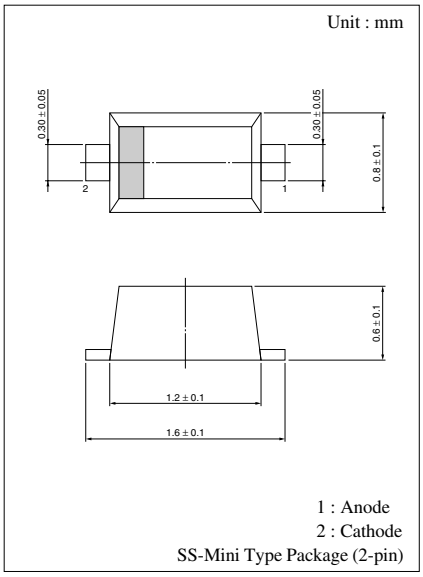
MAZS000 Series

Silicon planar type

For constant voltage, constant-current, waveform clipper and surge absorption circuit



■ Features

- SS-mini type 2-pin package
- Low noise type
- V_Z rank classified (V_Z = 2.4 V to 39 V)

■ Absolute Maximum Ratings $T_a = 25°C$

Parameter	Symbol	Rating	Unit
Instanious forward current	I_{FRM}	200	mA
Total power dissipation*	P_{tot}	150	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	−55 to +150	°C

Note) * : With a printed-circuit board

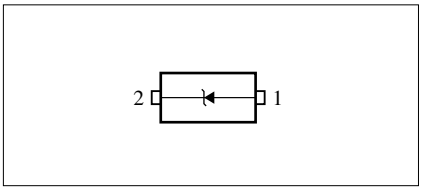
Marking Symbol

Refer to the list of the electrical characteristics within part numbers

(Example) MAZS082 : 8
MAZS0820L : 8_
MAZS0820M : 8–
MAZS0820H : 8^

Note) L/M/H marked products will be supplied unless other wise specified

Internal Connection



■ Common Electrical Characteristics $T_a = 25°C$*1

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Forward voltage	V_F	I_F = 10 mA		0.9	1.0	V
Zener voltage*2	V_Z	I_Z ..... Specified value	Refer to the list of the electrical characteristics within part numbers			V
Operating resistance	R_Z	I_Z ..... Specified value				Ω
Reverse current	I_R	V_R ..... Specified value				μA

Note) 1. Test method according to the JIS C7031 testing
2. Rated input/output frequency: 5 MHz
3. *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.

