

SURFACE MOUNT ZENER DIODE

VOLTAGE RANGE 2.4 to 43 Volts POWER RATING 500 mWatts

FEATURES

- * Wide Zener Reverse Voltage Range : 2.4V to 43V
- * 500mW Rating on FR-4 or FR-5 Board
- * Small Package Size for High Density Applications
- * Ideally Suited for Automated Assembly Processes
- * ESD Rating of Class 3 (>16kV) per Human Body Model

MECHANICAL DATA

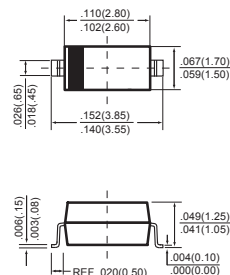
- * Case: Molded plastic
- * Epoxy: UL 94V-O rate flame retardant
- * Lead: MIL-STD-202E method 208C guaranteed
- * Mounting position: Any
- * Weight: 0.01 gram

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified.



SOD-123



Dimensions in inches and (millimeters)

MAXIMUM RATINGS (@ TA = 25°C unless otherwise noted)

RATINGS	SYMBOL	VALUE	UNITS
Max. Power Dissipation on FR-5 Board, @T _L =75°C (Note 1)	P _D	500	mW
Derated above 75°C		6.7	mW/°C
Max. Operating Temperature Range	T _J	150	°C
Storage Temperature Range	T _{STG}	-55 to +150	°C

ELECTRICAL CHARACTERISTICS (@ TA = 25°C unless otherwise noted)

CHARACTERISTICS	SYMBOL	MIN.	TYP.	MAX.	UNITS
Thermal Resistance Junction to Ambient (Note 2)	R _{θJA}	-	-	340	°C/W
Thermal Resistance Junction to Lead (Note 2)	R _{θJL}	-	-	150	°C/W
Max. Instantaneous Forward Voltage at I _F = 10mA	V _F	-	-	0.95	Volts

Note 1. FR-5 = 3.5 X 1.5 inches, using the minimum recommended footprint.
2. Thermal Resistance measurement obtained via infrared Scan Method.

VC 2007-11

ELECTRICAL CHARACTERISTICS (@TA=25°C unless otherwise specified)

Device	Device Marking	Zener Voltage (Note 1)				Leakage Current	
		V _Z (Volts)			@ I _{ZT}	I _R @ V _R	
		Min	Nom	Max	uA	uA	Volts
MMSZ4681	CF	2.28	2.4	2.52	50	2	1
MMSZ4682	CH	2.565	2.7	2.835	50	1	1
MMSZ4683	CJ	2.85	3.0	3.15	50	0.8	1
MMSZ4684	CK	3.13	3.3	3.47	50	7.5	1.5
MMSZ4685	CM	3.42	3.6	3.78	50	7.5	2
MMSZ4686	CN	3.70	3.9	4.10	50	5	2
MMSZ4687	CP	4.09	4.3	4.52	50	4	2
MMSZ4688	CT	4.47	4.7	4.94	50	10	3
MMSZ4689	CU	4.85	5.1	5.36	50	10	3
MMSZ4690	CV	5.32	5.6	5.88	50	10	4
MMSZ4691	CA	5.89	6.2	6.51	50	10	5
MMSZ4692	CX	6.46	6.8	7.14	50	10	5.1
MMSZ4693	CY	7.13	7.5	7.88	50	10	5.7
MMSZ4694	CZ	7.79	8.2	8.61	50	1	6.2
MMSZ4695	DC	8.27	8.7	9.14	50	1	6.6
MMSZ4696	DD	8.65	9.1	9.56	50	1	6.9
MMSZ4697	DE	9.50	10	10.50	50	1	7.6
MMSZ4698	DF	10.45	11	11.55	50	0.05	8.4
MMSZ4699	DH	11.40	12	12.60	50	0.05	9.1
MMSZ4700	DJ	12.35	13	13.65	50	0.05	9.8
MMSZ4701	DK	13.30	14	14.70	50	0.05	10.6
MMSZ4702	DM	14.25	15	15.75	50	0.05	11.4
MMSZ4703	DN	15.20	16	16.80	50	0.05	12.1
MMSZ4704	DP	16.15	17	17.85	50	0.05	12.9
MMSZ4705	DT	17.10	18	18.90	50	0.05	13.6
MMSZ4706	DU	18.05	19	19.95	50	0.05	14.4
MMSZ4707	DV	19.00	20	21.00	50	0.01	15.2
MMSZ4708	DA	20.90	22	23.10	50	0.01	16.7
MMSZ4709	DX	22.80	24	25.20	50	0.01	18.2
MMSZ4710	DY	23.75	25	26.25	50	0.01	19.0
MMSZ4711	EA	25.65	27	28.35	50	0.01	20.4
MMSZ4712	EC	26.60	28	29.40	50	0.01	21.2
MMSZ4713	ED	28.50	30	31.50	50	0.01	22.8
MMSZ4714	EE	31.35	33	34.65	50	0.01	25.0
MMSZ4715	EF	34.20	36	37.80	50	0.01	27.3
MMSZ4716	EH	37.05	39	40.95	50	0.01	29.6
MMSZ4717	EJ	40.85	43	45.15	50	0.01	32.6

