

MAZ2000 Series (MA2000 Series)

Silicon planar type

For stabilization of power supply

■ Features

- High reliability, achieved by the combination the planar type and the glass seal
- Large power dissipation: $P_D = 1\text{ W}$
- Wide voltage range: $V_Z = 5.1\text{ V}$ to 56 V
- Easy-to-use because of the finely divided zener voltage ranks, such as A and B ranks

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

Parameter	Symbol	Rating	Unit
Repetitive peak forward current	I_{FRM}	400	mA
Total power dissipation*1	P_{tot}	1	W
Non-repetitive reverse surge power dissipation*2	P_{ZSM}	75	W
Junction temperature	T_j	200	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +200	$^\circ\text{C}$

Note) *1 : With a printed-circuit board

*2 : $t = 100\ \mu\text{s}$, $T_j = 150^\circ\text{C}$

■ Common Electrical Characteristics $T_a = 25^\circ\text{C}$ *1

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Forward voltage	V_F	$I_F = 200\text{ mA}$			1	V
Zener voltage*2	V_Z	I_Z Specified value				V
Operating resistance	R_Z	I_Z Specified value				Ω
Reverse current	I_R	V_R Specified value				μA
Temperature coefficient of zener voltage*3	S_Z	I_Z Specified value				$\text{mV}/^\circ\text{C}$
Terminal capacitance	C_t	V_R Specified value				pF

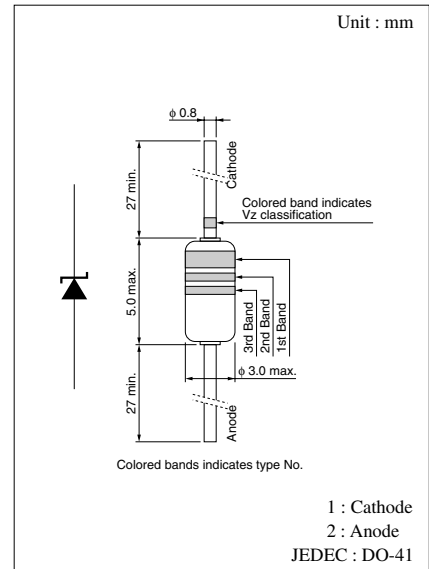
Refer to the list of the electrical characteristics within part numbers

Note) 1. Rated input/output frequency: 5 MHz

2. *1 : The V_Z value is for the temperature of 25°C . In other cases, carry out the temperature compensation.

*2 : Guaranteed at 20 ms after power application.

*3 : $T_j = 25^\circ\text{C}$ to 150°C



•Color indication of V_Z rank classification

A rank	B rank
Blue	Red

Note) The part number in the parenthesis shows conventional part number.