■ Electrical characteristics within part numbers $T_a = 25°C$

Part Number	Zener voltage				Reverse current		Temperature coefficient of zener voltage		Marking Symbol
	V_Z				I_R		S_Z		
	Min (V)	Nom (V)	Max (V)	I_Z (mA)	Max (μA)	V_R (V)	Typ (mV/°C)	I_Z (mA)	
MAZS024	2.28	2.40	2.60	5	120	1.0	−1.6	5	T
MAZS027	2.50	2.70	2.90	5	120	1.0	−2.0	5	2 or 2_ or 2^
MAZS0270L	2.50	2.60	2.75						2_
MAZS0270H	2.65	2.80	2.90						2^
MAZS030	2.80	3.00	3.20	5	50	1.0	−2.1	5	3 or 3_ or 3^
MAZS0300L	2.80	2.90	3.05						3_
MAZS0300H	2.95	3.10	3.20						3^
MAZS033	3.10	3.30	3.50	5	20	1.0	−2.4	5	F or F_ or F^
MAZS0330L	3.10	3.20	3.35						F_
MAZS0330H	3.25	3.40	3.50						F^
MAZS036	3.40	3.60	3.80	5	10	1.0	−2.4	5	H or H_ or H^
MAZS0360L	3.40	3.50	3.65						H_
MAZS0360H	3.55	3.70	3.80						H^
MAZS039	3.70	3.90	4.10	5	10	1.0	−2.5	5	K or K_ or K^
MAZS0390L	3.70	3.80	3.97						K_
MAZS0390H	3.87	4.00	4.10						K^
MAZS043	4.00	4.30	4.60	5	10	1.0	−2.5	5	L or L_ or L− or L^
MAZS0430L	4.03	4.10	4.26						L_
MAZS0430M	4.17	4.30	4.40						L−
MAZS0430H	4.31	4.40	4.54						L^
MAZS047	4.40	4.70	5.00	5	2.0	1.0	−1.4	5	N or N_ or N− or N^
MAZS0470L	4.45	4.60	4.69						N_
MAZS0470M	4.59	4.70	4.83						N−
MA7Z0470H	4.74	4.90	4.99						N^
MAZS051	4.80	5.10	5.40	5	1.0	2.0	−0.8	5	5 or 5_ or 5− or 5^
MAZS0510L	4.87	5.00	5.12						5_
MAZS0510M	5.00	5.10	5.26						5−
MAZS0510H	5.14	5.30	5.40						5^
MAZS056	5.30	5.60	6.00	5	0.5	2.5	1.2	5	P or P_ or P− or P^
MAZS0560L	5.30	5.40	5.58						P_
MAZS0560M	5.48	5.60	5.76						P−
MAZS0560H	5.66	5.80	5.95						P^
MAZS062	5.80	6.20	6.60	5	0.2	4.0	2.3	5	6 or 6_ or 6− or 6^
MAZS0620L	5.85	6.00	6.15						6_
MAZS0620M	6.05	6.20	6.36						6−
MAZS0620H	6.24	6.40	6.56						6^
MAZS068	6.40	6.80	7.20	5	0.1	4.0	3.0	5	R or R_ or R− or R^
MAZS0680L	6.44	6.60	6.77						R_
MAZS0680M	6.64	6.80	6.98						R−
MAZS0680H	6.85	7.00	7.20						R^
MAZS075	7.00	7.50	7.90	5	0.1	5.0	4.0	5	7 or 7_ or 7− or 7^
MAZS0750L	7.07	7.30	7.43						7_
MAZS0750M	7.29	7.50	7.67						7−
MAZS0750H	7.51	7.70	7.89						7^
MAZS082	7.70	8.20	8.70	5	0.1	5.0	4.6	5	8 or 8_ or 8− or 8^
MAZS0820L	7.77	7.90	8.17						8_
MAZS0820M	8.03	8.20	8.43						8−
MAZS0820H	8.29	8.50	8.70						8^
MAZS091	8.50	9.10	9.60	5	0.1	6.0	5.5	5	9 or 9_ or 9− or 9^
MAZS0910L	8.58	8.80	9.02						9_
MAZS0910M	8.87	9.10	9.33						9−
MAZS0910H	9.14	9.40	9.60						9^

