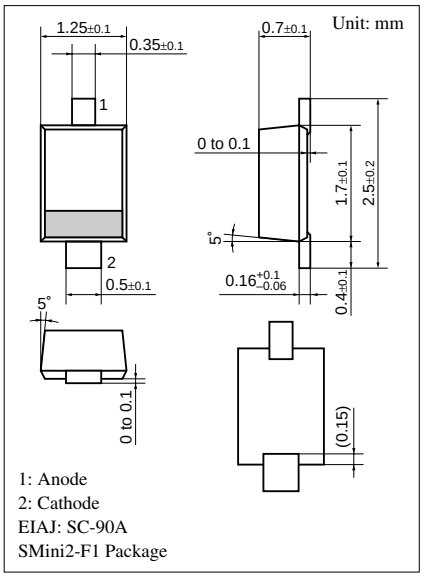
MAZ8000 Series (MA8000 Series)

Silicon planar type

For stabilization of power supply

■ Features

- Extremely low noise voltage caused from the diode (2.4 V to 39 V, 1/3 to 1/10 of our conventional MAZ3000 series)
- Extremely good rising performance (in the low-current range)
- Easy-to-select the optimum diode because of their finely divided zener-voltage ranks
- Guaranteed reliability, equivalent to that of conventional products (Mini type package)
- Allowing to reduce the mounting area, thickness and weight substantially, compared with those of the conventional products
- Allowing both reflow and flow mode of automatic soldering
- Allowing automatic mounting by an existing chip mounter



■ Absolute Maximum Ratings $T_a = 25°C$

Parameter	Symbol	Rating	Unit
Repetitive peak 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) MAZ80820H : 8^2

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

■ 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
Zener knee operating resistance	R_{ZK}	I_Z	Specified value				Ω
Zener 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				mV/°C

