

MALHxxxYG Series

Silicon planar type

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

■ Features

- Extremely low noise voltage caused from the diode
- Extremely good rising performance (in the low-current range)
- Independent wiring of two element

■ 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_T | 150 | mW |
| Junction temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -55 to +150 | $^\circ\text{C}$ |

Note) *: $P_T = 150$ mW achieved with a printed circuit board.

■ Package

- Code
SMini4-F2
- Pin Name

| | |
|------------|--------------|
| 1: Anode 1 | 3: Cathode 2 |
| 2: Anode 2 | 4: Cathode 1 |

■ Marking symbol

Refer to the list of the electrical characteristics within part numbers

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

| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|---|----------|-----------------------|---|-----|-----|----------------------|
| Forward voltage | V_F | $I_F = 10$ mA | | 0.9 | 1.0 | V |
| Zener voltage *1 | V_Z | I_Z Specified value | | | | V |
| Zener rise operating resistance | R_{ZK} | I_Z Specified value | Refer to the list of the electrical characteristics within part numbers | | | 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 *2 | S_Z | I_Z Specified value | | | | mV/ $^\circ\text{C}$ |

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

2. Absolute frequency of input and output is 5 MHz.

3. The temperature must be controlled 25°C for V_Z measurement.

V_Z value measured at other temperature must be adjusted to $V_Z (25^\circ\text{C})$

4. *1: V_Z guaranteed 20 ms after current flow.

