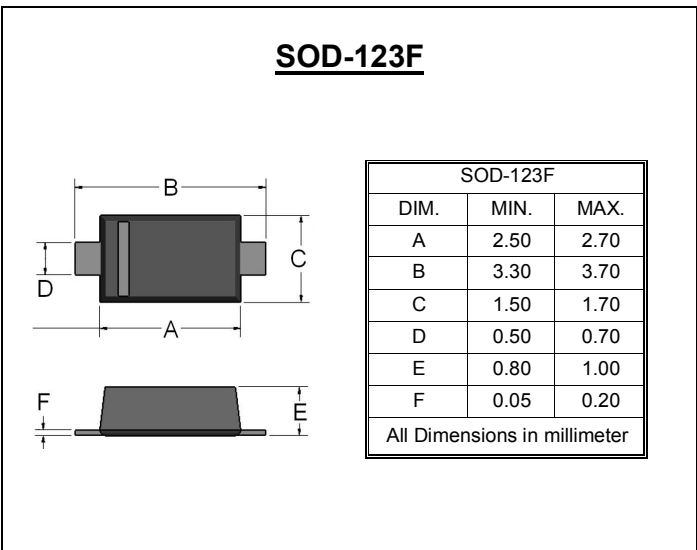


**SURFACE MOUNT ZENER DIODE**

**REVERSE VOLTAGE – 2.4 to 75 Volts  
POWER DISSIPATION – 0.5 Watts**

- FEATURES**
- Wide Zener Voltage Range Selection, 2.4V to 75V
  - VZ Tolerance Selection of ±5% (C Series)
  - Flat Lead SOD-123F Plastic Package
  - Surface Device Type Mounting
  - Green EMC
  - Matte Tin(Sn) Lead Finish
  - RoHS compliant
  - Band Indicates Cathode
- MECHANICAL DATA**
- Case: SOD-123F Plastic



**Maximum Ratings & Thermal Characteristics @ T<sub>A</sub> = 25°C unless otherwise specified**

Characteristic	Symbol	Value	Unit
Power Dissipation	PD	500	mW
Storage Temperature Range	TSTG	-65 to +150	°C
Operating Temperature Range	TOPR	-65 to +150	°C

**Device Marking :**

Device P/N	Marking	Pin Diagram	Equivalent Circuit Diagram
MMSZ52xxBF	See below table		

**Electrical Characteristics @ T<sub>A</sub> = 25°C unless otherwise specified**

Symbol	Parameter
V <sub>Z</sub>	Reverse Zener Voltage @ I <sub>ZT</sub>
I <sub>ZT</sub>	Reverse Current
Z <sub>ZT</sub>	Maximum Zener Impedance @ I <sub>ZT</sub>
I <sub>ZK</sub>	Reverse Current
Z <sub>ZK</sub>	Maximum Zener Impedance @ I <sub>ZK</sub>
I <sub>R</sub>	Reverse Leakage Current @ V <sub>R</sub>
V <sub>R</sub>	Reverse Voltage
I <sub>F</sub>	Forward Current
V <sub>F</sub>	Forward Voltage @ I <sub>F</sub>

