



**MMSZ4678  
 THRU  
 MMSZ4716**

**500mW Silicon  
 Zener Diodes**

**Features**

- Zener Voltage 1.8V-39V
- Very Sharp Reverse Characteristic
- VZ – tolerance  $\pm 5\%$
- High Reliability
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

**Mechanical Data**

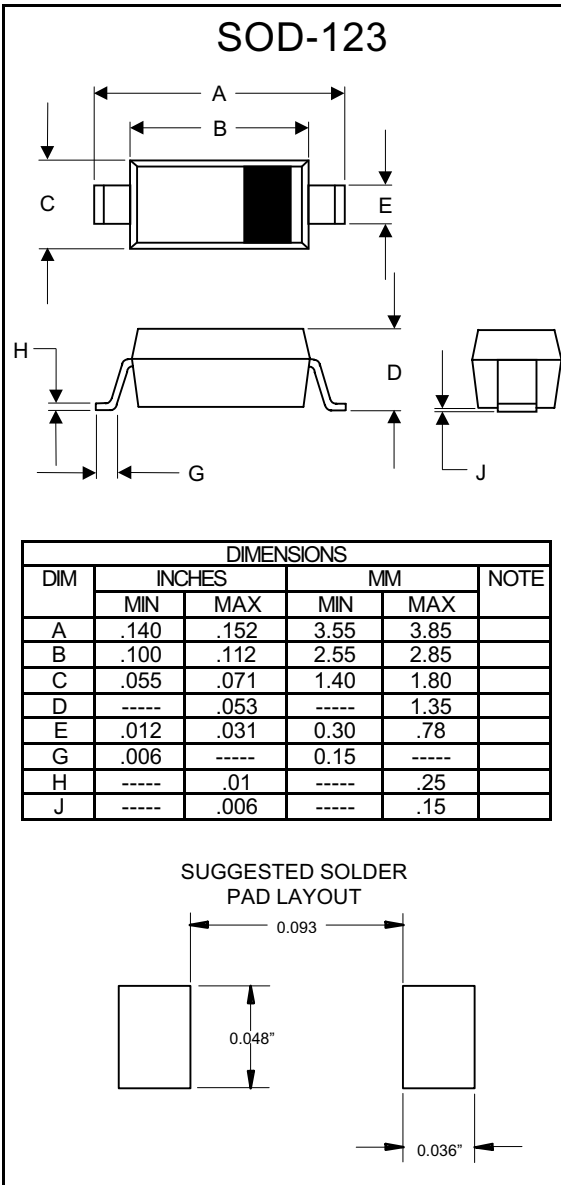
- Halogen free available upon request by adding suffix "-HF"
- Polarity: Cathode indicated by polarity band
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)

**Maximum Ratings**

	Symbol	Value	Units
Max. Steady State Power Dissipation at $T_L < 75^\circ\text{C}$ , Lead Length=3/8"	$P_D$	500	mW
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55 to 150	$^\circ\text{C}$
Thermal Resistance( Junction to Ambient)	$R_{thJA}$	340	K/W

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

	Symbol	Maximum	Unit
Max. Forward Voltage @ $I_F=10\text{mA}$	$V_F$	0.95	V



# MMSZ4678 thru MMSZ4716

**Electrical Characteristics (T<sub>i</sub>= 30°C Unless Otherwise Noted, V<sub>F</sub>=0.95V Max @ I<sub>F</sub>=10mA for all types)**

Device	Zener Voltage			@I <sub>ZT</sub> u A	Leakage Current		Device Marking
	V <sub>Z</sub> (Volts)				I <sub>R</sub> @ V <sub>R</sub>		
	Min	Nom	Max		u A	Volts	
MMSZ4678	1.71	1.8	1.89	50	7.5	1.0	CC
MMSZ4679	1.90	2.0	2.10	50	5.0	1.0	CD
MMSZ4680	2.09	2.2	2.31	50	5.0	1.0	CE
MMSZ4681	2.28	2.40	2.52	50	2.0	1.0	CF
MMSZ4682	2.565	2.7	2.835	50	1.0	1.0	CH
MMSZ4683	2.85	3.0	3.15	50	0.8	1.0	CJ
MMSZ4684	3.135	3.3	3.465	50	7.5	1.5	CK
MMSZ4685	3.42	3.6	3.78	50	7.5	2.0	CM
MMSZ4686	3.705	3.9	4.095	50	5.0	2.0	CN
MMSZ4687	4.085	4.3	4.515	50	4.0	2.0	CP
MMSZ4688	4.465	4.7	4.935	50	10	3.0	CT
MMSZ4689	4.845	5.1	5.355	50	10	3.0	CU
MMSZ4690	5.32	5.6	5.88	50	10	4.0	CV
MMSZ4691	5.89	6.2	6.51	50	10	5.0	CA
MMSZ4692	6.46	6.8	7.14	50	10	5.1	CX
MMSZ4693	7.125	7.5	7.875	50	10	5.7	CY
MMSZ4694	7.79	8.2	8.61	50	10	6.2	CZ
MMSZ4695	8.265	8.7	9.135	50	10	6.6	DC
MMSZ4696	8.645	9.1	9.555	50	10	6.9	DD
MMSZ4697	9.50	10	10.5	50	10	7.6	DE
MMSZ4698	10.45	11	11.55	50	0.05	8.4	DF
MMSZ4699	11.40	12	12.6	50	0.05	9.1	DH
MMSZ4700	12.35	13	13.65	50	0.05	9.8	DJ
MMSZ4701	13.30	14	14.7	50	0.05	10.6	DK
MMSZ4702	14.25	15	15.75	50	0.05	11.4	DM
MMSZ4703	15.20	16	16.8	50	0.05	12.1	DN
MMSZ4704	16.15	17	17.85	50	0.05	12.9	DP
MMSZ4705	17.10	18	18.9	50	0.05	13.6	DT
MMSZ4706	18.05	19	19.95	50	0.05	14.4	DU
MMSZ4707	19.00	20	21	50	0.01	15.2	DV
MMSZ4708	20.9	22	23.1	50	0.01	16.7	DA
MMSZ4709	22.8	24	25.2	50	0.01	18.2	DX
MMSZ4710	23.75	25	26.25	50	0.01	19.0	DY
MMSZ4711	25.65	27	28.35	50	0.01	20.4	EA
MMSZ4712	26.6	28	29.4	50	0.01	21.2	EC
MMSZ4713	28.5	30	31.5	50	0.01	22.8	ED
MMSZ4714	31.35	33	34.65	50	0.01	25.0	EF
MMSZ4715	34.2	36	37.8	50	0.01	27.3	EF
MMSZ4716	37.05	39	40.95	50	0.01	29.6	EH

