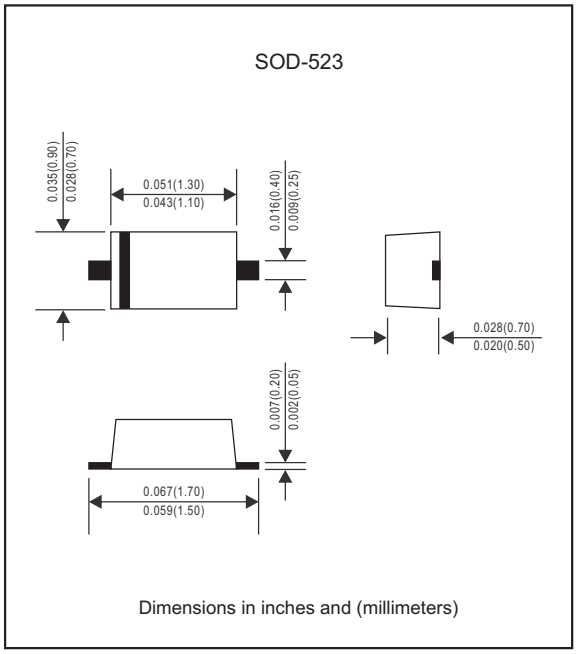
MM5Z2V4C THRU MM5Z75VC

150mW Surface Mount
Zener Diodes-2.4V-75V

Features

- Silicon epitaxial planar chip structure.
- Wide zener reverse voltage range 2.4V to 75V.
- Tiny package size for high density applications.
- Ideally suited for automated assembly processes.
- ESD Rating of Class 3 per human body model
- Lead-free parts meet RoHS requirments.
- Compliant to Halogen-free.

Package outline



Mechanical data

- Epoxy : UL94-V0 rated flame retardant
- Case : Molded plastic, SOD-523
- Terminals :Plated terminals, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Mounting Position : Any

Maximum ratings (at T_A=25°C unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Forward voltage	I_F = 10 mA	V_F			0.9	V
Total device dissipation	on FR-5 Board ,T_A =25°C	P_D			150	mW
Thermal resistance	Junction to ambient Junction to case	$R_{\theta JA}$ $R_{\theta JC}$		625 350		°C/W °C/W
Operating junction temperature range		T_J	-55		+150	°C
Storage temperature range		T_{STG}	-55		+150	°C

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Electrical characteristics (at T_A=25°C unless otherwise noted)

