

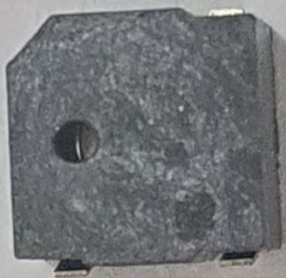


soberton inc.

ELECTRO
MAGNETIC
BUZZER

Acoustic Product Specification

Product Number: ST-0503T



Release | Revision: A / 2026

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Specifications

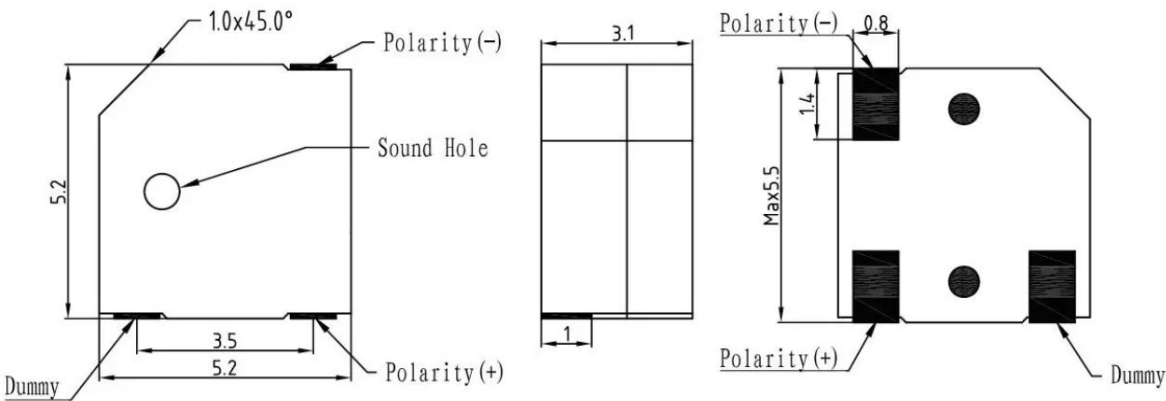
Item	Unit	Specifications
Rated Voltage	Vo-p	3
Operating Voltage	Vo-p	2 ~ 5
Rated Current	mA	Max.100 at 4.0KHz 50% duty cycle, square wave, 3 Vo-p
Sound Output	dB	Min. 80 at 4.0KHz 50% duty cycle, square wave, 3 Vo-p
Coil Resistance	Ω	12±2
Resonant Frequency	Hz	4000
Operating Temperature	℃	-30 ~ +70
Storage Temperature	℃	-40 ~ +85
Dimensions	mm	5.2 x 5.2 xH3.1
Housing Material		Black LCP
Net Weight	gram	Approx. 0.3
Environmental Protection Regulation		RoHS 2.0

Test Condition:

Temperature: 5~35℃ Humidity: 45%~85%R.H Atmospheric Pressure: 860 ~1060hPa

Dimensions

Unit: mm
Tolerance: ±0.3mm Except where specified



Housing Material: Black LCP
Terminal Plate: 3 soldering pads, Tin Plating Brass

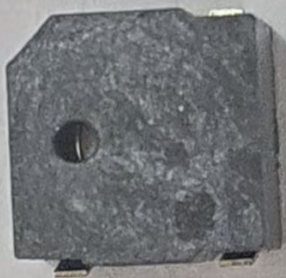


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Reliability Tests

After any of the following tests the part shall meet specifications without any degradation in appearance and performance except SPL. SPL shall meet the specifications and shall not deviate more than -10 dB from the initial value.

Standard Temperature Life Test

The part shall be subjected to 96 hours at 25±10°C.

Input rated voltage: 3 Vo-p

Resonant frequency : 4000Hz, 50% duty cycle, square wave.

High Temperature Test

The part shall be capable of withstanding a storage temperature of +80°C for 96 hours.

Low Temperature Test

The part shall be capable of withstanding a storage temperature of -30°C for 96 hours.

Humidity Test

Temperature +40°C±3°C

Relative Humidity 90% ~ 95%

Duration 48 hours and exposure to room temperature for 6 hours

Temperature Shock Test

Per cycle
60°C/1hour → 25°C/3hours → -20°C/1hour → 25°C/3hours

Total cycle 10 cycles

Drop Test

Standard packaging from 75cm

Drop on hardwood or board of 5cm thick, three sides, six plain.

Vibration Test

Vibration 1000 cycles/min.

Amplitude 1.5mm

Duration 1 hour in each 3 axes

Reflow Test

- Use recommended reflow soldering condition
1. No abnormality should be found after reflow
 2. Good soldering to meet soldering requirements

Note

Please make sure that any foreign materials (e.g. magnetic powder, washing solvent, flux, corrosive gas) do not enter the part during the production processes. Contamination may result in a loss of some or all audio output.