Notes 1. Nominal Zener voltage is measured with the device junction in thermal equilibrium at T_L = 30°C ±1°C.

2. "Fully RoHS Compliant", "100% Sn Plating (Pb-free)".

RATING AND CHARACTERISTICS CURVES (MMSZ4681-MMSZ4717)

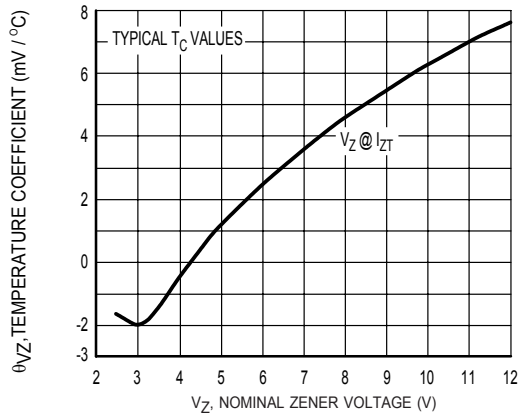


Figure 1 Temperature Coefficients
(Temperature Range -55°C to +150°C)

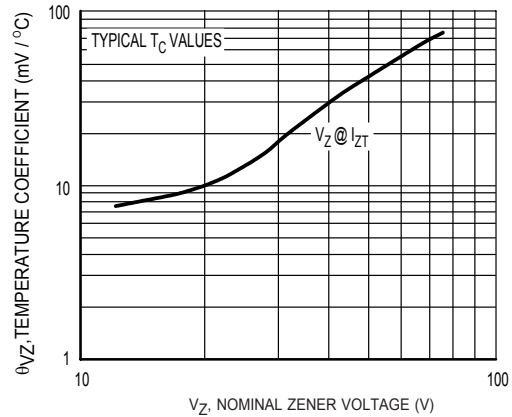


Figure 2 Temperature Coefficients
(Temperature Range -55°C to +150°C)