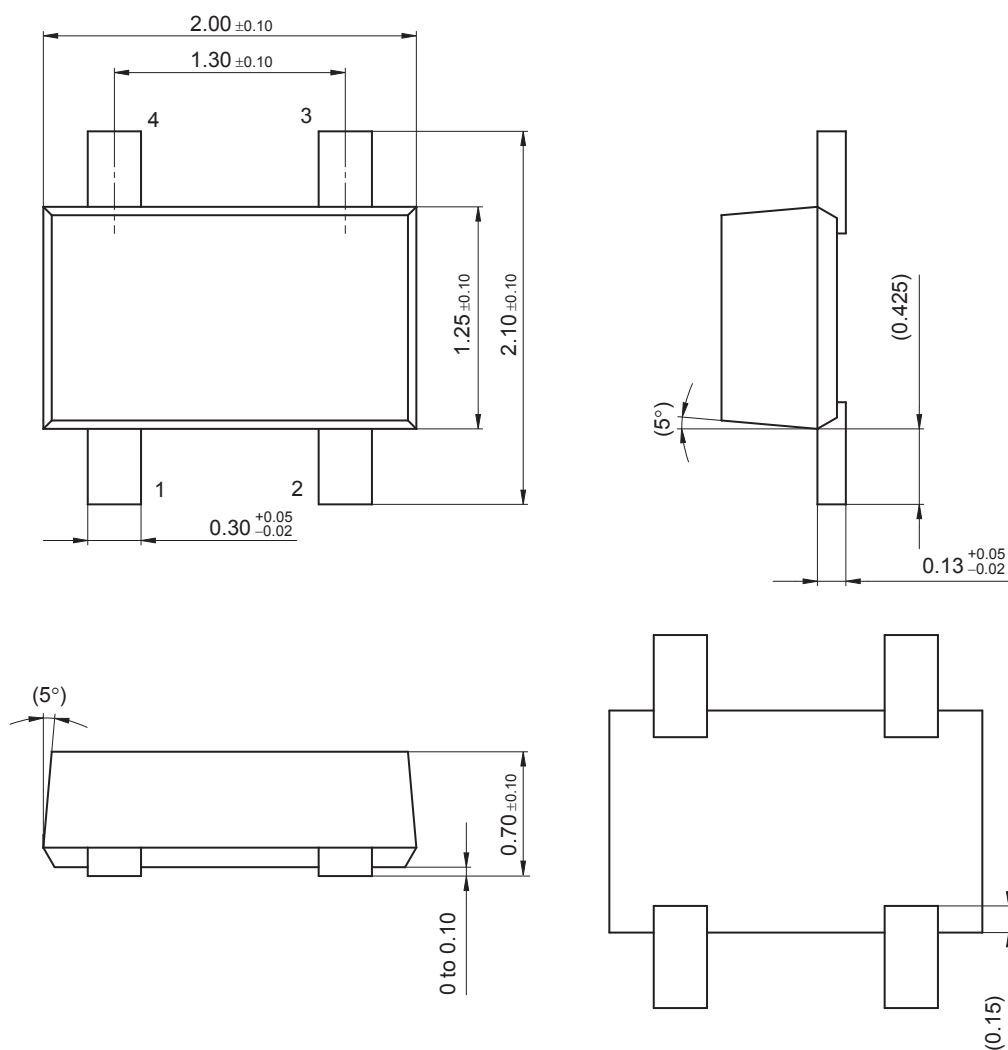
*2: $T_j = 25^\circ\text{C}$ to 150°C

■ 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 (μA) | | Zener operating resistance R_Z (Ω) | | Zener rise operating resistance R_{ZK} (Ω) | | Temperature coefficient of zener voltage S_Z (mV/ $^{\circ}\text{C}$) | | Marking symbol |
|-------------|----------------------------|-------|-------|------------|--|-----------|--|------------|--|------------|---|------------|----------------|
| | Min | Typ | Max | I_Z (mA) | Max | V_R (V) | Max | I_Z (mA) | Max | I_Z (mA) | Typ | I_Z (mA) | |
| MALH024YGL | 2.28 | 2.40 | 2.60 | 5 | 120 | 1.0 | 100 | 5 | | | -1.6 | 5 | 2.4 |
| MALH027YGL | 2.50 | 2.70 | 2.90 | 5 | 120 | 1.0 | 110 | 5 | | | -2.0 | 5 | 2.7 |
| MALH030YGL | 2.80 | 3.00 | 3.20 | 5 | 50 | 1.0 | 120 | 5 | | | -2.1 | 5 | 3.0 |
| MALH033YGL | 3.10 | 3.30 | 3.50 | 5 | 20 | 1.0 | 130 | 5 | | | -2.4 | 5 | 3.3 |
| MALH036YGL | 3.40 | 3.60 | 3.80 | 5 | 10 | 1.0 | 130 | 5 | | | -2.4 | 5 | 3.6 |
| MALH039YGL | 3.70 | 3.90 | 4.10 | 5 | 10 | 1.0 | 130 | 5 | | | -2.5 | 5 | 3.9 |
| MALH043YGL | 4.00 | 4.30 | 4.60 | 5 | 10 | 1.0 | 130 | 5 | | | -2.5 | 5 | 4.3 |
| MALH047YGL | 4.40 | 4.70 | 5.00 | 5 | 2 | 1.0 | 80 | 5 | 800 | 1 | -1.4 | 5 | 4.7 |
| MALH051YGL | 4.80 | 5.10 | 5.40 | 5 | 1 | 2.0 | 60 | 5 | 500 | 1 | -0.8 | 5 | 5.1 |
| MALH056YGL | 5.30 | 5.60 | 6.00 | 5 | 0.5 | 2.5 | 40 | 5 | 200 | 0.5 | 1.2 | 5 | 5.6 |
| MALH062YGL | 5.80 | 6.20 | 6.60 | 5 | 0.2 | 4.0 | 30 | 5 | 100 | 0.5 | 2.3 | 5 | 6.2 |
| MALH068YGL | 6.40 | 6.80 | 7.20 | 5 | 0.1 | 4.0 | 20 | 5 | 60 | 0.5 | 3 | 5 | 6.8 |
| MALH075YGL | 7.00 | 7.50 | 7.90 | 5 | 0.1 | 5.0 | 20 | 5 | 60 | 0.5 | 4 | 5 | 7.5 |
| MALH082YGL | 7.70 | 8.20 | 8.70 | 5 | 0.1 | 5.0 | 20 | 5 | 60 | 0.5 | 4.6 | 5 | 8.2 |
| MALH091YGL | 8.50 | 9.10 | 9.60 | 5 | 0.1 | 6.0 | 20 | 5 | 60 | 0.5 | 5.5 | 5 | 9.1 |
| MALH100YGL | 9.40 | 10.00 | 10.60 | 5 | 0.05 | 7.0 | 30 | 5 | 60 | 0.5 | 6.4 | 5 | 10 |
| MALH110YGL | 10.40 | 11.00 | 11.60 | 5 | 0.05 | 8.0 | 30 | 5 | 60 | 0.5 | 7.4 | 5 | 11 |
| MALH120YGL | 11.40 | 12.00 | 12.70 | 5 | 0.05 | 9.0 | 30 | 5 | 80 | 0.5 | 8.4 | 5 | 12 |
| MALH130YGL | 12.40 | 13.00 | 14.10 | 5 | 0.05 | 10.0 | 35 | 5 | 80 | 0.5 | 9.4 | 5 | 13 |
| MALH150YGL | 13.90 | 15.00 | 15.60 | 5 | 0.05 | 11.0 | 40 | 5 | 80 | 0.5 | 11.4 | 5 | 15 |
| MALH160YGL | 15.30 | 16.00 | 17.10 | 5 | 0.05 | 12.0 | 50 | 5 | 80 | 0.5 | 12.4 | 5 | 16 |
| MALH180YGL | 16.90 | 18.00 | 19.10 | 5 | 0.05 | 13.0 | 60 | 5 | 80 | 0.5 | 14.4 | 5 | 18 |
| MALH200YGL | 18.80 | 20.00 | 21.20 | 5 | 0.05 | 15.0 | 80 | 5 | 100 | 0.5 | 16.4 | 5 | 20 |
| MALH220YGL | 20.80 | 22.00 | 23.30 | 5 | 0.05 | 17.0 | 80 | 5 | 100 | 0.5 | 18.4 | 5 | 22 |
| MALH240YGL | 22.80 | 24.00 | 25.60 | 5 | 0.05 | 19.0 | 100 | 5 | 120 | 0.5 | 20.4 | 5 | 24 |
| MALH270YGL | 25.10 | 27.00 | 28.90 | 2 | 0.05 | 21.0 | 120 | 2 | 120 | 0.5 | 23.4 | 2 | 27 |
| MALH300YGL | 28.00 | 30.00 | 32.00 | 2 | 0.05 | 23.0 | 160 | 2 | 160 | 0.5 | 26.6 | 2 | 30 |
| MALH330YGL | 31.00 | 33.00 | 35.00 | 2 | 0.05 | 25.0 | 200 | 2 | 200 | 0.5 | 29.7 | 2 | 33 |
| MALH360YGL | 34.00 | 36.00 | 38.00 | 2 | 0.05 | 27.0 | 250 | 2 | 250 | 0.5 | 33 | 2 | 36 |
| MALH390YGL | 37.00 | 39.00 | 41.00 | 2 | 0.05 | 30.0 | 300 | 2 | 300 | 0.5 | 35.6 | 2 | 39 |

SMini4-F2

Unit: mm



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