

# MAZSxxxG Series

## Silicon planar type

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

### ■ Features

- Low noise type
- $V_Z$  rank classified ( $V_Z = 2.4\text{ V to }39\text{ V}$ )

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

Parameter	Symbol	Rating	Unit
Repetitive peak forward current	$I_{FRM}$	200	mA
Total power dissipation *	$P_{tot}$	150	mW
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

Note) \*: With a printed circuit board

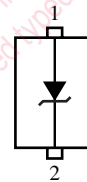
### ■ Package

- Code  
SSMini2-F4
- Pin Name  
1: Anode  
2: Cathode

### ■ Marking Symbol

Refer to the list of the electrical characteristics within part numbers

### ■ Internal Connection



### ■ Common Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$ \*1)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Forward voltage	$V_F$	$I_F = 10\text{ mA}$		0.9	1.0	V
Zener voltage *2	$V_Z$	$I_Z$ Specified value				V
Reverse current	$I_R$	$V_R$ Specified value				$\mu\text{A}$
Zener rise operating resistance	$R_{ZK}$	$I_Z$ Specified value				$\Omega$
Zener operating resistance	$R_Z$	$I_Z$ Specified value				$\Omega$
Temperature coefficient of zener voltage *3	$S_Z$	$I_Z$ Specified value				$\text{mV}/^\circ\text{C}$

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7031 measuring methods for diodes.

2. Rated input/output frequency: 5 MHz

3. \*1: The  $V_Z$  value is for the temperature of  $25^\circ\text{C}$ . In other cases, carry out the temperature compensation.

\*2: Guaranteed at 20 ms after power application.

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

■ Electrical characteristics within part numbers  $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$ 

