

## SMB SERIES



### INTRODUCTION

Audible signals are part of our daily life. More sophisticated and distinctive functions are required for industrial purposes. The choice of the frequencies is simply done by changing the capacitor value in a C-MOS driven circuit.

Our SMB-series (multi-frequency buzzers) offer the possibility to program several different frequencies. These audible signals with multi-frequency programmability will become an important component that must be considered in every design of equipment, machines, household equipment, computers, communication equipment, control panels, etc.

### ADVANTAGES & APPLICATIONS

#### ADVANTAGES :

- Low cost
- Solid state reliability
- No EMC
- Very low current consumption
- Panel and PCB mountable
- Free programmable
- Easy integration in existing circuits
- Small dimensions
- Thin profile

#### APPLICATIONS :

- Automobiles & trucks
- Trains
- Office equipment
- Telephone equipment
- Toys & games
- Clocks & timers
- Alarms
- Instrumentation
- Control panels
- Medical equipment
- Video conference system
- Answering machine
- Automatic door



## SPECIFICATIONS

All three multi-frequency buzzers have several peak frequencies, either producing alerting tones at high frequencies or soft signals at low frequencies down to 100 Hz (see the typical application description). The diversity in use of the three models is limited only by your imagination. The current consumption is extremely low and starts @ only 100  $\mu$ A with a maximum of 4.8 mA @ maximum 15 Vdc.

Model	SPL (dB(A))	Frequency ( $\pm 15\%$ Hz)	Peak frequencies SPL **	Operating voltage (Vdc)	*Operating current (mA)	Weight (g)
SMB-17CC	See graph	See graph	2250 Hz-79 dB(A) 1670 Hz-71 dB(A) 785 Hz-69 dB(A) 325 Hz-64 dB(A)	1.5 to 15	0.2 to 1.4	2
SMB-32CC	See graph	See graph	2250 Hz-76 dB(A) 1260 Hz-89 dB(A) 785 Hz-68 dB(A) 325 Hz-66 dB(A)	1.5 to 15	0.2 to 2.7	8

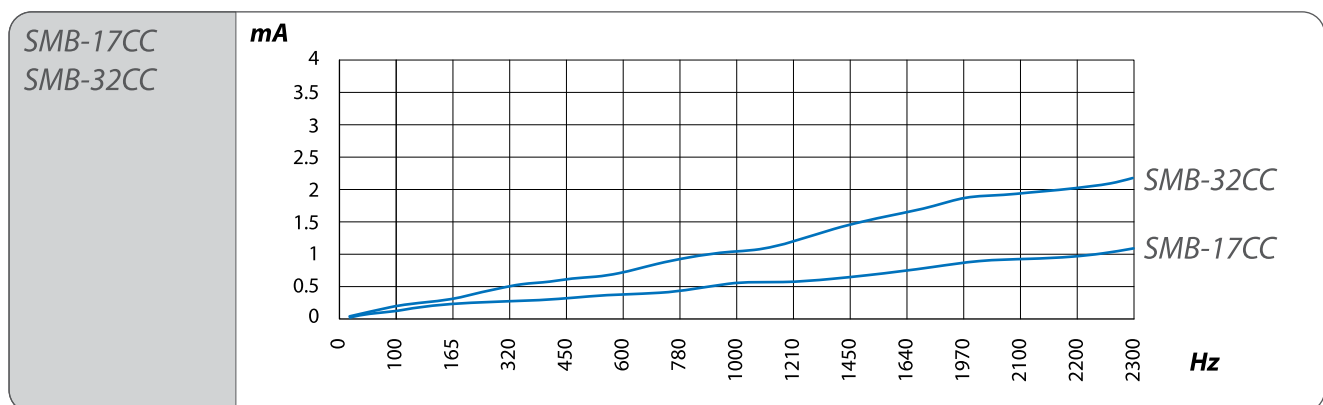
Operating temperature	-40°C to +85°C
Storage temperature	-40°C to +85°C
Life time (@ 21°C)	See life time cycle in addendum
Case material	PBT (UL rating: 94 HB) for pin-versions PPS (UL rating: 94 V0/5V) for SMD-versions
Standard colour of case	Black

\* The current consumption decreases when the frequency is lowered. See graph 'Current consumption vs. Frequency'.