**Electrical Characteristics**

TA = 25°C unless otherwise noted

Device	Device marking	Zener Voltage				Maximum Zener Impedance		Maximum Reverse Current	
		V <sub>Z</sub> @ I <sub>ZT</sub>			I <sub>ZT</sub>	Z <sub>KT</sub> @ I <sub>ZT</sub>	Z <sub>ZK</sub> @ I <sub>ZK</sub> = 0.25mA	I <sub>R</sub> @ V <sub>R</sub>	
		Min	Nom	Max	mA	Ω	Ω	μA	V
MMSZ5221BF	Z2V4	2.28	2.4	2.52	20	30	1200	100	1
MMSZ5222BF	Z2V5	2.38	2.5	2.63	20	30	1250	100	1
MMSZ5223BF	Z2V7	2.57	2.7	2.84	20	30	1300	75	1
MMSZ5224BF	Z2V8	2.66	2.8	2.94	20	30	1400	75	1
MMSZ5225BF	Z3V0	2.85	3.0	3.15	20	29	1600	50	1
MMSZ5226BF	Z3V3	3.14	3.3	3.47	20	28	1600	25	1
MMSZ5227BF	Z3V6	3.42	3.6	3.78	20	24	1700	15	1
MMSZ5228BF	Z3V9	3.71	3.9	4.10	20	23	1900	10	1
MMSZ5229BF	Z4V3	4.09	4.3	4.52	20	22	2000	5	1
MMSZ5230BF	Z4V7	4.47	4.7	4.94	20	19	1900	5	2
MMSZ5231BF	Z5V1	4.85	5.1	5.36	20	17	1600	5	2
MMSZ5232BF	Z5V6	5.32	5.6	5.88	20	11	1600	5	3
MMSZ5233BF	Z6V0	5.70	6.0	6.30	20	7	1600	5	3.5
MMSZ5234BF	Z6V2	5.89	6.2	6.51	20	7	1000	5	4
MMSZ5235BF	Z6V8	6.46	6.8	7.14	20	5	750	3	5
MMSZ5236BF	Z7V5	7.13	7.5	7.88	20	6	500	3	6
MMSZ5237BF	Z8V2	7.79	8.2	8.61	20	8	500	3	6.5
MMSZ5238BF	Z8V7	8.27	8.7	9.14	20	8	600	3	6.5
MMSZ5239BF	Z9V1	8.65	9.1	9.56	20	10	600	3	7
MMSZ5240BF	Z10V	9.50	10	10.50	20	17	600	3	8
MMSZ5241BF	Z11V	10.45	11	11.55	20	22	600	2	8.4
MMSZ5242BF	Z12V	11.40	12	12.60	20	30	600	1	9.1
MMSZ5243BF	Z13V	12.35	13	13.65	9.5	13	600	0.5	9.9
MMSZ5244BF	Z14V	13.30	14	14.70	9	15	600	0.1	10
MMSZ5245BF	Z15V	14.25	15	15.75	8.5	16	600	0.1	11
MMSZ5246BF	Z16V	15.20	16	16.80	7.8	17	600	0.1	12
MMSZ5247BF	Z17V	16.15	17	17.85	7.4	19	600	0.1	13
MMSZ5248BF	Z18V	17.10	18	18.90	7	21	600	0.1	14
MMSZ5249BF	Z19V	18.05	19	19.95	6.6	23	600	0.1	14
MMSZ5250BF	Z20V	19.00	20	21.00	6.2	25	600	0.1	15
MMSZ5251BF	Z22V	20.90	22	23.10	5.6	29	600	0.1	17
MMSZ5252BF	Z24V	22.80	24	25.20	5.2	33	600	0.1	18
MMSZ5253BF	Z25V	23.75	25	26.25	5	35	600	0.1	19
MMSZ5254BF	Z27V	25.65	27	28.35	4.6	41	600	0.1	21
MMSZ5255BF	Z28V	26.60	28	29.40	4.5	44	600	0.1	21
MMSZ5256BF	Z30V	28.50	30	31.50	4.2	49	600	0.1	23
MMSZ5257BF	Z33V	31.35	33	34.65	3.8	58	700	0.1	25
MMSZ5258BF	Z36V	34.20	36	37.80	3.4	70	700	0.1	27
MMSZ5259BF	Z39V	37.05	39	40.95	3.2	80	800	0.1	30
MMSZ5260BF	Z43V	40.85	43	45.15	3	93	900	0.1	33
MMSZ5261BF	Z47V	44.65	47	49.35	2.7	105	1000	0.1	36
MMSZ5262BF	Z51V	48.45	51	53.55	2.5	125	1100	0.1	39
MMSZ5263BF	Z56V	53.20	56	58.80	2.2	150	1300	0.1	43
MMSZ5264BF	Z60V	57.00	60	63.00	2.1	170	1400	0.1	46
MMSZ5265BF	Z62V	58.90	62	65.10	2.0	185	1400	0.1	47
MMSZ5266BF	Z68V	64.60	68	71.40	1.8	230	1600	0.1	52
MMSZ5267BF	Z75V	71.25	75	78.75	1.7	270	1700	0.1	56

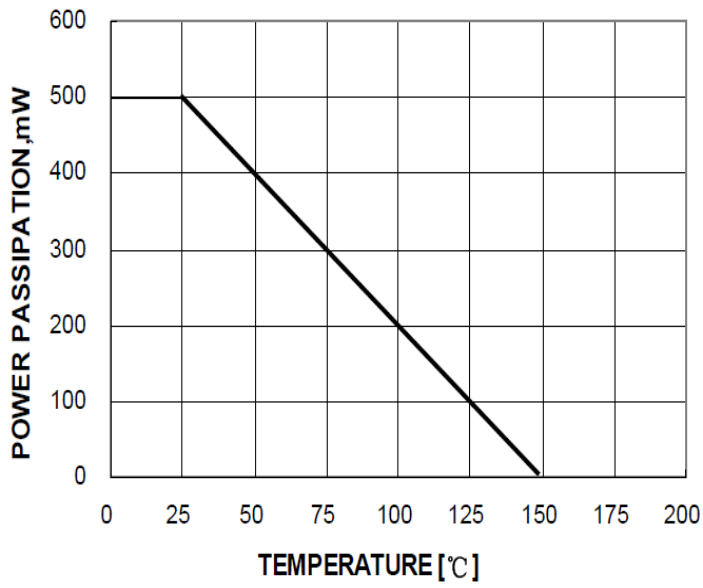
**VF** Forward Voltage=900mV Maximum@IF=10mA for all types

