

**ZENER VOLTAGE REGULATOR DIODES**

**MMSZ4V7 - 56V**



**SOD-123  
PLASTIC PACKAGE**

**For High Density Applications**

**Polarity: - Cathode indicated by polarity band**

**ABSOLUTE MAXIMUM RATINGS**

DESCRIPTION	SYMBOL	VALUE	UNIT
Power Dissipation on FR-5 Board at $T_L=75^\circ\text{C}$ (Note 1) Derated Above $75^\circ\text{C}$	$P_D$	500	mW
		6.7	mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient (Note 2)	$R_{th(j-a)}$	340	$^\circ\text{C/W}$
Thermal Resistance, Junction to Lead (Note 2)	$R_{th(j-l)}$	150	$^\circ\text{C/W}$
Operating and Storage Junction Temperature Range	$T_j, T_{stg}$	- 55 to +150	$^\circ\text{C}$

Note1. FR-5=3.5 x 1.5 inches

Note2. Thermal Resistance measured obtained via infrared Scan Method

Forward Voltage at  $I_F=10\text{mA}$  <0.9V and <1.5V at 200mA

**ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$  unless specified otherwise)**

Device	$V_{Z1}$ (V) Notes 3 and 4 at $I_{ZT1}=5\text{mA}$			$Z_{ZT1}$ (Note5)	$V_{Z2}$ (V) Notes 3 and 4 at $I_{ZT2}=1\text{mA}$		$Z_{ZT2}$ (Note 5)	Max Reverse Current		Marking
	min	nom	max	(W) at $I_{ZT1}=5\text{mA}$ max	min	max	(W) at $I_{ZT2}=1\text{mA}$ max	$I_R$ at mA Max	$V_R$ (V)	
MMSZ4V7	4.47	4.7	4.94	80	3.7	4.7	500	3.0	2.0	U3
MMSZ5V1	4.85	5.1	5.36	60	4.2	5.3	480	2.0	2.0	U4
MMSZ5V6	5.32	5.6	5.88	40	4.8	6.0	400	1.0	2.0	U5
MMSZ6V2	5.89	6.2	6.51	10	5.6	6.6	150	3.0	4.0	V1
MMSZ6V8	6.46	6.8	7.14	15	6.3	7.2	80	2.0	4.0	V2
MMSZ7V5	7.13	7.5	7.88	15	6.9	7.9	80	1.0	5.0	V3
MMSZ8V2	7.79	8.2	8.61	15	7.6	8.7	80	0.7	5.0	V4
MMSZ9V1	8.65	9.1	9.56	15	8.4	9.6	100	0.5	6.0	V5
MMSZ10	9.50	10	10.50	20	9.3	10.6	150	0.2	7.0	A1

Note3. Tolerance of +/- 5% on the nominal Zener Voltage

Note4. Tolerance and Voltage Designation: Zener Voltage ( $V_Z$ ) is measured with the Zener Current Applied for  $PW=1\text{ms}$

Note5.  $Z_{ZT}$  and  $Z_{ZK}$  are measured by dividing the AC Voltage drop across the device by the AC Current Applied

The specified limits are for  $I_{Z(AC)}=0.1 I_{Z(DC)}$  with the AC frequency =1KHz

MMSZ4V7\_56Rev\_1 050506E



Forward Voltage at  $I_F=10\text{mA}$  <0.9V and <1.5V at 200mA

ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$  unless specified otherwise)

Device	$V_{Z1}$ (V) Notes 3 and 4 at $I_{ZT1}=5\text{mA}$			$Z_{ZT1}$ (Note5) (W) at $I_{ZT1}=5\text{mA}$	$V_{Z2}$ (V) Notes 3 and 4 at $I_{ZT2}=1\text{mA}$		$Z_{ZT2}$ (Note 5) (W) at $I_{ZT2}=1\text{mA}$	Max Reverse Current		Marking
	min	nom	max		min	max		max	$I_R$ at mA	
MMSZ11	10.45	11	11.55	20	10.2	11.6	150	0.1	8.0	A2
MMSZ12	11.40	12	12.60	25	11.2	12.7	150	0.1	8.0	A3
MMSZ13	12.35	13	13.65	30	12.3	14.0	170	0.1	8.0	A4
MMSZ15	14.25	15	15.75	30	13.7	15.5	200	0.05	10.5	A5
MMSZ16	15.20	16	16.80	40	15.2	17.0	200	0.05	11.2	X1
MMSZ18	17.10	18	18.90	45	16.7	19.0	225	0.05	12.6	X2
MMSZ20	19.00	20	21.00	55	18.7	21.1	225	0.05	14	X3
MMSZ22	20.90	22	23.10	55	20.7	23.2	250	0.05	15.4	X4
MMSZ24	22.80	24	25.20	70	22.7	25.5	250	0.05	16.8	X5

ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$  unless specified otherwise)