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: $T_j = 25°C$ to 150°C

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

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

Part number	Zener voltage				Reverse current		Zener operating resistance				Temperature coefficient of zener voltage		Marking symbol	Conventional products
	V_Z (V)			I_Z	I_R (μA)	V_R	R_Z (Ω)	I_Z	R_{ZK} (Ω)	I_Z	S_Z (mV/°C)	I_Z		
	Min	Nom	Max	(mA)	Max	(V)	Max	(mA)	Max	(mA)	Typ	(mA)		
MAZ8024	2.28	2.40	2.60	5	120	1.0	100	5	—	—	−1.6	5	2.4	MAZ3024
MAZ8027	2.50	2.70	2.90	5	120	1.0	110	5	—	—	−2.0	5	2_7or2^7	MAZ3027
MAZ80270L	2.50	2.60	2.75										2_7	MAZ30270L
MAZ80270H	2.65	2.80	2.90										2^7	MAZ30270H
MAZ8030	2.80	3.00	3.20	5	50	1.0	120	5	—	—	−2.1	5	3_0or3^0	MAZ3030
MAZ80300L	2.80	2.90	3.05										3_0	MAZ30300L
MAZ80300H	2.95	3.10	3.20										3^0	MAZ30300H
MAZ8033	3.10	3.30	3.50	5	20	1.0	130	5	—	—	−2.4	5	3_3or3^3	MAZ3033
MAZ80330L	3.10	3.20	3.35										3_3	MAZ30330L
MAZ80330H	3.25	3.40	3.50										3^3	MAZ30330H
MAZ8036	3.40	3.60	3.80	5	10	1.0	130	5	—	—	−2.4	5	3_6or3^6	MAZ3036
MAZ80360L	3.40	3.50	3.65										3_6	MAZ30360L
MAZ80360H	3.55	3.70	3.80										3^6	MAZ30360H
MAZ8039	3.70	3.90	4.10	5	10	1.0	130	5	—	—	−2.5	5	3_9or3^9	MAZ3039
MAZ80390L	3.70	3.80	3.97										3_9	MAZ30390L
MAZ80390H	3.87	4.00	4.10										3^9	MAZ30390H
MAZ8043	4.00	4.30	4.60	5	10	1.0	130	5	—	—	−2.5	5	4_3or4−3or4^3	MAZ3043
MAZ80430L	4.03	4.10	4.26										4_3	MAZ30430L
MAZ80430M	4.17	4.30	4.40										4−3	MAZ30430M
MAZ80430H	4.31	4.40	4.54										4^3	MAZ30430H
MAZ8047	4.40	4.70	5.00	5	2.0	1.0	80	5	800	1.0	−1.4	5	4_7or4−7or4^7	MAZ3047
MAZ80470L	4.45	4.60	4.69										4_7	MAZ30470L
MAZ80470M	4.59	4.70	4.83										4−7	MAZ30470M
MAZ80470H	4.74	4.90	4.99										4^7	MAZ30470H
MAZ8051	4.80	5.10	5.40	5	1.0	2.0	60	5	500	1.0	−0.8	5	5_1or5−1or5^1	MAZ3051
MAZ80510L	4.87	5.00	5.12										5_1	MAZ30510L
MAZ80510M	5.00	5.10	5.26										5-1	MAZ30510M
MAZ80510H	5.14	5.30	5.40										5^1	MAZ30510H
MAZ8056	5.30	5.60	6.00	5	0.5	2.5	40	5	200	0.5	1.2	5	5_6or5−6or5^6	MAZ3056
MAZ80560L	5.30	5.40	5.58										5_6	MAZ30560L
MAZ80560M	5.48	5.60	5.76										5−6	MAZ30560M
MAZ80560H	5.66	5.80	5.95										5^6	MAZ30560H
MAZ8062	5.80	6.20	6.60	5	0.2	4.0	30	5	100	0.5	2.3	5	6_2or6−2or6^2	MAZ3062
MAZ80620L	5.85	6.00	6.15										6_2	MAZ30620L
MAZ80620M	6.05	6.20	6.36										6−2	MAZ30620M
MAZ80620H	6.24	6.40	6.56										6^2	MAZ30620H
MAZ8068	6.40	6.80	7.20	5	0.1	4.0	20	5	60	0.5	3.0	5	6_8or6−8or6^8	MAZ3068
MAZ80680L	6.44	6.60	6.77										6_8	MAZ30680L
MAZ80680M	6.64	6.80	6.98										6−8	MAZ30680M
MAZ80680H	6.85	7.00	7.20										6^8	MAZ30680H
MAZ8075	7.00	7.50	7.90	5	0.1	5.0	20	5	60	0.5	4.0	5	7_5or7−5or7^5	MAZ3075
MAZ80750L	7.07	7.30	7.43										7_5	MAZ30750L
MAZ80750M	7.29	7.50	7.67										7−5	MAZ30750M
MAZ80750H	7.51	7.70	7.89										7^5	MAZ30750H
MAZ8082	7.70	8.20	8.70	5	0.1	5.0	20	5	60	0.5	4.6	5	8_2or8−2or8^2	MAZ3082
MAZ80820L	7.77	7.90	8.17										8_2	MAZ30820L
MAZ80820M	8.03	8.20	8.43										8−2	MAZ30820M
MAZ80820H	8.29	8.50	8.70										8^2	MAZ30820H

