	5.71	5	40	1.0	400	1	2.0	-2.0	2.5	.Z3
BZT52B6V2T	6.08	6.2	6.32	5	10	1.0	150	3	4.0	0.4	3.7	.Z4
BZT52B6V8T	6.66	6.8	6.94	5	15	1.0	80	2	4.0	1.2	4.5	.Z5
BZT52B7V5T	7.35	7.5	7.65	5	15	1.0	80	1	5.0	2.5	5.3	.Z6
BZT52B8V2T	8.04	8.2	8.36	5	15	1.0	80	0.7	5.0	3.2	6.2	.Z7
BZT52B9V1T	8.92	9.1	9.28	5	15	1.0	100	0.5	6.0	3.8	7.0	.Z8
BZT52B10T	9.80	10	10.20	5	20	1.0	150	0.2	7.0	4.5	8.0	.Z9
BZT52B11T	10.78	11	11.22	5	20	1.0	150	0.1	8.0	5.4	9.0	.Y1
BZT52B12T	11.76	12	12.24	5	25	1.0	150	0.1	8.0	6.0	10.0	.Y2
BZT52B13T	12.74	13	13.26	5	30	1.0	170	0.1	8.0	7.0	11.0	.Y3
BZT52B15T	14.70	15	15.30	5	30	1.0	200	0.1	10.5	9.2	13.0	.Y4
BZT52B16T	15.68	16	16.32	5	40	1.0	200	0.1	11.2	10.4	14.0	.Y5
BZT52B18T	17.64	18	18.36	5	45	1.0	225	0.1	12.6	12.4	16.0	.Y6
BZT52B20T	19.60	20	20.40	5	55	1.0	225	0.1	14.0	14.4	18.0	.Y7
BZT52B22T	21.56	22	22.44	5	55	1.0	250	0.1	15.4	16.4	20.0	.Y8
BZT52B24T	23.52	24	24.48	5	70	1.0	250	0.1	16.8	18.4	22.0	.Y9
BZT52B27T	26.46	27	27.54	2	80	0.5	300	0.1	18.9	21.4	25.3	.Y10
BZT52B30T	29.40	30	30.60	2	80	0.5	300	0.1	21.0	24.4	29.4	.Y11
BZT52B33T	32.34	33	33.66	2	80	0.5	325	0.1	23.1	27.4	33.4	.Y12
BZT52B36T	35.28	36	36.72	2	90	0.5	350	0.1	25.2	30.4	37.4	.Y13
BZT52B39T	38.22	39	39.78	2	130	0.5	350	0.1	27.3	33.4	41.2	.Y14

Note :

2. Tested with pulses, period = 5ms, pulse width=300us
3. f=1KHz
4. Standard Zener voltage tolerance is ±5% with a "C" suffix (e.g.: BZT52C2V4T),suffix "B" is ± 2 % tolerance (e.g.: BZT52B2V4T)

### Curve Characteristics

Fig. 1 - Power Derating Curve

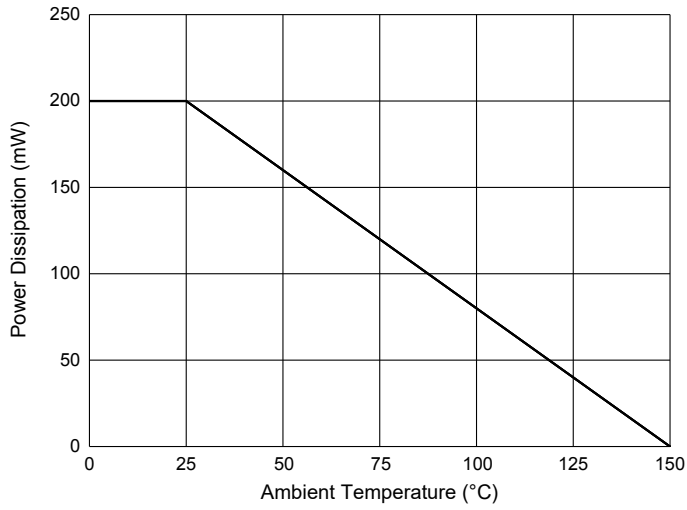


Fig. 2 - Typical Zener Breakdown Characteristics

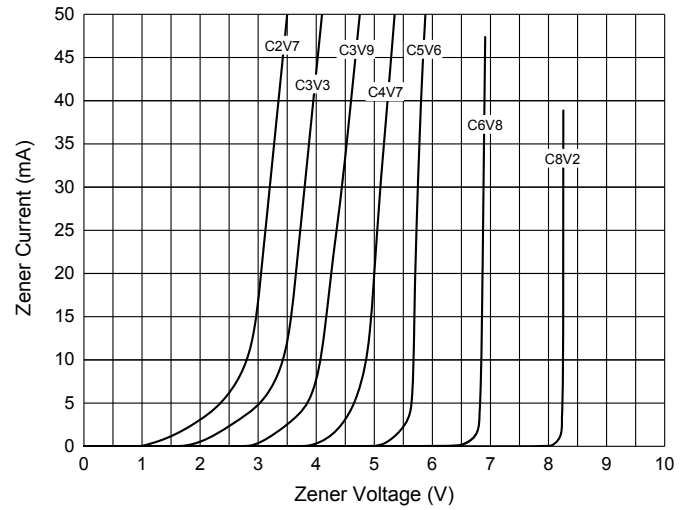
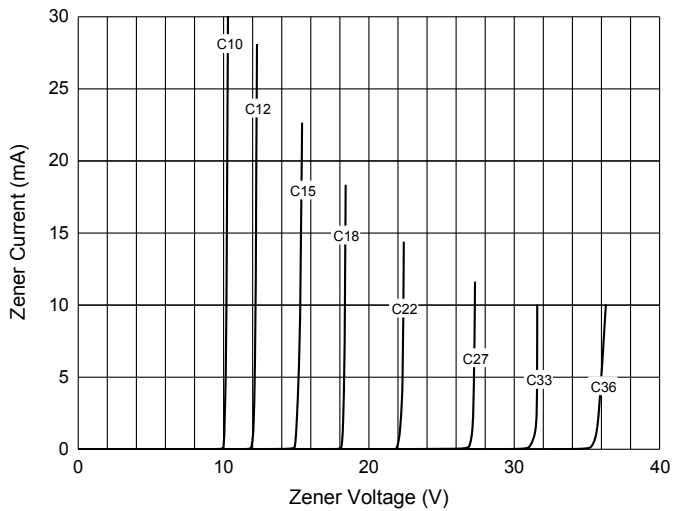


Fig. 3 - Typical Zener Breakdown Characteristics



## Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:8Kpcs/Reel
Part Number-T3P	Tape&Reel:3Kpcs/Reel

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