

# MAZSxxxG Series

## Silicon planar type

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

### ■ Features

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

### ■ Package

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

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

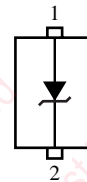
Parameter	Symbol	Rating	Unit
Repetitive peak forward current	$I_{FRM}$	200	mA
Total power dissipation *	$P_{tot}$	150	mW
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

Note) \*: With a printed circuit board

### ■ 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  $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$ 

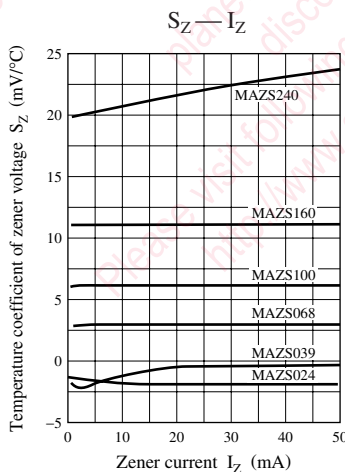
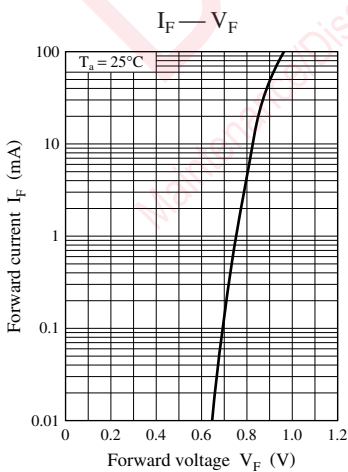
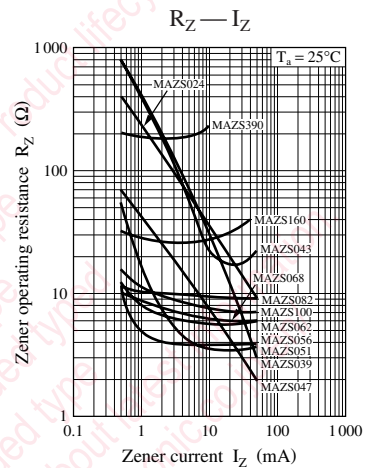
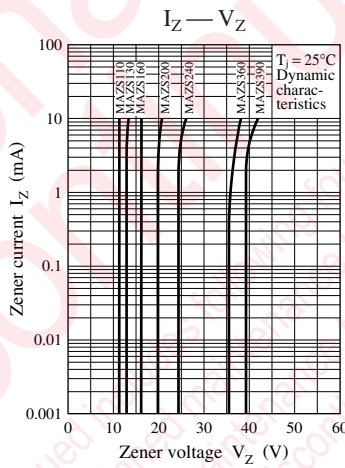
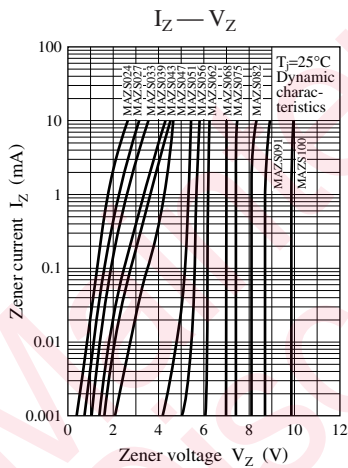
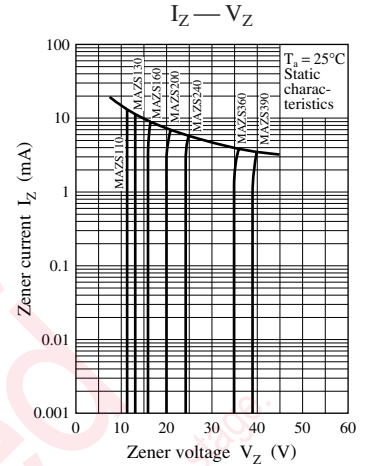
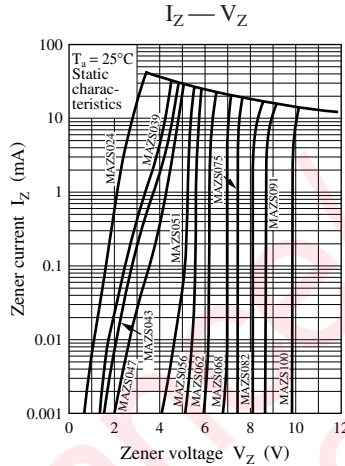
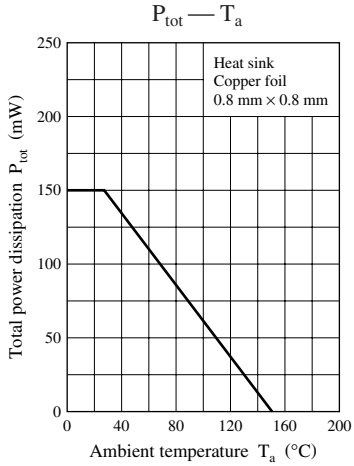
Part Number	Zener voltage $V_Z$ (V)				Reverse current $I_R$ ( $\mu\text{A}$ )		Zener operating resistance				Temperature coefficient of zener voltage $S_Z$ (mV/ $^\circ\text{C}$ )		Marking symbol
	Min	Nom	Max	$I_Z$ (mA)	Max	$V_R$ (V)	$R_Z$ ( $\Omega$ )		$R_{ZK}$ ( $\Omega$ )		Typ	$I_Z$ (mA)	
							Max	$I_Z$ (mA)	Max	$I_Z$ (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^									