TYPICAL CHARACTERISTICS



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



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

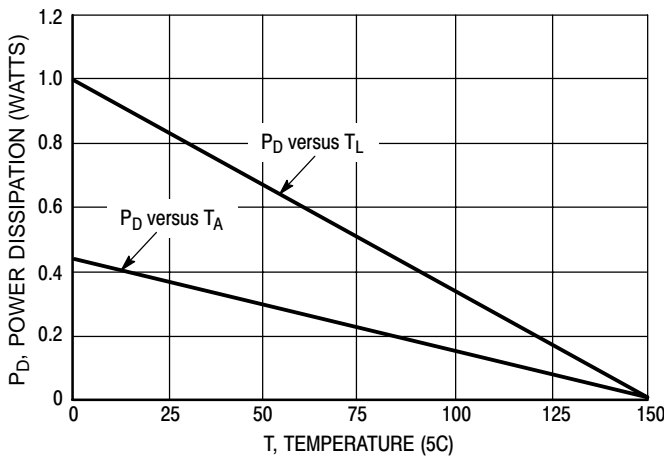


Figure 3. Steady State Power Derating



Figure 4. Maximum Nonrepetitive Surge Power



Figure 5. Effect of Zener Voltage on Zener Impedance

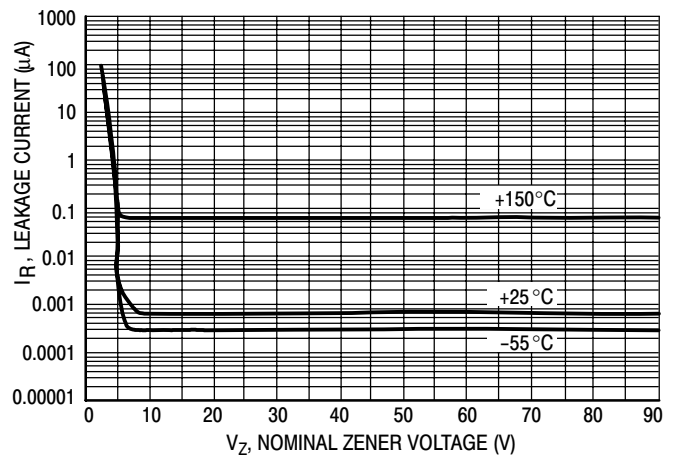


Figure 6. Typical Forward Voltage

**TYPICAL CHARACTERISTICS**



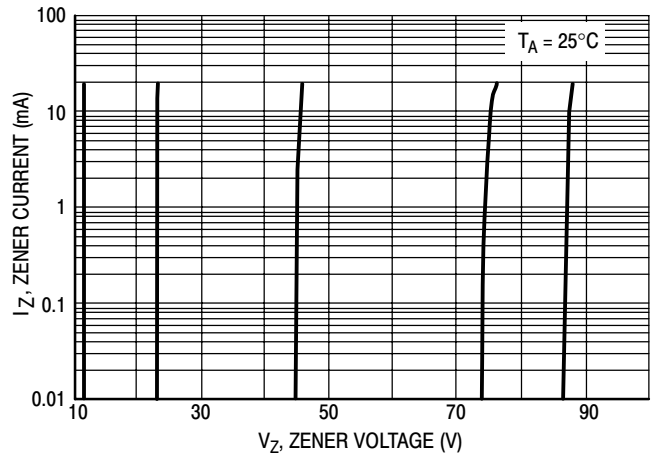
**Figure 7. Typical Capacitance**



**Figure 8. Typical Leakage Current**



**Figure 9. Zener Voltage versus Zener Current (V<sub>Z</sub> Up to 12 V)**



**Figure 10. Zener Voltage versus Zener Current (12 V to 91 V)**



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### Ordering Information :

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

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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