Part Number	Zener voltage			Reverse current		Zener operating resistance				Temperature coefficient of zener voltage		Marking symbol	
	$V_Z$ (V)			$I_R$ ( $\mu\text{A}$ )		$R_Z$ ( $\Omega$ )		$R_{ZK}$ ( $\Omega$ )		$S_Z$ (mV/ $^\circ\text{C}$ )			
	Min	Nom	Max	$I_Z$ (mA)	Max	$V_R$ (V)	Max	$I_Z$ (mA)	Max	$I_Z$ (mA)	Typ		$I_Z$ (mA)
MAZS024G0L	2.28	2.40	2.60	5	120	1.0	100	5	—	—	-1.6	5	T
MAZS027G0L	2.50	2.70	2.90	5	120	1.0	110	5	—	—	-2.0	5	2 or 2_ or 2^
MAZS027GLL	2.50	2.60	2.75										2_
MAZS027GHL	2.65	2.80	2.90										2^
MAZS030G0L	2.80	3.00	3.20	5	50	1.0	120	5	—	—	-2.1	5	3 or 3_ or 3^
MAZS030GLL	2.80	2.90	3.05										3_
MAZS030GHL	2.95	3.10	3.20										3^
MAZS033G0L	3.10	3.30	3.50	5	20	1.0	130	5	—	—	-2.4	5	F or F_ or F^
MAZS033GLL	3.10	3.20	3.35										F_
MAZS033GHL	3.25	3.40	3.50										F^
MAZS036G0L	3.40	3.60	3.80	5	10	1.0	130	5	—	—	-2.4	5	H or H_ or H^
MAZS036GLL	3.40	3.50	3.65										H_
MAZS036GHL	3.55	3.70	3.80										H^
MAZS039G0L	3.70	3.90	4.10	5	10	1.0	130	5	—	—	-2.5	5	K or K_ or K^
MAZS039GLL	3.70	3.80	3.97										K_
MAZS039GHL	3.87	4.00	4.10										K^
MAZS043G0L	4.00	4.30	4.60	5	10	1.0	130	5	—	—	-2.5	5	L or L_ or L- or L^
MAZS043GLL	4.03	4.10	4.26										L_
MAZS043GML	4.17	4.30	4.40										L-
MAZS043GHL	4.31	4.40	4.54										L^
MAZS047G0L	4.40	4.70	5.00	5	2.0	1.0	80	5	800	1.0	-1.4	5	N or N_ or N- or N^
MAZS047GLL	4.45	4.60	4.69										N_
MAZS047GML	4.59	4.70	4.83										N-
MAZS047GHL	4.74	4.90	4.99										N^
MAZS051G0L	4.80	5.10	5.40	5	1.0	2.0	60	5	500	1.0	-0.8	5	5 or 5_ or 5- or 5^
MAZS051GLL	4.87	5.00	5.12										5_
MAZS051GML	5.00	5.10	5.26										5-
MAZS051GHL	5.14	5.30	5.40										5^
MAZS056G0L	5.30	5.60	6.00	5	0.5	2.5	40	5	200	0.5	1.2	5	P or P_ or P- or P^
MAZS056GLL	5.30	5.40	5.58										P_
MAZS056GML	5.48	5.60	5.76										P-
MAZS056GHL	5.66	5.80	5.95										P^
MAZS062G0L	5.80	6.20	6.60	5	0.2	4.0	30	5	100	0.5	2.3	5	6 or 6_ or 6- or 6^
MAZS062GLL	5.85	6.00	6.15										6_
MAZS062GML	6.05	6.20	6.36										6-
MAZS062GHL	6.24	6.40	6.56										6^
MAZS068G0L	6.40	6.80	7.20	5	0.1	4.0	20	5	60	0.5	3.0	5	R or R_ or R- or R^
MAZS068GLL	6.44	6.60	6.77										R_
MAZS068GML	6.64	6.80	6.98										R-
MAZS068GHL	6.85	7.00	7.20										R^
MAZS075G0L	7.00	7.50	7.90	5	0.1	5.0	20	5	60	0.5	4.0	5	7 or 7_ or 7- or 7^
MAZS075GLL	7.07	7.30	7.43										7_
MAZS075GML	7.29	7.50	7.67										7-
MAZS075GHL	7.51	7.70	7.89										7^
MAZS082G0L	7.70	8.20	8.70	5	0.1	5.0	20	5	60	0.5	4.6	5	8 or 8_ or 8- or 8^
MAZS082GLL	7.77	7.90	8.17										8_
MAZS082GML	8.03	8.20	8.43										8-
MAZS082GHL	8.29	8.50	8.70										8^
MAZS091G0L	8.50	9.10	9.60	5	0.1	6.0	20	5	60	0.5	5.5	5	9 or 9_ or 9- or 9^
MAZS091GLL	8.58	8.80	9.02										9_
MAZS091GML	8.87	9.10	9.33										9-
MAZS091GHL	9.14	9.40	9.60										9^

■ Electrical characteristics within part numbers (continued)  $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$ 

