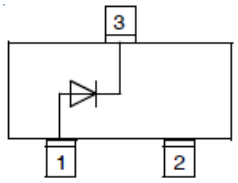
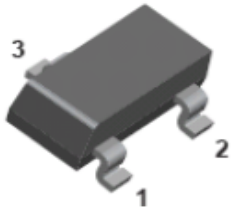
Zener Diodes





SOT-23

Features

- Moisture sensitivity level 1
- Zener voltage 5.1V~36V

Application

- Linear voltage regulator
- DC regulator
- Small-signal surge protection

Mechanical data

- **Package**: SOT-23
- **Terminals**: Tin plated leads, solderable per J-STD-002 and JESD22-B102

■ **Maximum Ratings** (T_a=25℃ Unless otherwise specified)

Parameter	Symbol	Unit	Value
Forward voltage @ I_F=10mA	V_F	V	0.9
Power dissipation	P_D	mW	350
Maximum regulator current	I_{ZM}	mA	P_D/ V_Z
Junction temperature	T_J	℃	-55 to +150
Storage temperature	T_{STG}	℃	-55 to +150

■ Electrical Characteristics (Ta=25℃ Unless otherwise specified)

Type number	Device marking	V_Z @ I_{ZT} (V)			Z_{ZT}(Ω)		Z_{ZK}(Ω)		I_R(μA) @V_R	
		Min.	Typ.	Max.	I_{zt}(ma)	Max.	I_{zk}(ma)	Max.	Max	V_R(V)
MMBZ5231C	2KE1	5.0	5.1	5.2	20	17	0.25	1600	5	2.0
MMBZ5232C	2KE2	5.49	5.6	5.71	20	11	0.25	1600	5	3.0
MMBZ5234C	2KE4	6.08	6.2	6.32	20	7	0.25	1000	5	4.0
MMBZ5235C	2KE5	6.66	6.8	6.94	20	5	0.25	750	3	5.0
MMBZ5236C	2KF1	7.35	7.5	7.65	20	6	0.25	500	3	6.0
MMBZ5237C	2KF2	8.04	8.2	8.36	20	8	0.25	500	3	6.0
MMBZ5239C	2KF4	8.92	9.1	9.28	20	10	0.25	600	3	6.5
MMBZ5240C	2KF5	9.8	10	10.2	20	17	0.25	600	3	8.0
MMBZ5241C	2KH1	10.78	11	11.22	20	22	0.25	600	3	8.4
MMBZ5242C	2KH2	11.76	12	12.24	20	30	0.25	600	2	9.1
MMBZ5243C	2KH3	12.74	13	13.26	9.5	13	0.25	600	1	9.9
MMBZ5244C	2KH4	13.7	14	14.3	9	15	0.25	600	0.5	10.5
MMBZ5245C	2KH5	14.7	15	15.3	8.5	16	0.25	600	0.5	11.0
MMBZ5246C	2KJ1	15.68	16	16.3	7.8	17	0.25	600	0.1	12.0
MMBZ5248C	2KJ3	17.64	18	18.36	7	21	0.25	600	0.1	14.0
MMBZ5250C	2KJ5	19.6	20	20.4	6.2	25	0.25	600	0.1	15.0
MMBZ5251C	2KK1	21.56	22	22.44	5.6	29	0.25	600	0.1	17.0
MMBZ5252C	2KK2	23.52	24	24.48	5.2	33	0.25	600	0.1	18.0
MMBZ5254C	2KK4	26.46	27	27.54	4.6	41	0.25	600	0.1	21.0
MMBZ5256C	2KM1	29.4	30	30.6	4.2	49	0.25	600	0.1	23.0
MMBZ5257C	2KM2	32.34	33	33.66	3.8	58	0.25	700	0.1	25.0
MMBZ5258C	2KM3	35.28	36	36.72	3.4	70	0.25	700	0.1	27.0

■ Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	RθJ-A(1)	℃/W	357
Thermal resistance, junction-to-case	RθJ-C(1)	℃/W	286

Note:

（1）Device mounted on PCB, single-sided copper，with standard footprint

Fig 1：P_D-Ta Curve

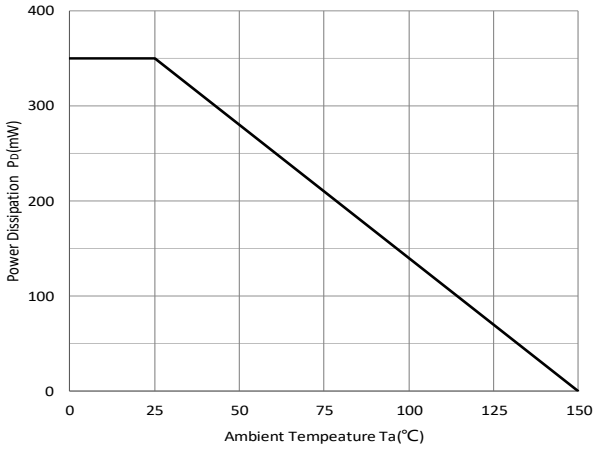


Fig 2：Zener Breakdown Characteristics

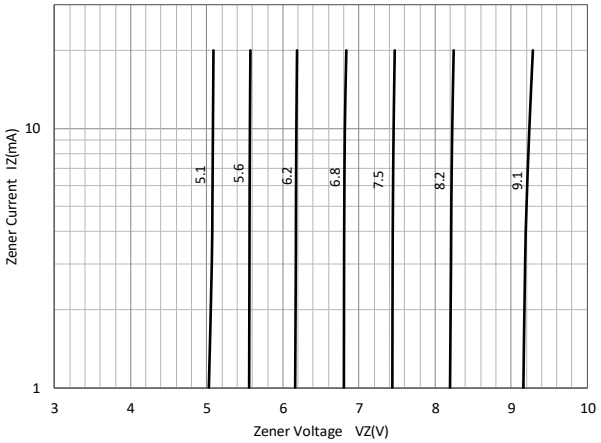


Fig 3：Zener Breakdown Characteristics

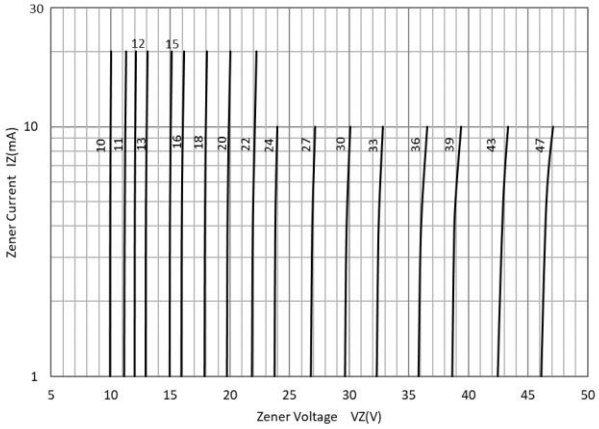


Fig 4：Typical Temperature Coeffient

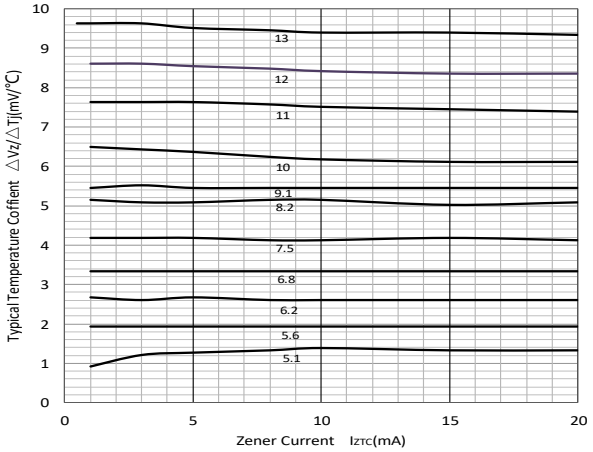


Fig 5：Typical Temperature Coeffient

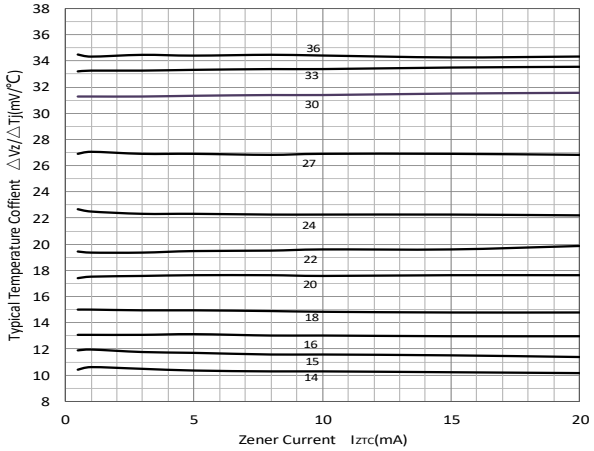
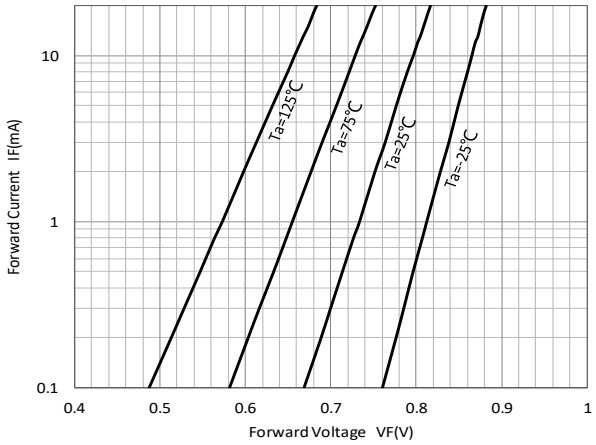


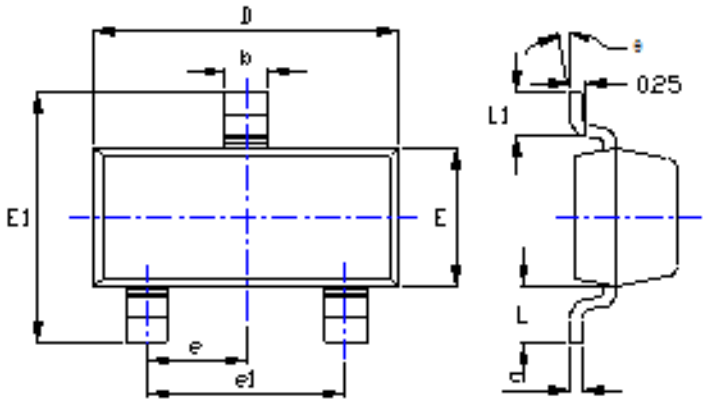
Fig 6：Typical Forward Voltage



■Ordering Information

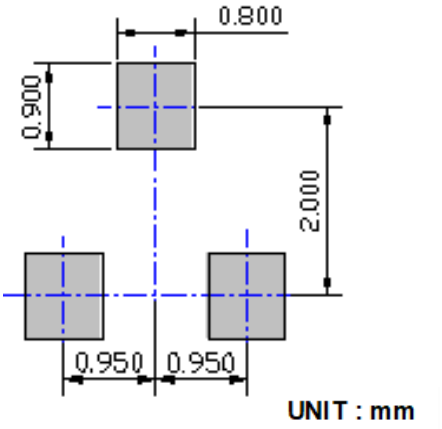
Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
MMBZ5231C THRU MMBZ5258C	F2	Approximate 0.008	3000	30000	120000	7” reel
MMBZ5231C THRU MMBZ5258C	F4	Approximate 0.008	10000	/	210000	13” reel

■ Outline Dimensions



DIMENSIONS				
SYMBOL	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.035	0.045	0.900	1.150
A1	0.000	0.004	0.000	0.100
A2	0.035	0.041	0.900	1.050
b	0.012	0.020	0.300	0.500
c	0.004	0.008	0.100	0.200
D	0.110	0.118	2.800	3.000
E	0.047	0.055	1.200	1.400
E1	0.089	0.100	2.250	2.550
e	0.037TYP		0.950TYP	
e1	0.071	0.079	1.800	2.000
L	0.022REF		0.550REF	
L1	0.012	0.020	0.300	0.500
θ	0°	8°	0°	8°

■ Suggested Pad Layout



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