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

Part number	Zener voltage				Reverse current		Zener operating resistance				Temperature coefficient of zener voltage		Marking symbol	Conventional products
	V_Z (V)				I_R		R_Z		R_{ZK}		S_Z (mV/°C)			
	Min	Nom	Max	I_Z (mA)	(μA) Max	V_R (V)	(Ω) Max	I_Z (mA)	(Ω) Max	I_Z (mA)	Typ	I_Z (mA)		
MAZ8091	8.50	9.10	9.60	5	0.1	6.0	20	5	60	0.5	5.5	5	9_1or9–1or9^1	MAZ3091
MAZ80910L	8.58	8.80	9.02										9_1	MAZ30910L
MAZ80910M	8.87	9.10	9.33										9–1	MAZ30910M
MAZ80910H	9.14	9.40	9.60										9^1	MAZ30910H
MAZ8100	9.40	10.00	10.60	5	0.05	7.0	30	5	60	0.5	6.4	5	10_or10–or10^	MAZ3100
MAZ81000L	9.44	9.70	9.92										10_	MAZ31000L
MAZ81000M	9.75	10.00	10.25										10–	MAZ31000M
MAZ81000H	10.07	10.30	10.59										10^	MAZ31000H
MAZ8110	10.40	11.00	11.60	5	0.05	8.0	30	5	60	0.5	7.4	5	11_or11–or11^	MAZ3110
MAZ81100L	10.40	10.70	10.94										11_	MAZ31100L
MAZ81100M	10.73	11.00	11.28										11–	MAZ31100M
MAZ81100H	11.05	11.30	11.60										11^	MAZ31100H
MAZ8120	11.40	12.00	12.70	5	0.05	9.0	30	5	80	0.5	8.4	5	12_or12–or12^	MAZ3120
MAZ81200L	11.40	11.70	11.96										12_	MAZ31200L
MAZ81200M	11.73	12.00	12.33										12–	MAZ31200M
MAZ81200H	12.06	12.30	12.68										12^	MAZ31200H
MAZ8130	12.40	13.00	14.10	5	0.05	10.0	35	5	80	0.5	9.4	5	13_o13–or13^	MAZ3130
MAZ81300L	12.40	12.70	12.99										13_	MAZ31300L
MAZ81300M	12.73	13.00	13.40										13–	MAZ31300M
MAZ81300H	13.25	13.70	14.08										13^	MAZ31300H
MAZ81400M	13.65	14.00	14.35	5	0.05	10.0	40	5	80	0.5	10.0	5	14–	MAZ31400M
MAZ8150	13.90	15.00	15.60	5	0.05	11.0	40	5	80	0.5	11.4	5	15_or15–or15^	MAZ3150
MAZ81500L	13.90	14.30	14.76										15_	MAZ31500L
MAZ81500M	14.60	15.00	15.35										15–	MAZ31500M
MAZ81500H	14.95	15.30	15.60										15^	MAZ31500H
MAZ8160	15.30	16.00	17.10	5	0.05	12.0	50	5	80	0.5	12.4	5	16_or16–or16^	MAZ3160
MAZ81600L	15.30	15.70	16.09										16_	MAZ31600L
MAZ81600M	15.70	16.00	16.50										16–	MAZ31600M
MAZ81600H	16.26	16.70	17.10										16^	MAZ31600H
MAZ8180	16.90	18.00	19.10	5	0.05	13.0	60	5	80	0.5	14.4	5	18_or18–or18^	MAZ3180
MAZ81800L	16.90	17.30	17.76										18_	MAZ31800L
MAZ81800M	17.55	18.00	18.45										18–	MAZ31800M
MAZ81800H	18.20	18.70	19.10										18^	MAZ31800H
MAZ8200	18.80	20.00	21.20	5	0.05	15.0	80	5	100	0.5	16.4	5	20_or20–or20^	MAZ3200
MAZ82000L	18.85	19.30	19.81										20_	MAZ32000L
MAZ82000M	19.50	20.00	20.50										20–	MAZ32000M
MAZ82000H	20.15	20.70	21.19										20^	MAZ32000H
MAZ8220	20.80	22.00	23.30	5	0.05	17.0	80	5	100	0.5	18.4	5	22_or22–or22^	MAZ3220
MAZ82200L	20.80	21.30	21.86										22_	MAZ32200L
MAZ82200M	21.45	22.00	22.55										22–	MAZ32200M
MAZ82200H	22.10	22.70	23.24										22^	MAZ32200H
MAZ8240	22.80	24.00	25.60	5	0.05	19.0	100	5	120	0.5	20.4	5	24_or24–or24^	MAZ3240
MAZ82400L	22.80	23.30	23.97										24_	MAZ32400L
MAZ82400M	23.50	24.00	24.70										24–	MAZ32400M
MAZ82400H	24.35	25.00	25.60										24^	MAZ32400H
MAZ8270	25.10	27.00	28.90	2	0.05	21.0	120	2	120	0.5	23.4	2	27_or27–or27^	MAZ3270
MAZ82700L	25.30	26.00	26.70										27_	MAZ32700L
MAZ82700M	26.30	27.00	27.70										27–	MAZ32700M
MAZ82700H	27.30	28.00	28.70										27^	MAZ32700H