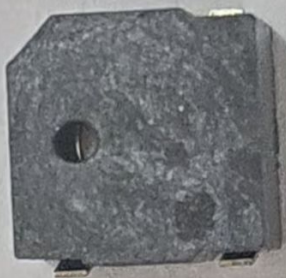


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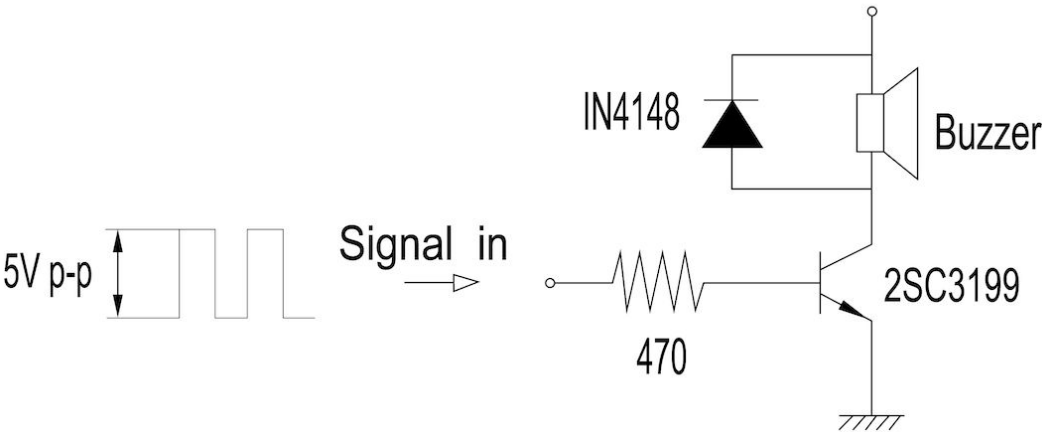
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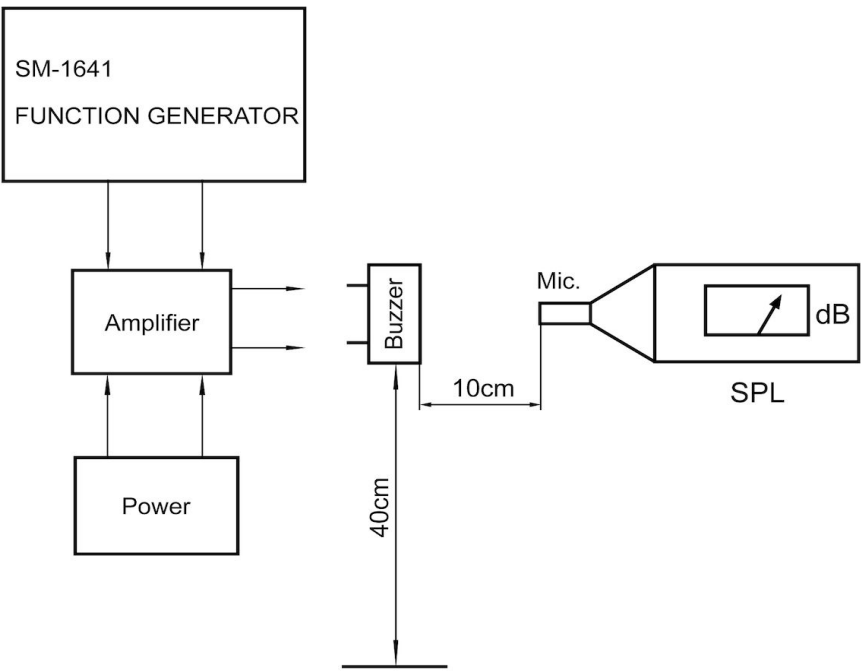
Electrical And Acoustical Measuring Condition

Recommended Driving Circuit

Resonant frequency, 50% duty cycle, Square wave. Signal amplitude should be large enough to saturate the transistor.