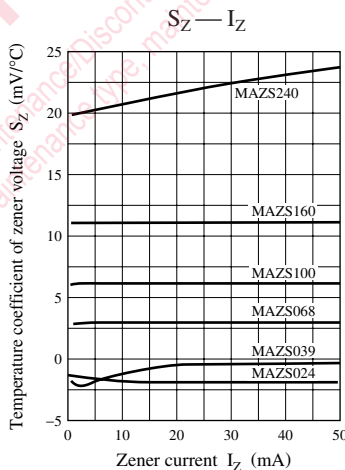
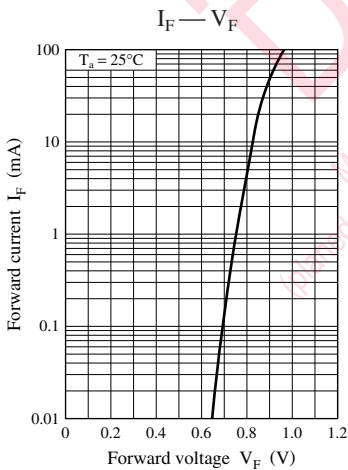
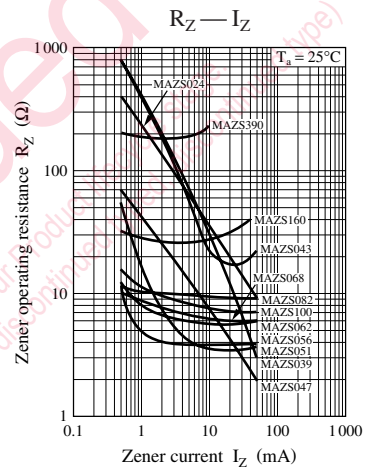
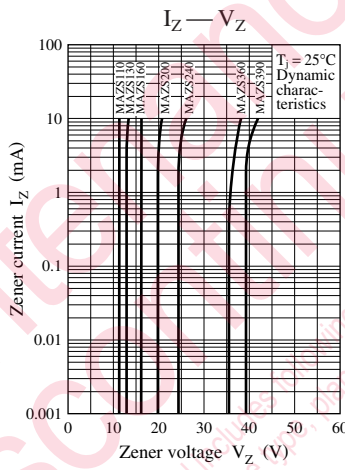
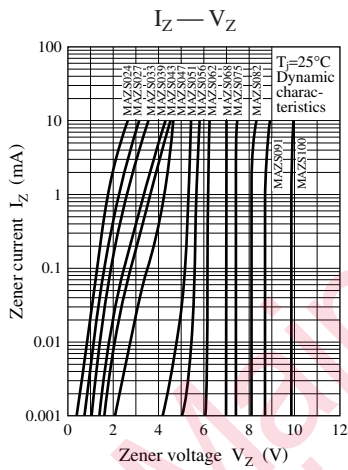
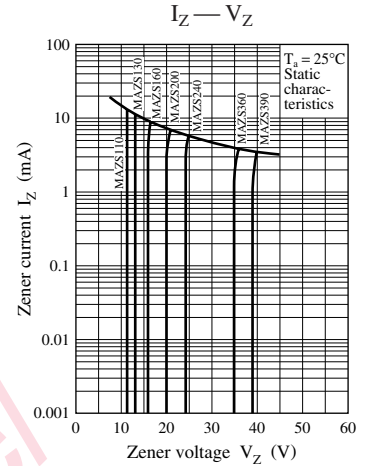
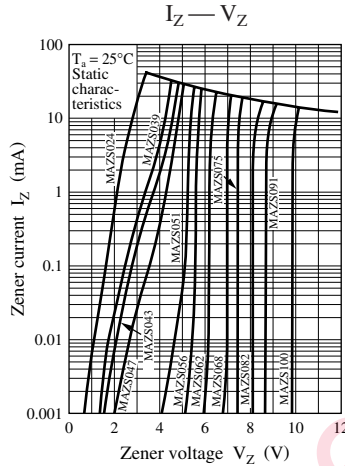
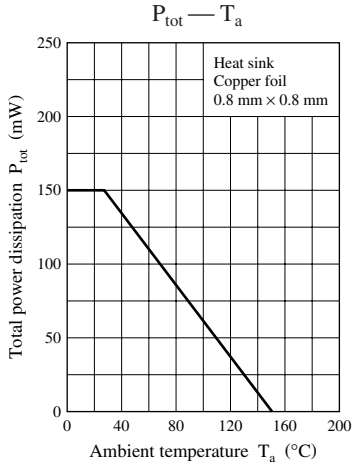
Part Number	Zener voltage				Reverse current		Zener operating resistance				Temperature coefficient of zener voltage		Marking symbol
	V <sub>Z</sub> (V)			I <sub>Z</sub> (mA)	I <sub>R</sub> (μA)	V <sub>R</sub> (V)	R <sub>Z</sub> (Ω)		R <sub>ZK</sub> (Ω)		S <sub>Z</sub> (mV/°C)	I <sub>Z</sub> (mA)	
	Min	Nom	Max				Max	I <sub>Z</sub> (mA)	Max	I <sub>Z</sub> (mA)			
MAZS100G0L	9.40	10.00	10.60	5	0.05	7.0	30	5	60	0.5	6.4	5	10 or 10 <sub>-</sub> or 10 <sup>-</sup> or 10 <sup>^</sup>
MAZS100GLL	9.44	9.70	9.92										10 <sub>-</sub>
MAZS100GML	9.75	10.00	10.25										10 <sup>-</sup>
MAZS100GHL	10.07	10.30	10.59										10 <sup>^</sup>
MAZS110G0L	10.40	11.00	11.60	5	0.05	8.0	30	5	60	0.5	7.4	5	11 or 11 <sub>-</sub> or 11 <sup>-</sup> or 11 <sup>^</sup>
MAZS110GLL	10.40	10.70	10.94										11 <sub>-</sub>
MAZS110GML	10.73	11.00	11.28										11 <sup>-</sup>
MAZS110GHL	11.05	11.30	11.60										11 <sup>^</sup>
MAZS120G0L	11.40	12.00	12.70	5	0.05	9.0	30	5	80	0.5	8.4	5	12 or 12 <sub>-</sub> or 12 <sup>-</sup> or 12 <sup>^</sup>
MAZS120GLL	11.40	11.70	11.96										12 <sub>-</sub>
MAZS120GML	11.73	12.00	12.33										12 <sup>-</sup>
MAZS120GHL	12.06	12.30	12.68										12 <sup>^</sup>
MAZS130G0L	12.40	13.00	14.10	5	0.05	10.0	35	5	80	0.5	9.4	5	13 or 13 <sub>-</sub> or 13 <sup>-</sup> or 13 <sup>^</sup>
MAZS130GLL	12.40	12.70	12.99										13 <sub>-</sub>
MAZS130GML	12.73	13.00	13.40										13 <sup>-</sup>
MAZS130GHL	13.25	13.70	14.08										13 <sup>^</sup>
MAZS150G0L	13.90	15.00	15.60	5	0.05	11.0	40	5	80	0.5	11.4	5	15 or 15 <sub>-</sub> or 15 <sup>-</sup> or 15 <sup>^</sup>
MAZS150GLL	13.90	14.30	14.76										15 <sub>-</sub>
MAZS150GML	14.60	15.00	15.35										15 <sup>-</sup>
MAZS150GHL	14.95	15.30	15.60										15 <sup>^</sup>
MAZS160G0L	15.30	16.00	17.10	5	0.05	12.0	50	5	80	0.5	12.4	5	16 or 16 <sub>-</sub> or 16 <sup>-</sup> or 16 <sup>^</sup>