Part No.	Marking code	Zener voltage			Test current	Zener impedance			Leakage current		θVz (mV/k) @I_{ZT}		C_J @VR=0V f=1MHz
		V_Z @ I_{ZT}			I_{ZT}	Z_{ZT} @ I_{ZT}	Z_{ZK} @ I_{ZK}	I_{ZK}	I_R	V_R			
		Min.(V)	Nom.(V)	Max.(V)	mA	(Ω)Max	(Ω)Max	mA	(uA)Max	Volts	Min.	Max.	(pF)Max
MM5Z2V4C	00/Z11	2.2	2.4	2.6	5	100	1000	1.0	50	1.0	-3.5	0	450
MM5Z2V7C	01/Z12	2.5	2.7	2.9	5	100	1000	1.0	20	1.0	-3.5	0	450
MM5Z3V0C	02/Z13	2.8	3.0	3.2	5	100	1000	1.0	10	1.0	-3.5	0	450
MM5Z3V3C	05/Z14	3.1	3.3	3.5	5	95	1000	1.0	5	1.0	-3.5	0	450
MM5Z3V6C	06/Z15	3.4	3.6	3.8	5	90	1000	1.0	5	1.0	-3.5	0	450
MM5Z3V9C	07/Z16	3.7	3.9	4.1	5	90	1000	1.0	3	1.0	-3.5	-2.5	450
MM5Z4V3C	08/Z17	4.0	4.3	4.6	5	90	1000	1.0	3	1.0	-3.5	0	450
MM5Z4V7C	09/Z1	4.4	4.7	5.0	5	80	800	1.0	3	2.0	-3.5	0.2	260
MM5Z5V1C	0A/Z2	4.8	5.1	5.4	5	60	500	1.0	2	2.0	-2.7	1.2	225
MM5Z5V6C	0C/Z3	5.2	5.6	6.0	5	40	200	1.0	1	2.0	-2.0	2.5	200
MM5Z6V2C	0E/Z4	5.8	6.2	6.6	5	10	100	1.0	3	4.0	0.4	3.7	185
MM5Z6V8C	0F/Z5	6.4	6.8	7.2	5	15	160	1.0	2	4.0	1.2	4.5	155
MM5Z7V5C	0G/Z6	7.0	7.5	7.9	5	15	160	1.0	1	5.0	2.5	5.3	140
MM5Z8V2C	0H/Z7	7.7	8.2	8.7	5	15	160	1.0	0.7	5.0	3.2	6.2	135
MM5Z9V1C	0K/Z8	8.5	9.1	9.6	5	15	160	1.0	0.2	7.0	3.8	7.0	130
MM5Z10VC	0L/Z9	9.4	10	10.6	5	20	160	1.0	0.1	8.0	4.5	8.0	130
MM5Z11VC	0M/Y1	10.4	11	11.6	5	20	160	1.0	0.1	8.0	5.4	9.0	130
MM5Z12VC	0N/Y2	11.4	12	12.7	5	25	80	1.0	0.1	8.0	6.0	10	130
MM5Z13VC	0P/Y3	12.4	13	14.1	5	30	80	1.0	0.1	8.0	7.0	11	120
MM5Z15VC	0T/Y4	14.3	15	15.8	5	30	80	1.0	0.05	10.5	9.2	13	110
MM5Z16VC	0U/Y5	15.3	16	17.1	5	40	80	1.0	0.05	11.2	10.4	14	105
MM5Z18VC	0W/Y6	16.8	18	19.1	5	45	80	1.0	0.05	12.6	12.4	16	100
MM5Z20VC	0Z/Y7	18.8	20	21.2	5	55	100	1.0	0.05	14.0	14.4	18	85
MM5Z22VC	10/Y8	20.8	22	23.3	5	55	100	1.0	0.05	15.4	16.4	20	85
MM5Z24VC	11/Y9	22.8	24	25.6	5	70	120	1.0	0.05	16.8	18.4	22	80
MM5Z27VC	12/Y10	25.1	27	28.9	2	80	300	1.0	0.05	18.9	21.4	25.3	70
MM5Z30VC	14/Y11	28.0	30	32.0	2	80	300	1.0	0.05	21.0	24.4	29.4	70
MM5Z33VC	18/Y12	31.0	33	35.0	2	80	300	1.0	0.05	23.2	27.4	33.4	70
MM5Z36VC	19/Y13	34.0	36	38.0	2	90	500	1.0	0.05	25.2	30.4	37.4	70
MM5Z39VC	20/Y14	37.0	39	41.0	2	130	500	1.0	0.05	27.3	33.4	41.2	45
MM5Z43VC	21/Y15	40.0	43	46.0	2	150	500	1.0	0.05	30.1	37.6	46.6	40
MM5Z47VC	1A/V1	44.0	47	50.0	2	170	500	1.0	0.05	32.9	42.0	51.8	40
MM5Z51VC	1C/V2	48.0	51	54.0	2	180	500	1.0	0.05	35.7	46.6	57.2	40
MM5Z56VC	1D/V3	52.0	56	60.0	2	200	500	1.0	0.05	39.2	52.2	63.8	40
MM5Z62VC	1E/V4	58.0	62	66.0	2	215	500	1.0	0.05	43.4	58.8	71.6	35
MM5Z68VC	1F/V5	64.0	68	72.0	2	240	500	1.0	0.05	47.6	65.6	79.8	35
MM5Z75VC	1G/V6	70.0	75	79.0	2	255	500	1.0	0.05	52.5	73.4	88.6	35

Note : 5% tolerance of Zener voltage

Rating and characteristic curves (MM5Z2V4C thru MM5Z75VC)