■ Electrical characteristics within part numbers (continued) $T_a = 25°C$

Part Number	Zener voltage				Reverse current		Temperature coefficient of zener voltage		Marking Symbol
	V_Z (V)				I_R		S_Z		
	Min (V)	Nom (V)	Max (V)	I_Z (mA)	Max (μA)	V_R (V)	Typ (mV/°C)	I_Z (mA)	
MAZS100	9.40	10.00	10.60	5	0.05	7.0	6.4	5	10 or 10_ or 10– or 10^
MAZS1000L	9.44	9.70	9.92						10_
MAZS1000M	9.75	10.00	10.25						10-
MAZS1000H	10.07	10.30	10.59						10^
MAZS110	10.40	11.00	11.60	5	0.05	8.0	7.4	5	11 or 11_ or 11– or 11^
MAZS1100L	10.40	10.70	10.94						11_
MAZS1100M	10.73	11.00	11.28						11–
MAZS1100H	11.05	11.30	11.60						11^
MAZS120	11.40	12.00	12.70	5	0.05	9.0	8.4	5	12 or 12_ or 12– or 12^
MAZS1200L	11.40	11.70	11.96						12_
MAZS1200M	11.73	12.00	12.33						12-
MAZS1200H	12.06	12.30	12.68						12^
MAZS130	12.40	13.00	14.10	5	0.05	10.0	9.4	5	13 or 13_ or 13– or 13^
MAZS1300L	12.40	12.70	12.99						13_
MAZS1300M	12.73	13.00	13.40						13–
MAZS1300H	13.25	13.70	14.08						13^
MAZS150	13.90	15.00	15.60	5	0.05	11.0	11.4	5	15 or 15_ or 15– or 15^
MAZS1500L	13.90	14.30	14.76						15_
MAZS1500M	14.60	15.00	15.35						15–
MAZS1500H	14.95	15.30	15.60						15^
MAZS160	15.30	16.00	17.10	5	0.05	12.0	12.4	5	16 or 16_ or 16– or 16^
MAZS1600L	15.30	15.70	16.09						16_
MAZS1600M	15.70	16.00	16.50						16–
MAZS1600H	16.26	16.70	17.10						16^
MAZS180	16.90	18.00	19.10	5	0.05	13.0	14.4	5	18 or 18_ or 18– or 18^
MAZS1800L	16.90	17.30	17.76						18_
MAZS1800M	17.55	18.00	18.45						18–
MAZS1800H	18.20	18.70	19.10						18^
MAZS200	18.80	20.00	21.20	5	0.05	15.0	16.4	5	20 or 20_ or 20– or 20^
MAZS2000L	18.85	19.30	19.81						20_
MAZS2000M	19.50	20.00	20.50						20–
MAZS2000H	20.15	20.70	21.19						20^
MAZS220	20.80	22.00	23.30	5	0.05	17.0	18.4	5	22 or 22_ or 22– or 22^
MAZS2200L	20.80	21.30	21.86						22_
MAZS2200M	21.45	22.00	22.55						22–
MAZS2200H	22.10	22.70	23.24						22^
MAZS240	22.80	24.00	25.60	5	0.05	19.0	20.4	5	24 or 24_ or 24– or 24^
MAZS2400L	22.80	23.30	23.97						24_
MAZS2400M	23.50	24.00	24.70						24–
MAZS2400H	24.35	25.00	25.60						24^
MAZS270	25.10	27.00	28.90	2	0.05	21.0	23.4	2	27 or 27_ or 27– or 27^
MAZS2700L	25.30	26.00	26.70						27_
MAZS2700M	26.30	27.00	27.70						27–
MAZS2700H	27.30	28.00	28.70						27^
MAZS300	28.00	30.00	32.00	2	0.05	23.0	26.6	2	30 or 30_ or 30– or 30^
MAZS3000L	28.30	29.00	29.70						30_
MAZS3000M	29.30	30.00	30.80						30–
MAZS3000H	30.20	31.00	31.80						30^
MAZS330	31.00	33.00	35.00	2	0.05	25.0	29.7	2	33 or 33_ or 33– or 33^
MAZS3300L	31.20	32.00	32.80						33_
MAZS3300M	32.20	33.00	33.80						33–
MAZS3300H	33.20	34.00	34.90						33^

■ Electrical characteristics within part numbers (continued) $T_a = 25°C$

Part Number	Zener voltage				Reverse current		Temperature coefficient of zener voltage		Marking Symbol
	V_Z (V)				I_R		S_Z		
	Min (V)	Nom (V)	Max (V)	I_Z (mA)	Max (μA)	V_R (V)	Typ (mV/°C)	I_Z (mA)	
MAZS360	34.00	36.00	38.00	2	0.05	27.0	33.0	2	36 or 36_ or 36– or 36^
MAZS3600L	34.10	35.00	35.90						36_
MAZS3600M	35.10	36.00	36.90						36–
MAZS3600H	36.10	37.00	37.90						36^
MAZS390	37.00	39.00	41.00	2	0.05	30.0	35.6	2	39 or 39_ or 39– or 39^
MAZS3900L	37.10	38.00	39.00						39_
MAZS3900M	38.00	39.00	40.00						39–
MAZS3900H	39.00	40.00	41.00						39^