MAZS160GLL	15.30	15.70	16.09										16 <sub>-</sub>
MAZS160GML	15.70	16.00	16.50										16 <sup>-</sup>
MAZS160GHL	16.26	16.70	17.10										16 <sup>^</sup>
MAZS180G0L	16.90	18.00	19.10	5	0.05	13.0	60	5	80	0.5	14.4	5	18 or 18 <sub>-</sub> or 18 <sup>-</sup> or 18 <sup>^</sup>
MAZS180GLL	16.90	17.30	17.76										18 <sub>-</sub>
MAZS180GML	17.55	18.00	18.45										18 <sup>-</sup>
MAZS180GHL	18.20	18.70	19.10										18 <sup>^</sup>
MAZS200G0L	18.80	20.00	21.20	5	0.05	15.0	80	5	100	0.5	16.4	5	20 or 20 <sub>-</sub> or 20 <sup>-</sup> or 20 <sup>^</sup>
MAZS200GLL	18.85	19.30	19.81										20 <sub>-</sub>
MAZS200GML	19.50	20.00	20.50										20 <sup>-</sup>
MAZS200GHL	20.15	20.70	21.19										20 <sup>^</sup>
MAZS220G0L	20.80	22.00	23.30	5	0.05	17.0	80	5	100	0.5	18.4	5	22 or 22 <sub>-</sub> or 22 <sup>-</sup> or 22 <sup>^</sup>
MAZS220GLL	20.80	21.30	21.86										22 <sub>-</sub>
MAZS220GML	21.45	22.00	22.55										22 <sup>-</sup>
MAZS220GHL	22.10	22.70	23.24										22 <sup>^</sup>
MAZS240G0L	22.80	24.00	25.60	5	0.05	19.0	100	5	120	0.5	20.4	5	24 or 24 <sub>-</sub> or 24 <sup>-</sup> or 24 <sup>^</sup>
MAZS240GLL	22.80	23.30	23.97										24 <sub>-</sub>
MAZS240GML	23.50	24.00	24.70										24 <sup>-</sup>
MAZS240GHL	24.35	25.00	25.60										24 <sup>^</sup>
MAZS270G0L	25.10	27.00	28.90	2	0.05	21.0	120	2	120	0.5	23.4	2	27 or 27 <sub>-</sub> or 27 <sup>-</sup> or 27 <sup>^</sup>
MAZS270GLL	25.30	26.00	26.70										27 <sub>-</sub>
MAZS270GML	26.30	27.00	27.70										27 <sup>-</sup>
MAZS270GHL	27.30	28.00	28.70										27 <sup>^</sup>
MAZS300G0L	28.00	30.00	32.00	2	0.05	23.0	160	2	160	0.5	26.6	2	30 or 30 <sub>-</sub> or 30 <sup>-</sup> or 30 <sup>^</sup>
MAZS300GLL	28.30	29.00	29.70										30 <sub>-</sub>
MAZS300GML	29.30	30.00	30.80										30 <sup>-</sup>
MAZS300GHL	30.20	31.00	31.80										30 <sup>^</sup>
MAZS330G0L	31.00	33.00	35.00	2	0.05	25.0	200	2	200	0.5	29.7	2	33 or 33 <sub>-</sub> or 33 <sup>-</sup> or 33 <sup>^</sup>
MAZS330GLL	31.20	32.00	32.80										33 <sub>-</sub>
MAZS330GML	32.20	33.00	33.80										33 <sup>-</sup>
MAZS330GHL	33.20	34.00	34.90										33 <sup>^</sup>