\*\* The given sound pressure values are measured @ 12 Vdc @ 30 cm distance in free air and have an accuracy of  $\pm 15\%$ . Default factory setting of the SMB models: continuous tone

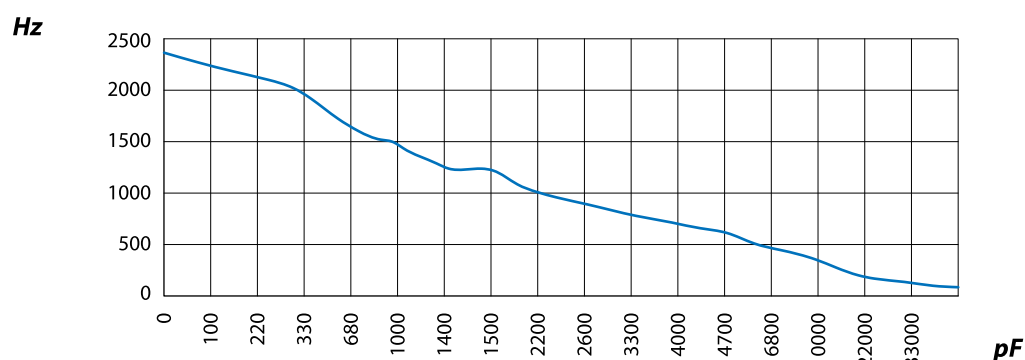
## ELECTRICAL PARAMETERS

### Current consumption vs. frequency



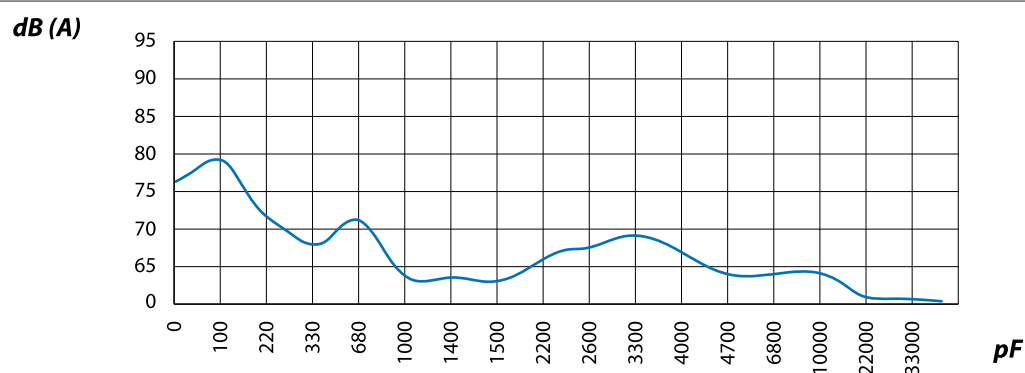
All measurements are made in free air @ 21°C @ 30 cm @ 12 Vdc.

## Frequency vs. external capacitor (c)

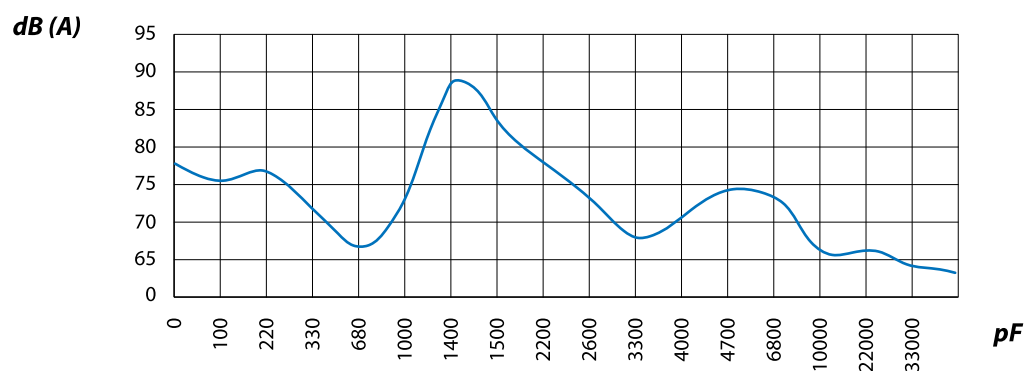
SMB-17CC  
SMB-32CC

## Sound pressure level vs. external capacitor (c)

SMB-17CC



SMB-32CC



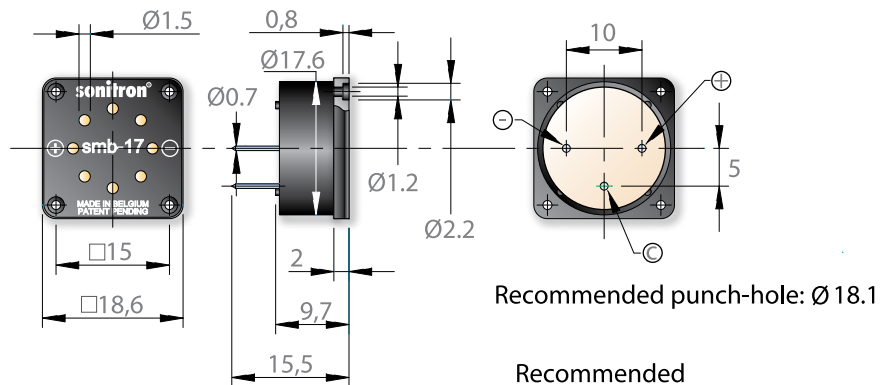
All measurements are made in free air @ 21°C @ 30 cm @ 12 Vdc.