■ Electrical characteristics within part numbers $T_a = 25^\circ\text{C}$

Part Number	Zener voltage			Reverse current		Operating resistance		Temperature coefficient of zener voltage		Terminal capacitance	Marking Color indication			
	V_Z (V)			I_R (μA)		R_Z (Ω)		S_Z (mV/ $^\circ\text{C}$)		C_t (pF) ($V_R = 0$ V) $f = 1$ MHz				
	I_Z (mA)	Min	Nom	Max	V_R (V)	Max	I_Z (mA)	Max	I_Z (mA)	Typ	Typ	1st.	2nd.	3rd.
MAZ2051	40	4.8	5.1	5.4	1	20	40	10	40	0	200	Green	Brown	Brown
MAZ2051-A		4.8		5.15										
MAZ2051-B		5.05		5.4										
MAZ2056	40	5.2	5.6	6.0	2	20	40	8	40	1.5	180	Green	Blue	Blue
MAZ2056-A		5.3		5.7										
MAZ2056-B		5.6		6.0										
MAZ2062	40	5.8	6.2	6.6	3	20	40	6	40	2.4	330	Blue	Red	Red
MAZ2062-A		5.8		6.2										
MAZ2062-B		6.1		6.5										
MAZ2068	40	6.4	6.8	7.2	3	10	40	6	40	3.1	280	Blue	Gray	Gray
MAZ2068-A		6.4		6.8										
MAZ2068-B		6.7		7.1										
MAZ2075	40	7.0	7.5	7.9	3	10	40	5	40	3.8	250	Purple	Green	Green
MAZ2075-A		7.0		7.45										
MAZ2075-B		7.35		7.8										
MAZ2082	40	7.7	8.2	8.7	4	10	40	5	40	4.5	230	Gray	Red	Red
MAZ2082-A		7.7		8.2										
MAZ2082-B		8.1		8.6										
MAZ2091	40	8.5	9.1	9.6	5	10	40	6	40	5.4	220	White	Brown	Brown
MAZ2091-A		8.5		9.05										
MAZ2091-B		8.95		9.5										
MAZ2100	40	9.4	10.0	10.6	7	10	40	6	40	6.3	200	Brown	Black	—
MAZ2100-A		9.4		10										
MAZ2100-B		9.9		10.5										
MAZ2110	20	10.4	11.0	11.6	7	5	20	8	20	7.4	160	Brown	Brown	—
MAZ2110-A		10.4		11.05										
MAZ2110-B		10.85		11.5										
MAZ2120	20	11.4	12.0	12.7	8	5	20	8	20	8.4	160	Brown	Red	—
MAZ2120-A		11.4		12.1										
MAZ2120-B		11.9		12.6										
MAZ2130	20	12.4	13.0	14.1	9	5	20	10	20	9.4	155	Brown	Orange	—
MAZ2130-A		12.4		13.25										
MAZ2130-B		13.15		14.0										
MAZ2150	20	13.8	15.0	15.6	10	5	20	12	20	11.4	150	Brown	Green	—
MAZ2150-A		13.8		14.7										
MAZ2150-B		14.5		15.4										
MAZ2160	20	15.3	16.0	17.1	11	5	20	12	20	12.5	135	Brown	Blue	—
MAZ2160-A		15.3		16.3										
MAZ2160-B		16.1		17.1										
MAZ2180	20	16.8	18.0	19.1	12	5	20	15	20	14.5	110	Brown	Gray	—
MAZ2180-A		16.8		18.0										
MAZ2180-B		17.8		19.0										
MAZ2200	20	18.8	20.0	21.2	14	5	20	15	20	16.6	100	Red	Black	—
MAZ2200-A		18.8		20.0										
MAZ2200-B		19.8		21.0										

■ Electrical characteristics within part numbers (continued) $T_a = 25^\circ\text{C}$

Part Number	Zener voltage			Reverse current		Operating resistance		Temperature coefficient of zener voltage		Terminal capacitance	Marking (Color indication) Main body: Yellow green			
	I_Z (mA)	V_Z (V)			I_R (μA)		R_Z (Ω)		S_Z (mV/ $^\circ\text{C}$)		C_T (pF) ($V_R = 0$ V) $f = 1$ MHz Typ	1st.	2nd.	3rd.
		Min	Nom	Max	V_R (V)	Max	I_Z (mA)	Max	I_Z (mA)	Typ				
MAZ2220	10	20.8	22.0	23.3	15	5	10	20	10	18.6	95	Red	Red	—
MAZ2220-A		20.8	—	22.15										
MAZ2220-B		21.85	—	23.2										
MAZ2240	10	22.8	24.0	25.6	16	5	10	20	10	20.7	90	Red	Yellow	—
MAZ2240-A		22.8	—	24.35										
MAZ2240-B		24.15	—	25.6										
MAZ2270	10	25.1	27.0	28.9	18	2	10	25	10	23.8	85	Red	Purple	—
MAZ2270-A		25.1	—	27.0										
MAZ2270-B		26.9	—	28.9										
MAZ2300	10	28.0	30.0	32.0	20	2	10	25	10	26.9	80	Orange	Black	—
MAZ2300-A		28.0	—	30.1										
MAZ2300-B		29.9	—	32.0										
MAZ2330	10	31.0	33.0	35.0	22	2	10	30	10	30.0	75	Orange	Orange	—
MAZ2330-A		31.0	—	33.14										
MAZ2330-B		32.86	—	35.0										
MAZ2360	10	34.0	36.0	38.0	24	2	10	30	10	33.4	70	Orange	Blue	—
MAZ2360-A		34.0	—	36.16										
MAZ2360-B		35.84	—	38.0										
MAZ2390	10	37.0	39.0	41.0	26	5	10	50	10	36.3	65	Orange	White	—
MAZ2430	10	40.0	43.0	46.0	29	5	10	50	10	41.1	60	Yellow	Orange	—
MAZ2470	10	44.0	47.0	50.0	31	5	10	50	10	44.9	55	Yellow	Purple	—
MAZ2510	10	48.0	51.0	54.0	33	5	10	50	10	48.6	50	Green	Brown	—
MAZ2560	10	52.0	56.0	60.0	35	5	10	50	10	54.9	45	Green	Blue	—

Note) 1. The V_Z value is the one after power application for 20 ms at $T_a = 25^\circ\text{C}$.
 2. The zener voltage temperature coefficient is the one for $T_j = 25^\circ\text{C}$ to 150°C .