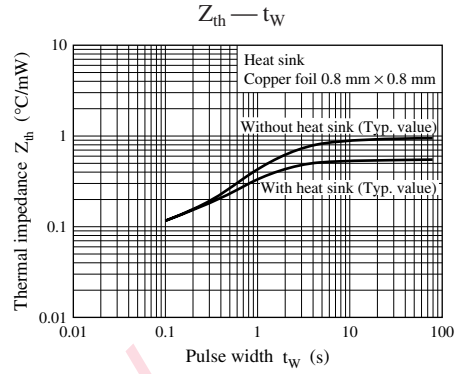
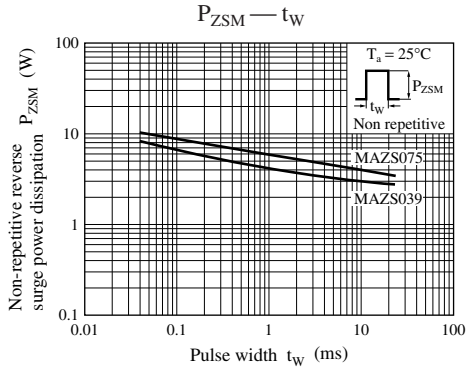
■ Electrical characteristics within part numbers (continued)  $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$ 

Part Number	Zener voltage				Reverse current		Zener operating resistance				Temperature coefficient of zener voltage		Marking symbol
	$V_Z$ (V)			$I_Z$ (mA)	$I_R$ ( $\mu\text{A}$ )		$R_Z$ ( $\Omega$ )		$R_{ZK}$ ( $\Omega$ )		$S_Z$ (mV/ $^\circ\text{C}$ )		
	Min	Nom	Max		Max	$V_R$ (V)	Max	$I_Z$ (mA)	Max	$I_Z$ (mA)	Typ	$I_Z$ (mA)	
MAZS360G0L	34.00	36.00	38.00	2	0.05	27.0	250	2	250	0.5	33.0	2	36 or 36_ or 36- or 36^
MAZS360GLL	34.10	35.00	35.90										36_
MAZS360GML	35.10	36.00	36.90										36-
MAZS360GHL	36.10	37.00	37.90										36^
MAZS390G0L	37.00	39.00	41.00	2	0.05	30.0	300	2	300	0.5	35.6	2	39 or 39_ or 39- or 39^
MAZS390GLL	37.10	38.00	39.00										39_
MAZS390GML	38.00	39.00	40.00										39-
MAZS390GHL	39.00	40.00	41.00										39^