## PRODUCT OPTIONS

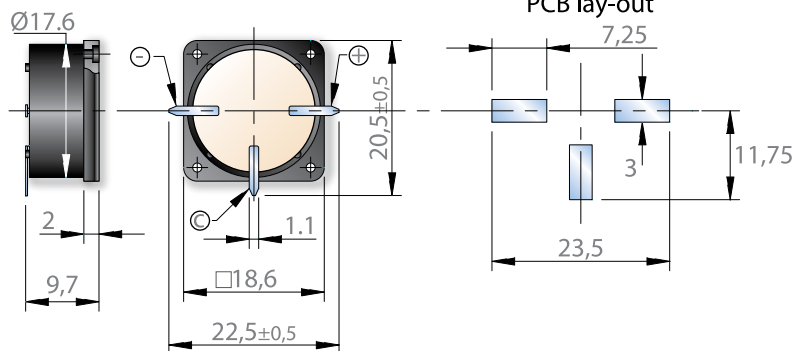
Option Code	example	Description
<b>FP13</b>	SMB-17CC-P10- <b>FP</b>	Acoustic stabilization Foam Patch, easy to stick. For: SMB-17CC-P10
<b>FP24</b>	MB-32CC-S- <b>FP</b>	Acoustic stabilization Foam Patch, easy to stick. For: SMB-32CC-P10 SMB-32CC-S