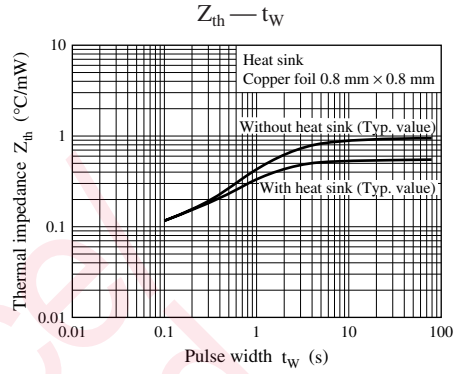
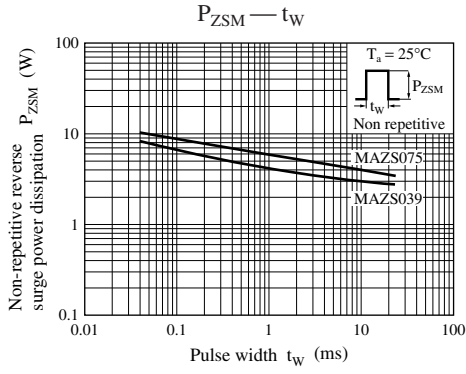
■ Electrical characteristics within part numbers (continued)  $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$ 

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

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

Part Number	Zener voltage $V_Z$ (V)				Reverse current $I_R$ ( $\mu\text{A}$ )		Zener operating resistance				Temperature coefficient of zener voltage $S_Z$ (mV/ $^\circ\text{C}$ )		Marking symbol
	Min	Nom	Max	$I_Z$ (mA)	Max	$V_R$ (V)	$R_Z$ ( $\Omega$ )		$R_{ZK}$ ( $\Omega$ )		Typ	$I_Z$ (mA)	
							Max	$I_Z$ (mA)	Max	$I_Z$ (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

includes following four Product lifecycle stage.

planned maintenance type

planned discontinued type

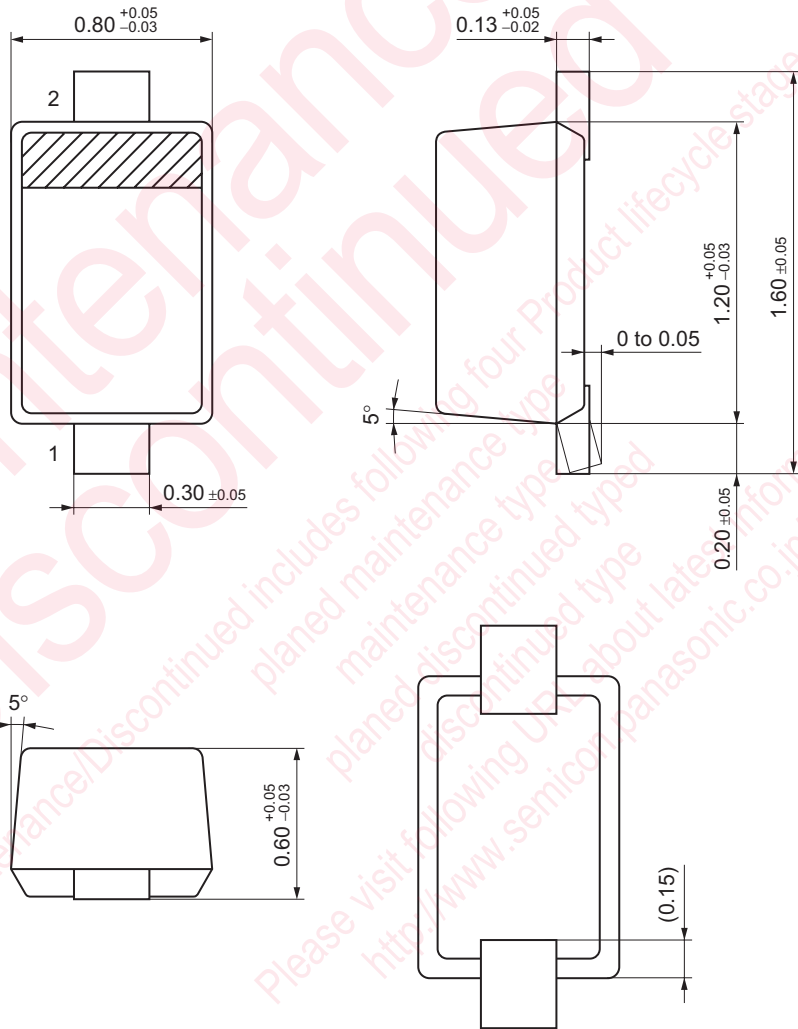
discontinued type

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SSMini2-F4

Unit: mm



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rmation described in this book.

standard applications or general electronic equipment (such as office  
and household appliances).

ng applications:

biles, traffic control equipment, combustion equipment, life support  
reliability are required, or if the failure or malfunction of the prod-

ck are subject to change without notice for modification and/or im-  
use of the products, therefore, ask for the most up-to-date Product  
atisfy your requirements.

bsolute maximum rating and the guaranteed operating conditions  
(.). Especially, please be careful not to exceed the range of absolute  
er-off and mode-switching. Otherwise, we will not be liable for any

take into the consideration of incidence of break down and failure  
n the systems such as redundant design, arresting the spread of fire  
al injury, fire, social damages, for example, by using the products.

own and characteristics change due to external factors (ESD, EOS,  
mounting or at customer's process. When using products for which  
shelf life and the elapsed time since first opening the packages.

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