**Notes:**

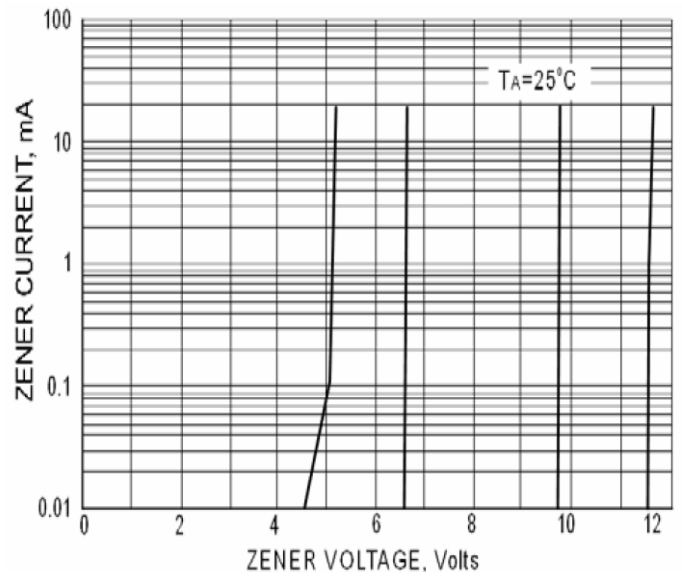
1. The zener voltage (V<sub>Z</sub>) is tested under pulse condition of 1mS.
2. The device numbers listed have a standard tolerance on the nominal zener voltage of ±5%.
3. The zener impedance is derived from the 60-cycle ac voltage, which results when an ac current having an rms value equal to 10% of the dc zener current (I<sub>ZT</sub> or I<sub>ZK</sub>) is superimposed to I<sub>ZT</sub> or I<sub>ZK</sub>.
4. For detailed information on price, availability and delivery of nominal zener voltages between the voltages shown and tighter voltage tolerances, contact your nearest Liteon Semiconductor Corp. representative.

**MMSZ5221BF THRU MMSZ5267BF**  
**Typical Characteristics**

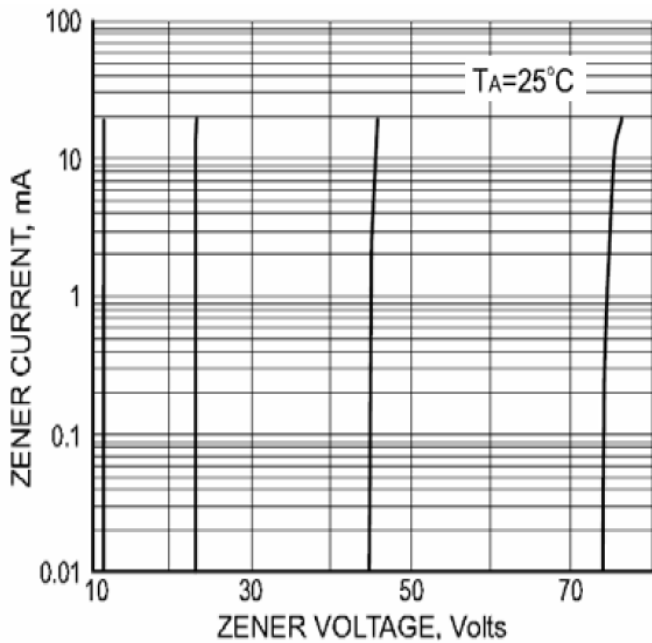
**Fig.1 Power Derating Curve**



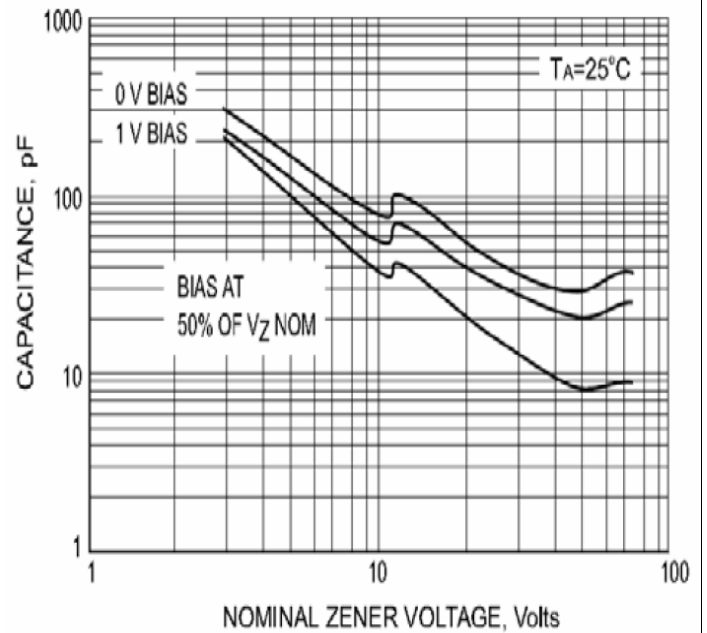
**Fig.2 Typical Zener Breakdown Characteristics**



