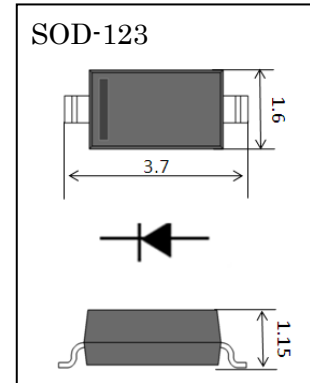


**Zener Diodes / DATA SHEET**
**MMSZ5221C–MMSZ5259C Series**

- ◇ Constant Voltage control
- ◇ Wide Voltage Range Selection 2.4V to 59V
- ◇ RoHS compliant / Green EMC
- ◇ Matte Tin (Sn) Lead finish
- ◇ Cathode Band / Device marking  
Refer to table list


**Absolute Maximum Ratings (Ta = 25 °C)**

Symbol	Parameter	Value	Units
$P_D$	Power Dissipation	350	mW
$T_J$	Junction Temperature	150	°C
$T_{STG}$	Storage Temperature	-55 to +125	°C
$I_{ZM}$	Maximum Regulator Current	$P_D/V_Z$	mA

**Electrical Characteristics (Ta = 25 °C)**

Type Number	Device Marking	$V_Z$ (V) @ $I_{ZT}$ *1			$I_{ZT}$ mA	$Z_{ZT}$ @ $I_{ZT}$ $\Omega$	$Z_{ZK}$ @ $I_{ZK}$ $\Omega$	$I_{zk}$ (mA)	$I_R$ ( $\mu$ A)	$V_R$ (V)
		Nom(V)	Min(V)	Max(V)						
MMSZ5221C	2C1	2.4	2.35	2.45	20	30	1200	0.25	100	1.0
MMSZ5223C	2C3	2.7	2.65	2.75	20	30	1300	0.25	75	1.0
MMSZ5225C	2C5	3.0	2.94	3.06	20	30	1600	0.25	50	1.0
MMSZ5226C	2G1	3.3	3.23	3.37	20	28	1600	0.25	25	1.0
MMSZ5227C	2G2	3.6	3.53	3.67	20	24	1700	0.25	15	1.0
MMSZ5228C	2G3	3.9	3.82	3.98	20	23	1900	0.25	10	1.0
MMSZ5229C	2G4	4.3	4.21	4.39	20	22	2000	0.25	5	1.0
MMSZ5230C	2G5	4.7	4.61	4.79	20	19	1900	0.25	5	2.0
MMSZ5231C	2E1	5.1	5.00	5.20	20	17	1600	0.25	5	2.0
MMSZ5232C	2E2	5.6	5.49	5.71	20	11	1600	0.25	5	3.0
MMSZ5233C	2E3	6.0	5.88	6.12	20	7	1600	0.25	5	3.5