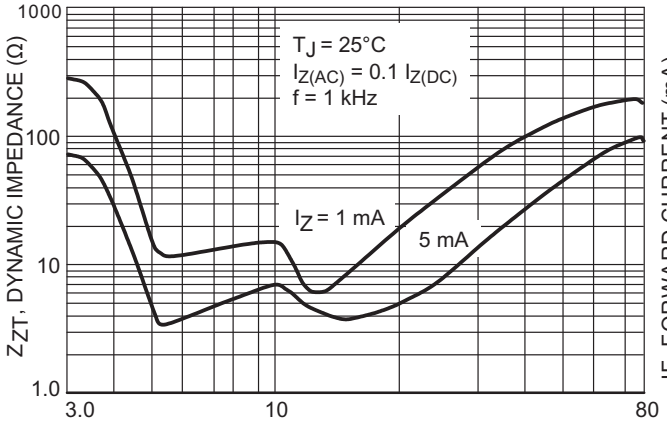


Figure 1. Effect of Zener Voltage on Zener Impedance

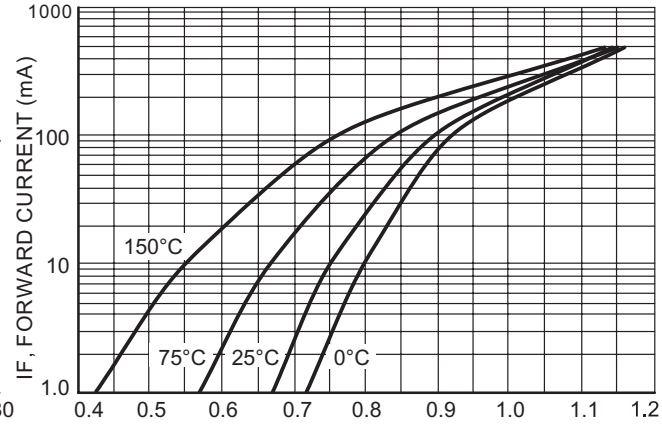


Figure 2. Typical Forward Voltage

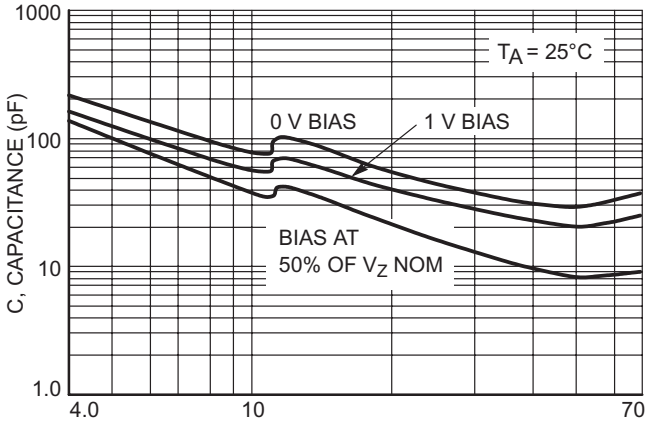


Figure 3. Typical Capacitance

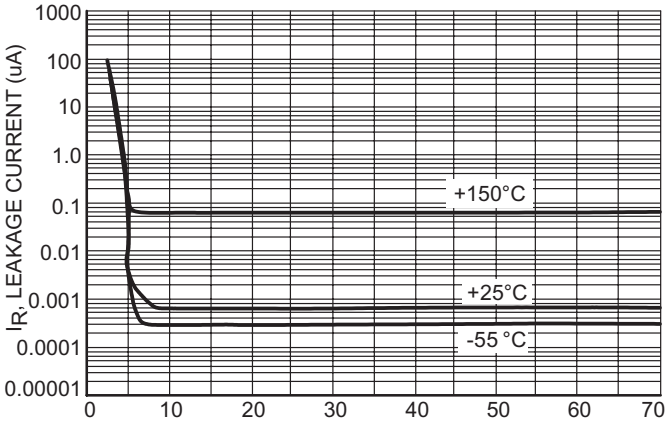


Figure 4. Typical Leakage Current

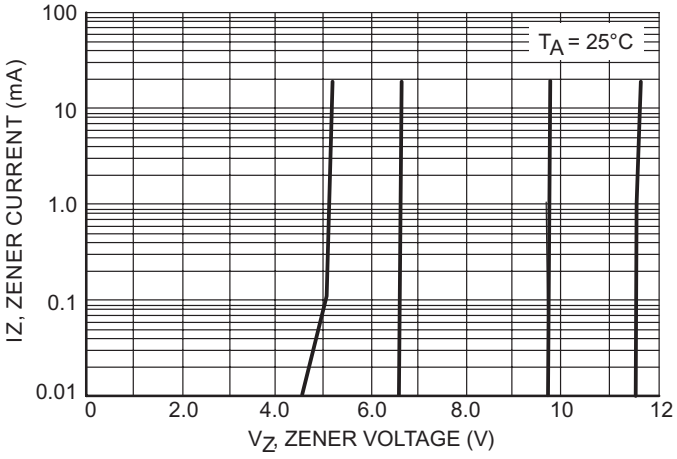


Figure 5. Zener Voltage versus Zener Current (V_Z Up to 12 V)

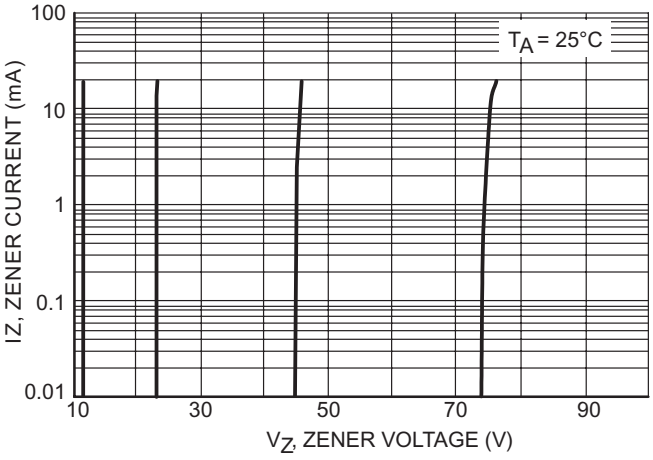