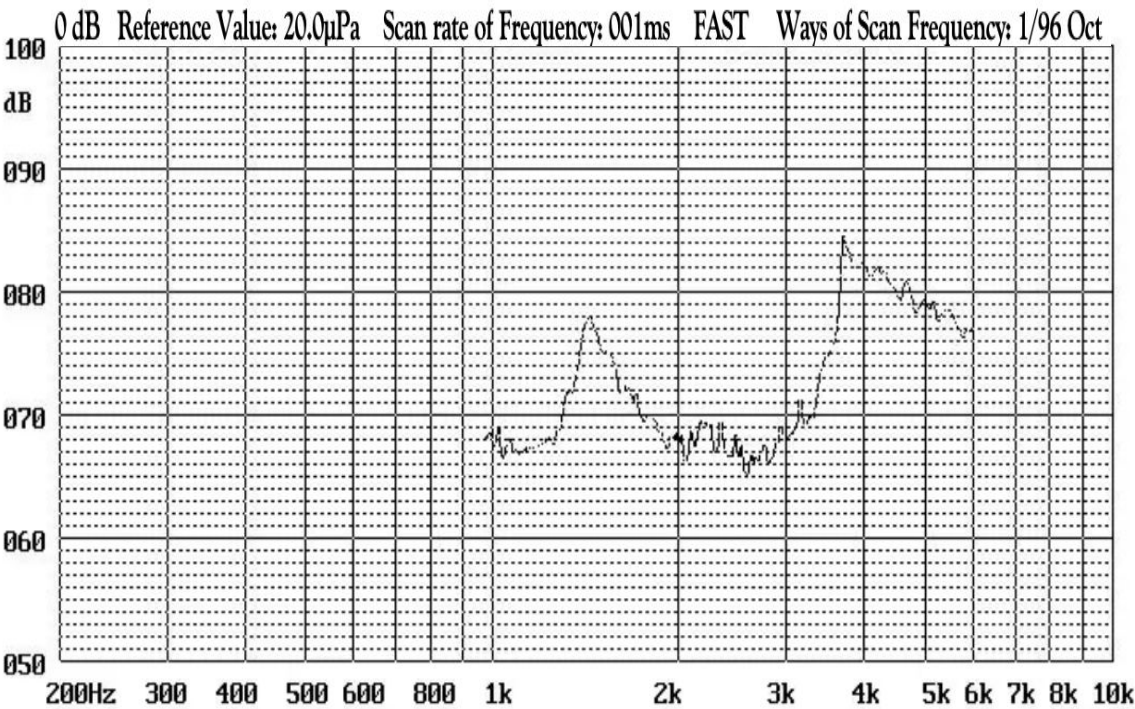


Recommended Setting



Typical Frequency Response Curve

3.0Vo-p, 50% duty cycle, square wave, 10cm





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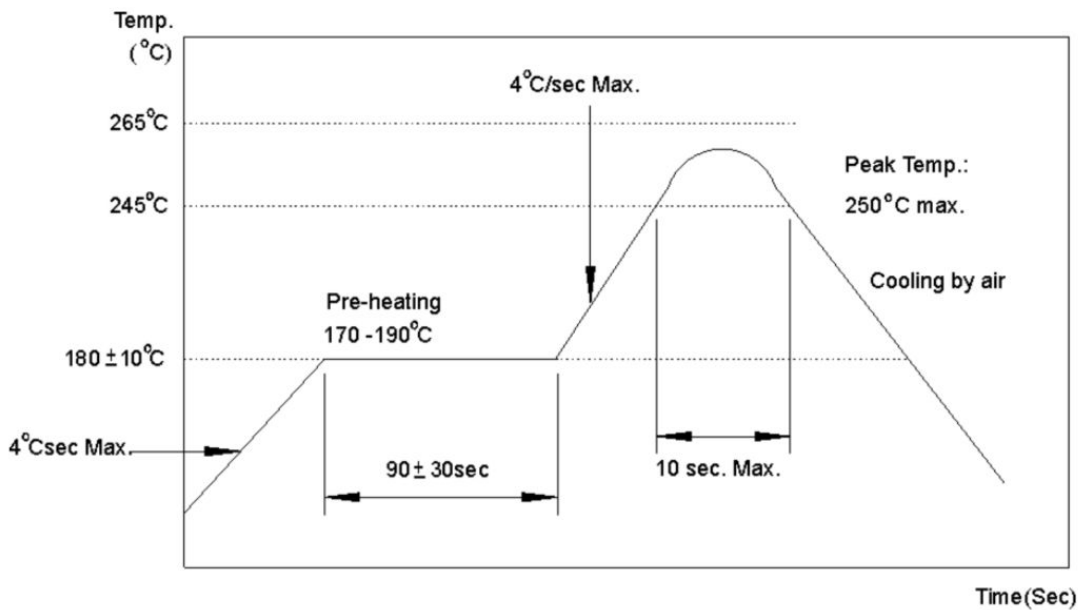
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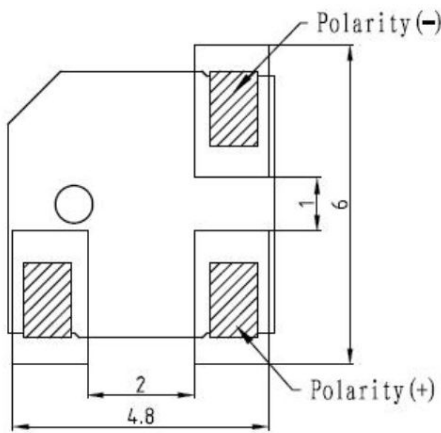
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Reflow soldering
Recommendable reflow soldering condition is as follows.



- Note
1. In automated mounting of the SMD sound transducers on PCB, any bending, expanding or pulling forces, or shocks against the SMD sound transducers should be kept to a minimum to prevent them from electrical failures and mechanical damage of the devices.
 2. In the reflow soldering, soldering temperatures that are above specification and extreme gradients such as rapid heating or cooling may cause electrical failures and mechanical damage to the devices.

Soldering Pattern



Terminal Plate: 3 Soldering Pads, Tin Plating Brass



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