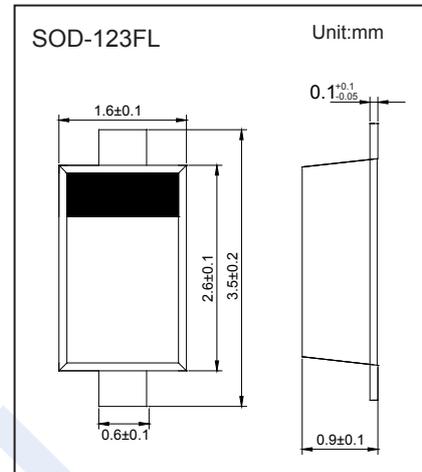
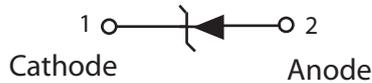


Zener Diodes

MMSZ Series (KMSZ Series)

■ Features

- Wide Zener Voltage Range Selection, 2.0V to 75V
- VZ Tolerance Selection of $\pm 2\%$ (B Series)
- Flat Lead SOD-123FL Plastic Package
- Surface Device Type Mounting
- RoHS Compliant
- Green EMC

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Power Dissipation	P_D	500	mW
Junction Temperature	T_J	150	°C
Operating Temperature Range	T_{OPR}	-65 to 150	
Storage Temperature range	T_{stg}	-65 to 150	

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Device Type	Device Marking	$V_Z @ I_{ZT}$ (Volts)			I_{ZT} (mA)	$Z_{ZT} @ I_{ZT}$ (Ω) Max	I_{ZK} (mA)	$Z_{ZK} @ I_{ZK}$ (Ω) Max	$I_R @ V_R$ (μA) Max	V_R (Volts)
		Min	Nom	Max						
MMSZ2V0B	2V0B	1.95	2.0	2.05	5	100	1	564	120	0.5
MMSZ2V2B	2V2B	2.14	2.2	2.26	5	100	1	564	120	0.7
MMSZ2V4B	2V4B	2.35	2.4	2.45	5	100	1	564	45	1
MMSZ2V7B	2V7B	2.65	2.7	2.75	5	100	1	564	18	1
MMSZ3V0B	3V0B	2.94	3.0	3.06	5	100	1	564	9	1
MMSZ3V3B	3V3B	3.23	3.3	3.37	5	95	1	564	4.5	1
MMSZ3V6B	3V6B	3.53	3.6	3.67	5	90	1	564	4.5	1
MMSZ3V9B	3V9B	3.82	3.9	3.98	5	90	1	564	2.7	1
MMSZ4V3B	4V3B	4.21	4.3	4.39	5	90	1	564	2.7	1
MMSZ4V7B	4V7B	4.61	4.7	4.79	5	80	1	470	2.7	2
MMSZ5V1B	5V1B	5.00	5.1	5.20	5	60	1	451	1.8	2
MMSZ5V6B	5V6B	5.49	5.6	5.71	5	40	1	376	0.9	2
MMSZ6V2B	6V2B	6.08	6.2	6.32	5	10	1	141	2.7	4
MMSZ6V8B	6V8B	6.66	6.8	6.94	5	15	1	75	1.8	4
MMSZ7V5B	7V5B	7.35	7.5	7.65	5	15	1	75	0.9	5
MMSZ8V2B	8V2B	8.04	8.2	8.36	5	15	1	75	0.63	5
MMSZ9V1B	9V1B	8.92	9.1	9.28	5	15	1	94	0.45	6
MMSZ10VB	10VB	9.80	10	10.20	5	20	1	141	0.18	7
MMSZ11VB	11VB	10.78	11	11.22	5	20	1	141	0.09	8
MMSZ12VB	12VB	11.76	12	12.24	5	25	1	141	0.09	8
MMSZ13VB	13VB	12.74	13	13.26	5	30	1	160	0.09	8
MMSZ15VB	15VB	14.70	15	15.30	5	30	1	188	0.045	10.5

Zener Diodes

MMSZ Series (KMSZ Series)