**Fig.3 Typical Zener Breakdown Characteristics**

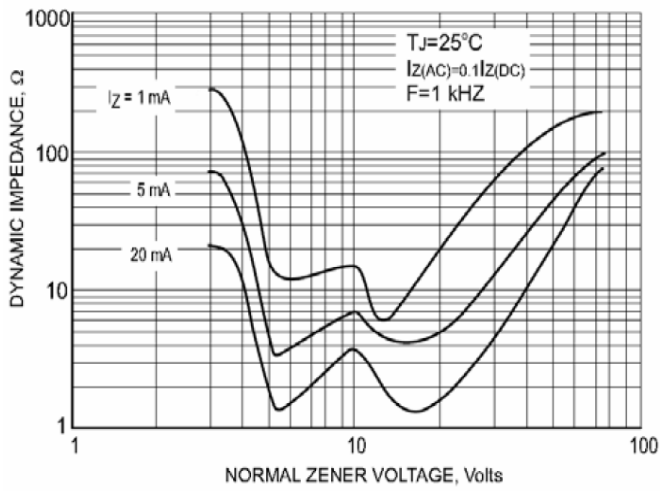


**Fig.4 Typical Total Capacitance vs. Nominal Zener Voltage**

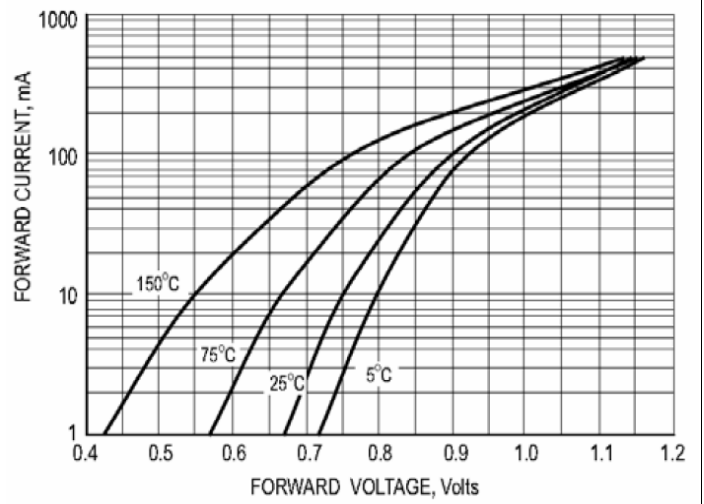


**MMSZ5221BF THRU MMSZ5267BF**  
**Typical Characteristics**

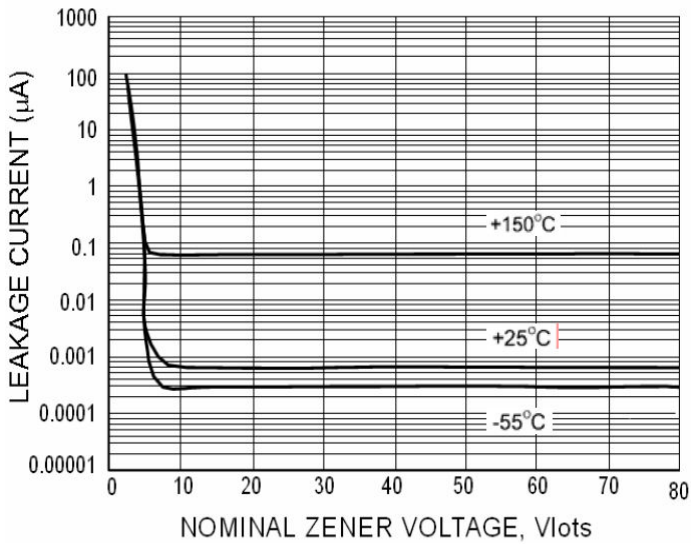
**Fig.5 EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE**



**Fig.6 TYPICAL FORWARD VOLTAGE**



**Fig.7 TYPICAL LEAKGE CURRENT**



## **Important Notice and Disclaimer**

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