Maintenance/Discontinued

Maintenance/Discontinued includes following four Product lifecycle stage.  
(planned maintenance type, maintenance type, planned discontinued typed, discontinued type)



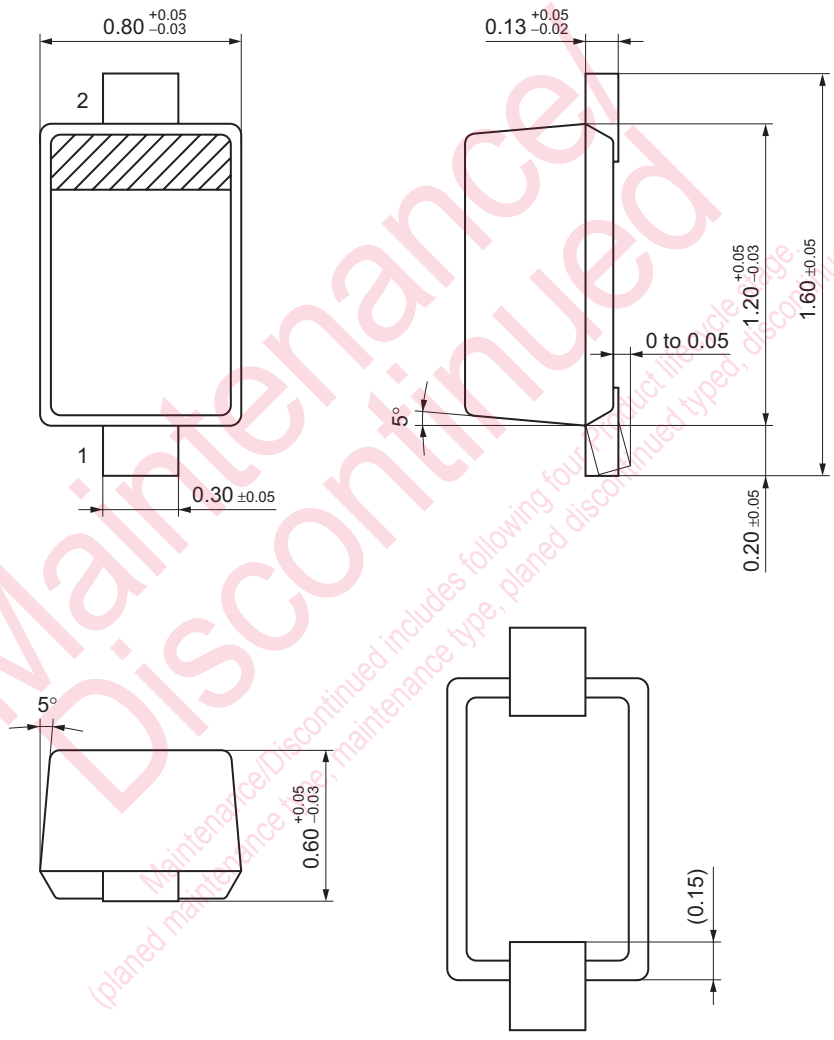


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(planned maintenance type, maintenance type, planned discontinued type, discontinued type)

SSMini2-F4

Unit: mm



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