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Device Type	Device Marking	$V_Z @ I_{ZT}$ (Volts)			I_{ZT} (mA)	$Z_{ZT} @ I_{ZT}$ (Ω) Max	I_{ZK} (mA)	$Z_{ZK} @ I_{ZK}$ (Ω) Max	$I_R @ V_R$ (μA) Max	V_R (Volts)
		Min	Nom	Max						
MMSZ16VB	16VB	15.68	16	16.32	5	40	1	188	0.045	11.2
MMSZ18VB	18VB	17.64	18	18.36	5	45	1	212	0.045	12.6
MMSZ20VB	20VB	19.60	20	20.40	5	55	1	212	0.045	14.0
MMSZ22VB	22VB	21.56	22	22.44	5	55	1	235	0.045	15.4
MMSZ24VB	24VB	23.52	24	24.48	5	70	1	235	0.045	16.8
MMSZ27VB	27VB	26.46	27	27.54	2	80	0.5	282	0.045	18.9
MMSZ30VB	30VB	29.40	30	30.60	2	80	0.5	282	0.045	21.0
MMSZ33VB	33VB	32.34	33	33.66	2	80	0.5	306	0.045	23.0
MMSZ36VB	36VB	35.28	36	36.72	2	90	0.5	329	0.045	25.2
MMSZ39VB	39VB	38.22	39	39.78	2	130	0.5	329	0.045	27.3
MMSZ43VB	43VB	42.14	43	43.86	2	150	0.5	353	0.045	30.1
MMSZ47VB	47VB	46.06	47	47.94	2	170	0.5	353	0.045	33.0
MMSZ51VB	51VB	49.98	51	52.02	2	180	0.5	376	0.045	35.7
MMSZ56VB	56VB	54.88	56	57.12	2	200	0.5	400	0.045	39.2
MMSZ62VB	62VB	60.76	62	63.24	2	215	0.5	423	0.045	43.4
MMSZ68VB	68VB	66.64	68	69.36	2	240	0.5	447	0.045	47.6
MMSZ75VB	75VB	73.50	75	76.50	2	255	0.5	470	0.045	52.5

V_F Forward Voltage = 900mV Maximum @ $I_F = 10$ mA for all types

Notes:

1. The Zener Voltage (V_Z) is tested under pulse condition of 10mS.
2. The device numbers listed have a standard tolerance on the nominal zener voltage of $\pm 2\%$.
3. For detailed information on price, availability and delivery of nominal zener voltages between the voltages shown and tighter voltage tolerances, contact your nearest Tak Cheong Electronics representative.
4. 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_{ZT} or I_{ZK}) is superimposed to I_{ZT} or I_{ZK} .

■ Typical Characteristics

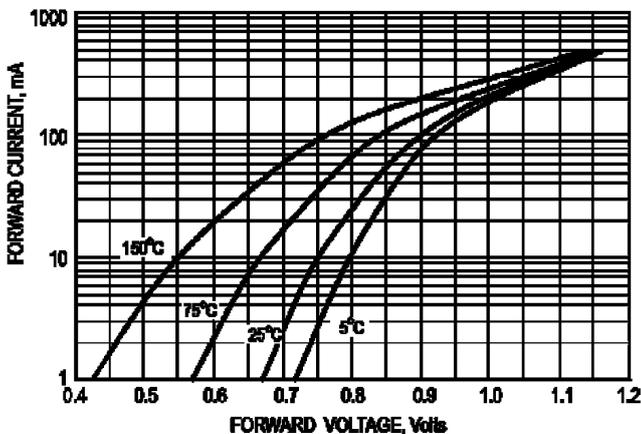


Fig.1 TYPICAL FORWARD VOLTAGE

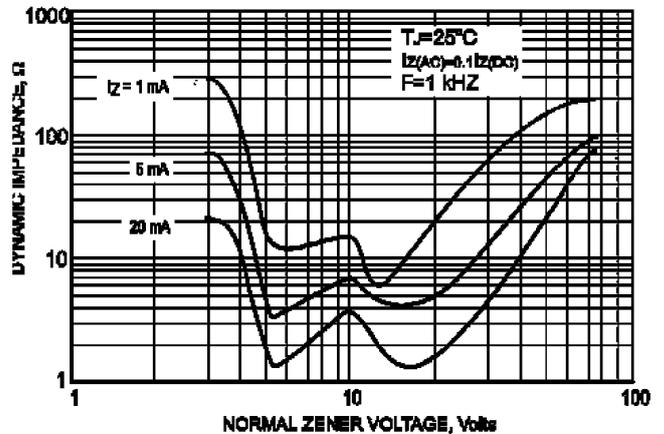


Fig.2 EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE

Zener Diodes

MMSZ Series (KMSZ Series)

■ Typical Characteristics

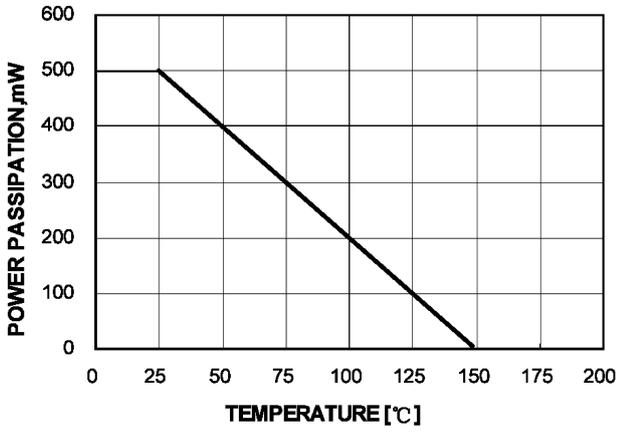


Fig.3 POWER DISSIPATION VS. AMBIENT TEMP.