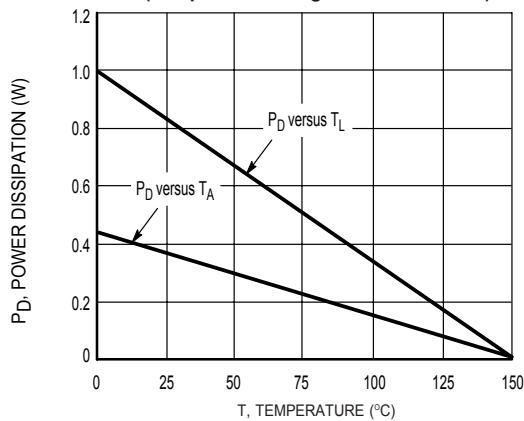


Figure 3 Steady State Power Derating

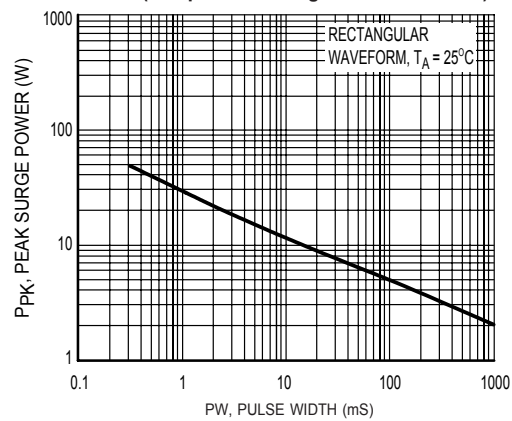


Figure 4 Maximum Nonrepetitive Surge Power

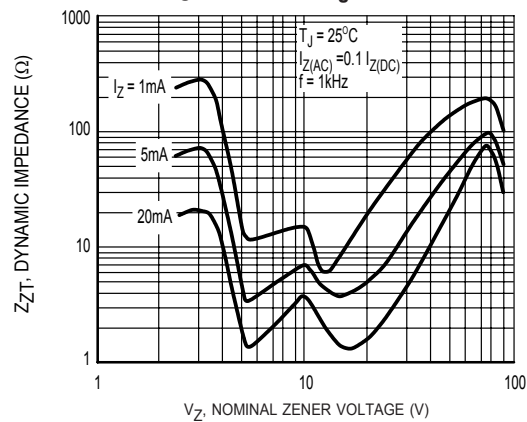


Figure 5 Effect of Zener Voltage on
Zener Impedance

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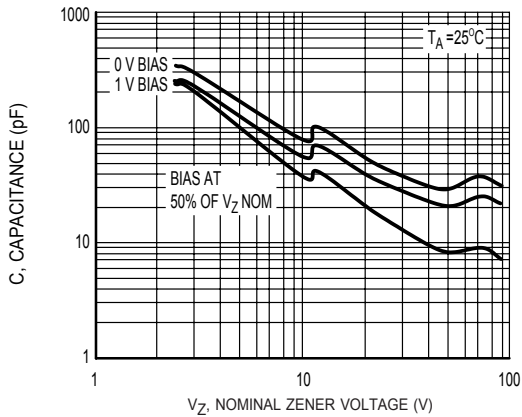


Figure 7 Typical Capacitance

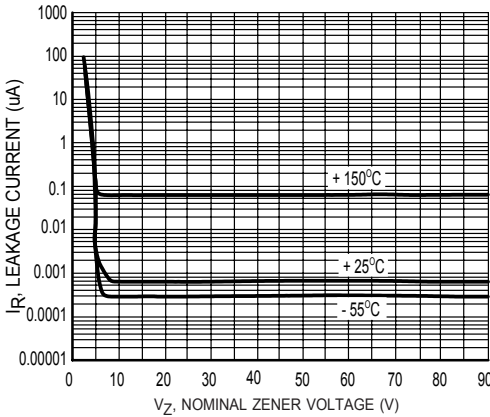
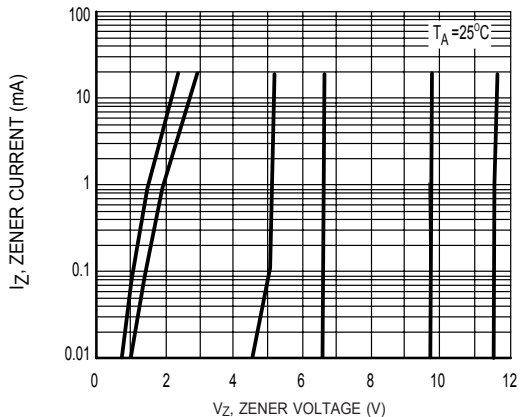
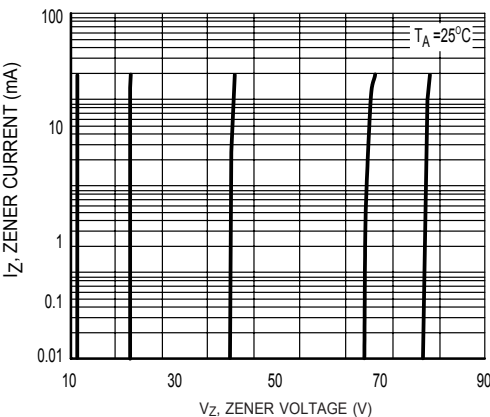


Figure 8 Typical Leakage Current



**Figure 9 Zener Voltage vs. Zener Current
(V_Z Up to 12V)**



**Figure 10 Zener Voltage vs. Zener Current
(12 V to 43V)**

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