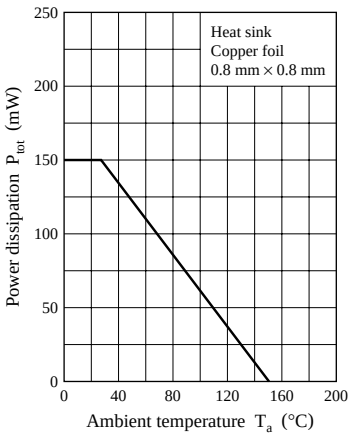
■ Electrical characteristics within part numbers (continued) $T_a = 25°C$

Part number	Zener voltage				Reverse current		Operating resistance				Temperature coefficient of zener voltage		Marking symbol	Conventional products
	V_Z (V)			I_Z	I_R		R_Z		R_{ZK}		S_Z (mV/°C)			
	Min	Nom	Max	(mA)	(μA) Max	V_R (V)	(Ω) Max	I_Z (mA)	(Ω) Max	I_Z (mA)	Typ	I_Z (mA)		
MAZ8300	28.00	30.00	32.00	2	0.05	23.0	160	2	160	0.5	26.6	2	30_or30–or30^	MAZ3300
MAZ83000L	28.30	29.00	29.70										30_	MAZ33000L
MAZ83000M	29.30	30.00	30.80										30–	MAZ33000M
MAZ83000H	30.20	31.00	31.80										30^	MAZ33000H
MAZ8330	31.00	33.00	35.00	2	0.05	25.0	200	2	200	0.5	29.7	2	33_or33–or33^	MAZ3330
MAZ83300L	31.20	32.00	32.80										33_	MAZ33300L
MAZ83300M	32.20	33.00	33.80										33–	MAZ33300M
MAZ83300H	33.20	34.00	34.90										33^	MAZ33300H
MAZ8360	34.00	36.00	38.00	2	0.05	27.0	250	2	250	0.5	33.0	2	36_or36–or36^	MAZ3360
MAZ83600L	34.10	35.00	35.90										36_	MAZ33600L
MAZ83600M	35.10	36.00	36.90										36–	MAZ33600M
MAZ83600H	36.10	37.00	37.90										36^	MAZ33600H
MAZ8390	37.00	39.00	41.00	2	0.05	30.0	300	2	300	0.5	35.6	2	39_or39–or39^	—
MAZ83900L	37.10	38.00	39.00										39_	—
MAZ83900M	38.00	39.00	40.00										39–	—
MAZ83900H	39.00	40.00	41.00										39^	—

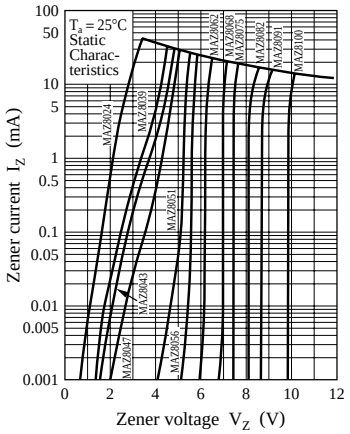
Note) 1. The V_Z value is the one after power application for 20 ms at $T_a = 25°C$.