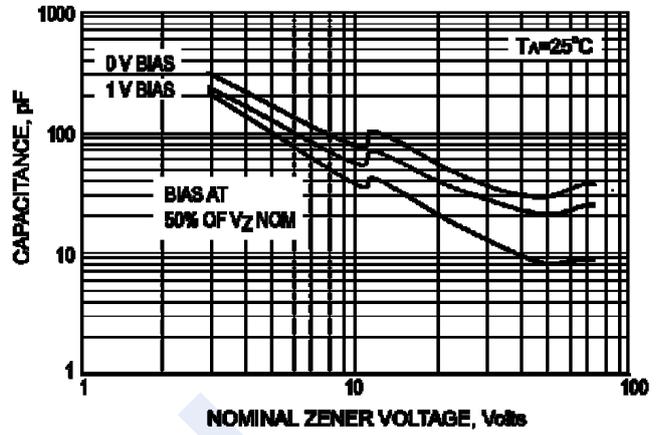


Fig.4 TYPICAL CAPACITANCE

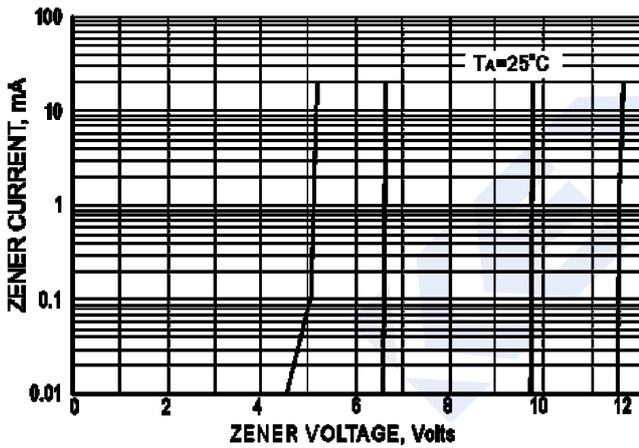


Fig.5 ZENER BREAKDOWN CHARACTERISTICS

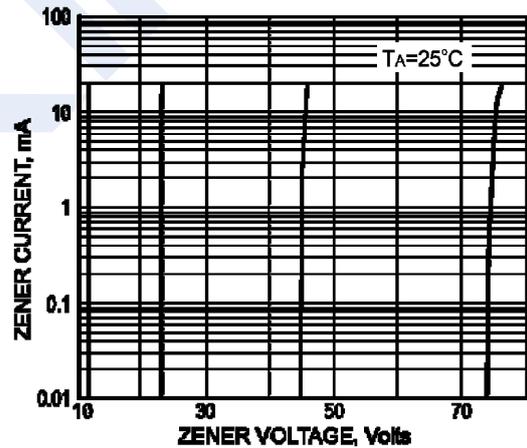


Fig.6 ZENER BREAKDOWN CHARACTERISTICS

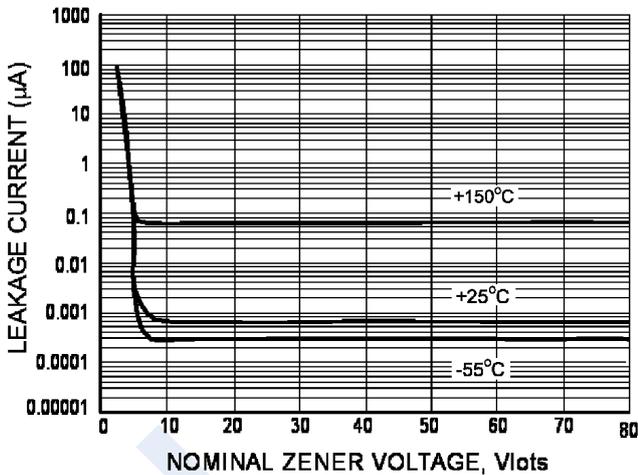


Fig.7 TYPICAL LEAKGE CURRENT