Device	$V_{Z1}$ (V) Notes 3 and 4 at $I_{ZT1}=2\text{mA}$			$Z_{ZT1}$ (Note 5) (W) at $I_{ZT1}=2\text{mA}$	$V_{Z2}$ (V) Notes 3 and 4 at $I_{ZT2}=0.1\text{mA}$		$Z_{ZT2}$ (Note 5) (W) at $I_{ZT2}=0.5\text{mA}$	Max Reverse Current		Marking
	min	nom	max		min	max		max	$I_R$ at mA	
MMSZ27	25.65	27	28.35	80	25.0	28.9	300	0.05	18.9	Y1
MMSZ30	28.50	30	31.50	80	27.8	32.0	300	0.05	21.0	Y2
MMSZ33	31.35	33	34.65	80	30.8	35.0	325	0.05	23.1	Y3
MMSZ36	34.20	36	37.80	90	33.8	38.0	350	0.05	25.2	Y4
MMSZ39	37.05	39	40.95	130	36.7	41.0	350	0.05	27.3	Y5
MMSZ43	40.85	43	45.15	150	39.7	46.0	375	0.05	30.1	Z1
MMSZ47	44.65	47	49.35	170	43.7	50.0	375	0.05	32.9	Z2
MMSZ51	48.45	51	53.55	180	47.6	54.0	400	0.05	35.7	Z3
MMSZ56	53.20	56	58.80	200	51.5	60.0	425	0.05	39.2	Z4

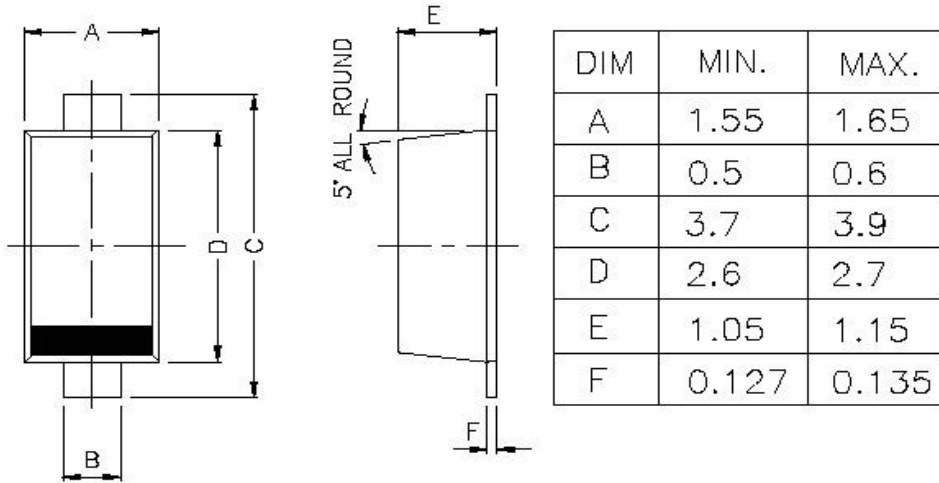
Note3. Tolerance of +/- 5% on the nominal Zener Voltage

Note4. Tolerance and Voltage Designation: Zener Voltage ( $V_Z$ ) is measured with the Zener Current Applied for  $PW=1\text{ms}$

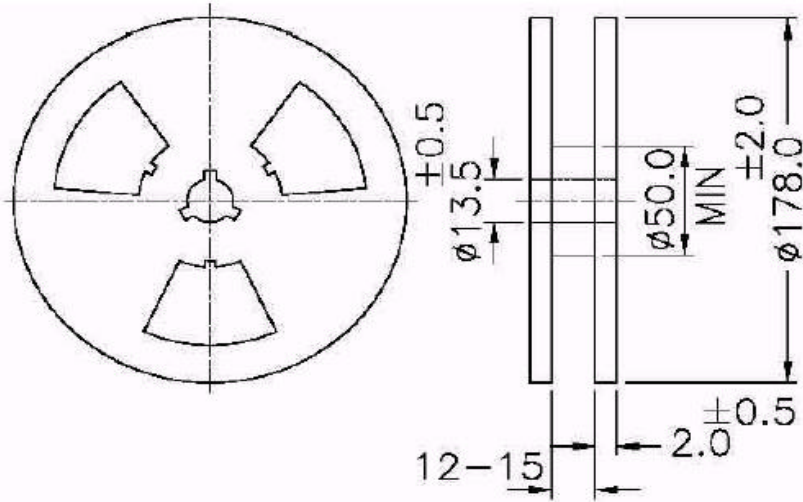
Note5.  $Z_{ZT}$  and  $Z_{ZK}$  are measured by dividing the AC Voltage drop across the device by the AC Current Applied

The specified limits are for  $I_{Z(AC)}=0.1 I_{Z(DC)}$  with the AC frequency =1KHz

PACKAGE SOD-123 FL



All dimensions are in mm  
CATHODE IS MARKED BY BAND



ALL DIMENSIONS ARE IN mm  
REEL  $\phi$  178 mm (7")  
3000 Pcs / REEL

### Component Disposal Instructions

1. CDIL Semiconductor Devices are RoHS compliant, customers are requested to please dispose as per prevailing Environmental Legislation of their Country.
2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

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