2. The zener voltage temperature coefficient is the one for $T_j = 25°C$ to 150°C.

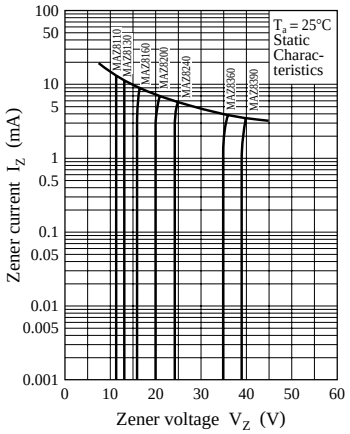
P_{tot} — T_a



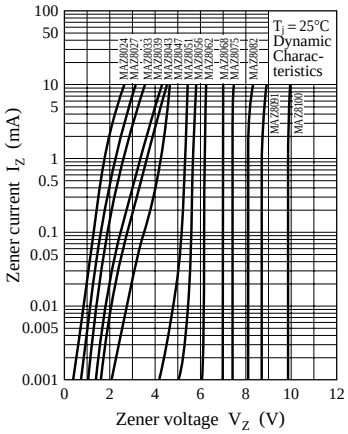
I_Z — V_Z



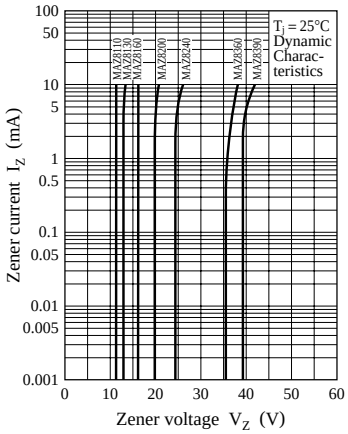
I_Z — V_Z



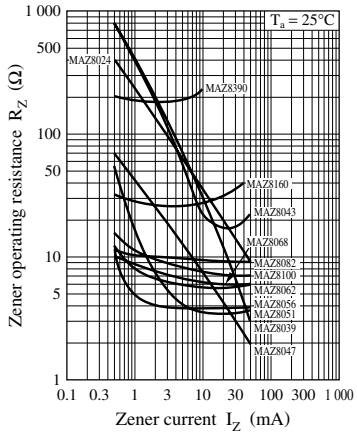
I_Z — V_Z



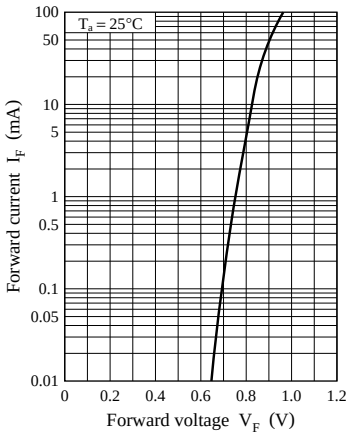
I_Z — V_Z



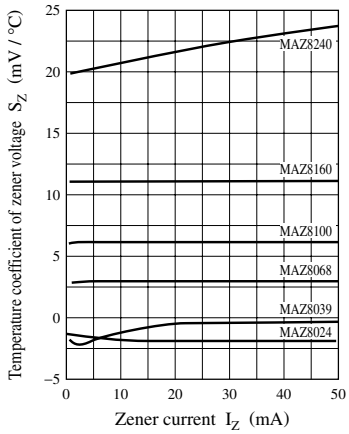
R_Z — I_Z



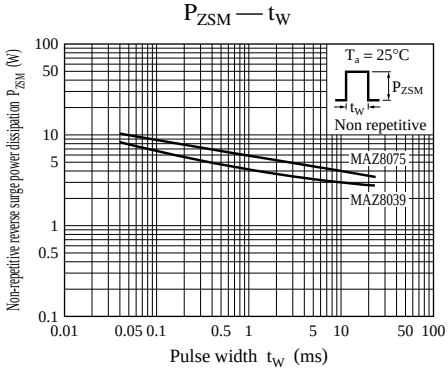
I_F — V_F



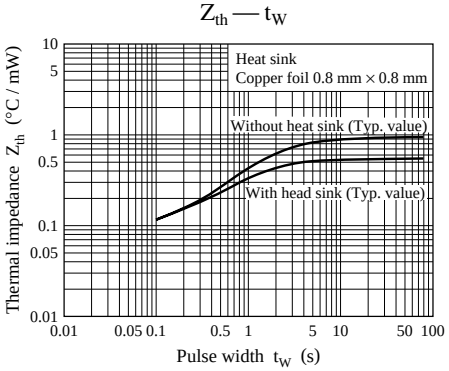
S_Z — I_Z



P_{ZSM} — t_W



Z_{th} — t_W



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