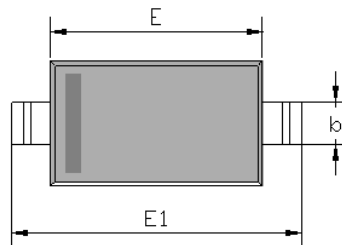
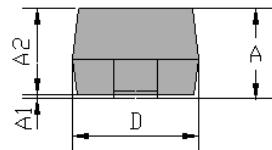
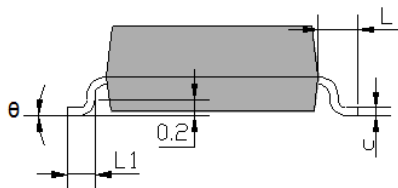
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Type Number	Device Marking	V <sub>z</sub> (V) @I <sub>ZT</sub> <sup>*1</sup>			I <sub>ZT</sub> mA	Z <sub>ZT</sub> @I <sub>ZT</sub> Ω	Z <sub>ZK</sub> @I <sub>ZK</sub> Ω	I <sub>zk</sub> (mA)	I <sub>R</sub> (μA)	V <sub>R</sub> (V)
		Nom(V)	Min(V)	Max(V)						
MMSZ5234C	2E4	6.2	6.08	6.32	20	7	1000	0.25	5	4.0
MMSZ5235C	2E5	6.8	6.66	6.94	20	5	750	0.25	3	5.0
MMSZ5236C	2F1	7.5	7.35	7.65	20	6	500	0.25	3	6.0
MMSZ5237C	2F2	8.2	8.04	8.36	20	8	500	0.25	3	6.5
MMSZ5238C	2F3	8.7	8.53	8.87	20	8	600	0.25	3	6.5
MMSZ5239C	2F4	9.1	8.92	9.28	20	10	600	0.25	3	7.0
MMSZ5240C	2F5	10	9.80	10.20	20	17	600	0.25	3	8.0
MMSZ5241C	2H1	11	10.78	11.22	20	22	600	0.25	2.0	8.4
MMSZ5242C	2H2	12	11.76	12.24	20	30	600	0.25	1.0	9.1
MMSZ5243C	2H3	13	12.74	13.26	9.5	13	600	0.25	0.5	9.9
MMSZ5244C	2H4	14	13.72	14.28	9.0	15	600	0.25	0.1	10
MMSZ5245C	2H5	15	14.70	15.30	8.5	16	600	0.25	0.1	11
MMSZ5246C	2J1	16	15.68	16.32	7.8	17	600	0.25	0.1	12
MMSZ5248C	2J3	18	17.64	18.36	7.0	21	600	0.25	0.1	14
MMSZ5250C	2J5	20	19.60	20.40	6.2	25	600	0.25	0.1	15
MMSZ5251C	2K1	22	21.56	22.44	5.6	29	600	0.25	0.1	17
MMSZ5252C	2K2	24	23.52	24.48	5.2	33	600	0.25	0.1	18
MMSZ5253C	2K3	25	24.50	25.50	5.0	35	600	0.25	0.1	19
MMSZ5254C	2K4	27	26.46	27.54	5.0	41	600	0.25	0.1	21
MMSZ5255C	2K5	28	27.44	28.56	4.5	44	600	0.25	0.1	21
MMSZ5256C	2M1	30	29.40	30.60	4.2	49	600	0.25	0.1	23
MMSZ5257C	2M2	33	32.34	33.66	3.8	58	700	0.25	0.1	25
MMSZ5258C	2M3	36	35.28	36.72	3.4	70	700	0.25	0.1	27
MMSZ5259C	2M4	39	38.22	39.78	3.2	80	800	0.25	0.1	30

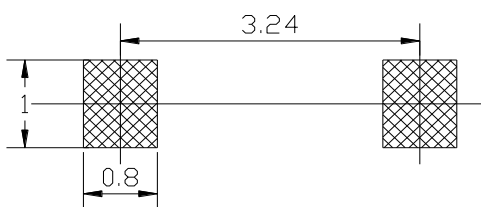
\*1 Pulse width = 10 ms

**Ordering Information**

Device	Package	Shipping	Tape wide	Emboss pitch	Tape specification	Notes
MMSZ Series	SOD123	Tape & Reel 3000pcs /7" Reel	8 mm	4 mm	Conductive	

**Package Dimensions**
**Package outline : SOD-123**


Unit	A	A1	A2	b	c	D	E	E1	L	L1	$\theta$
Max.	1.25	0.10	1.15	0.65	0.15	1.70	2.80	3.85	0.500	0.45	8°
Min.	1.05	0.00	1.05	0.45	0.08	1.50	2.60	3.55	REF.	0.25	0°

**SOD123 Package Outline**

**Land Pattern Recommendation**
**Note:**

1. Halogen free, EMC
2. Pb free solder
3. Lead thickness includes solder plating
4. Lead frame: A42
5. Other Tolerance:  $\pm 0.05$
6. Dimensions are exclusive of Burrs, Mold Flash and Tie Bar extrusions
7. Unit: mm

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