Figure 6. Zener Voltage versus Zener Current (12 V to 75 V)

Rating and characteristic curves (MM5Z2V4C thru MM5Z75VC)

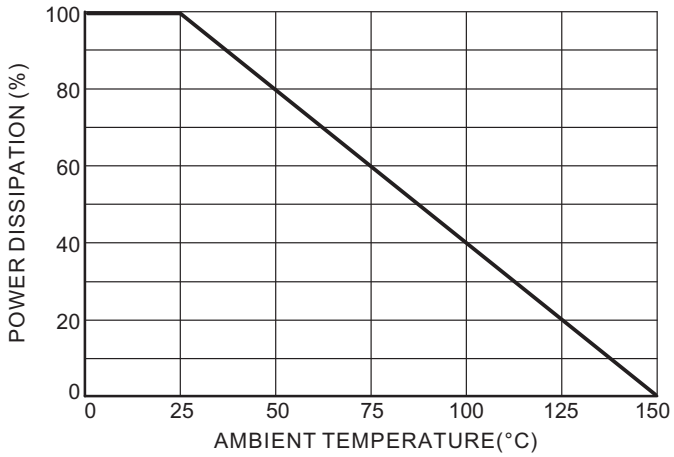


Figure 7. Steady State Power Derating

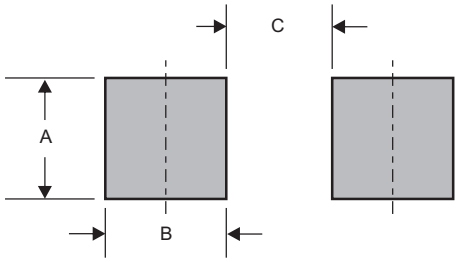
Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

Month code

Type number	Marking
MM5Z Series	Page2

Suggested solder pad layout



Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SOD-523	0.032 (0.80)	0.024 (0.60)	0.044 (1.10)