## DIMENSIONS (All dimensions are in mm)

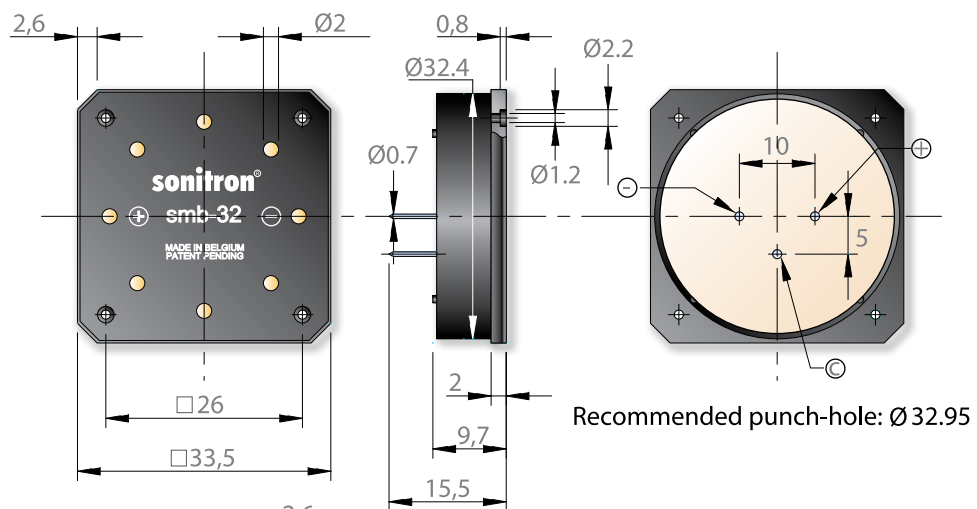
### SMB-17 CC P10



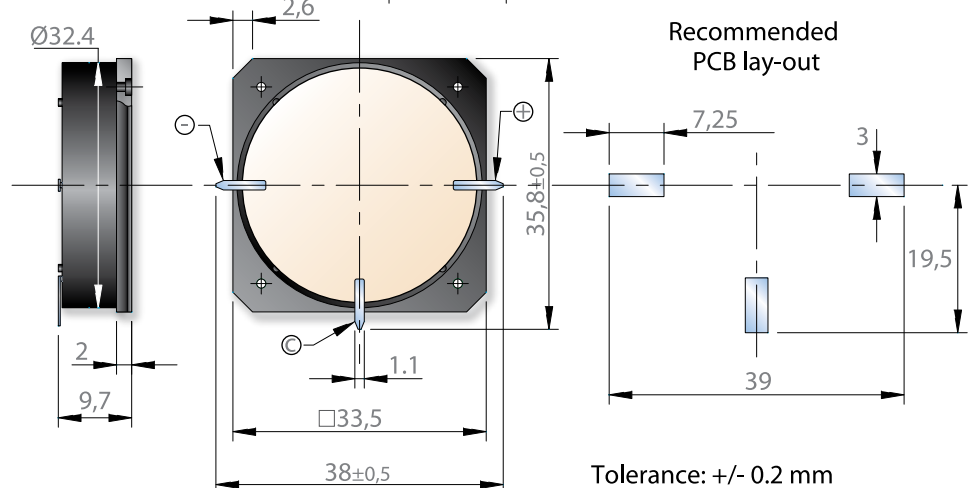
### SMB-17 CC S



### SMB-32 CC P10

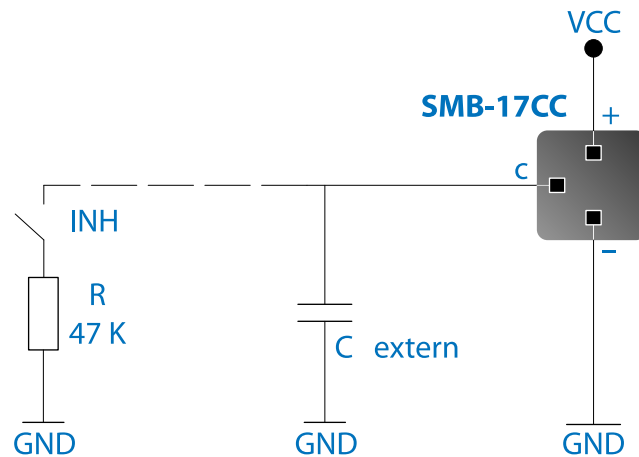


### SMB-32 CC S



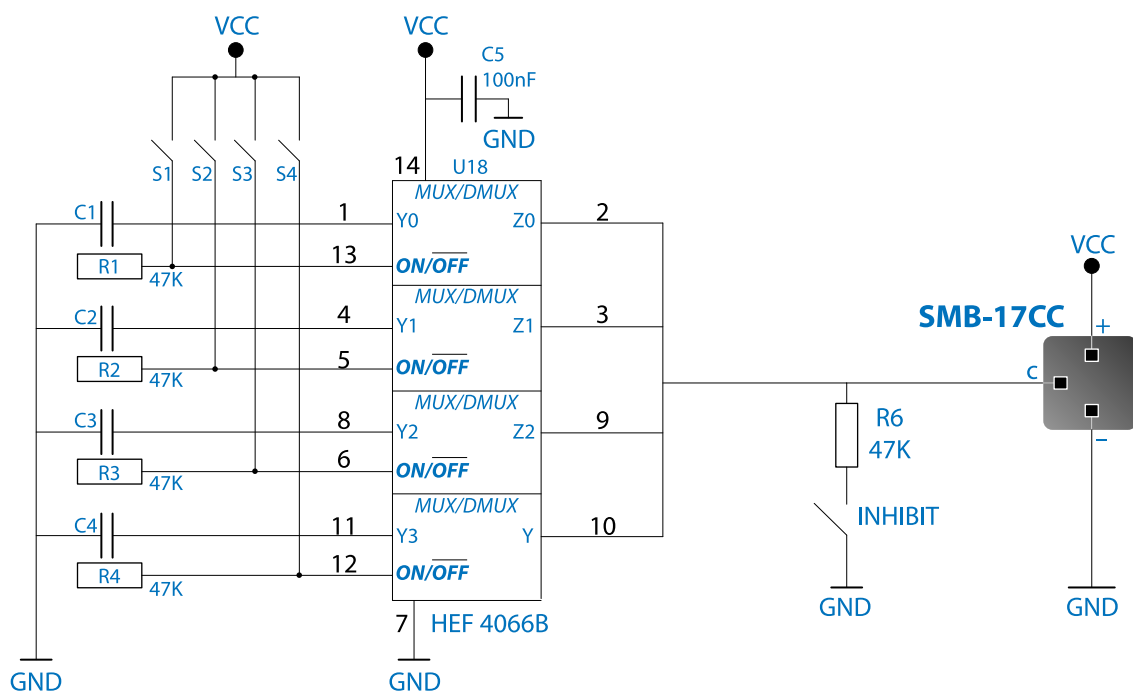
## WORKING PRINCIPLE

In order to realise different frequencies with the SMB multi-frequency buzzers, the customer should simply connect a capacitor between the control pin and the ground. It is also possible to disable the SMB, by putting a resistor (47K) to the ground (INHIBIT).








## TYPICAL APPLICATION DESCRIPTION

With the circuit shown below, 16 possible frequencies can be generated. The values of C1, C2, C3, ... with their respective frequencies are given in the graph 'Frequency vs. external capacitor'.



*This typical application description is not limited to the typical components we have illustrated. Many other possibilities exist to select and switch the capacitors and/or the resistor.*

## PRODUCT CODIFICATION

<b>SMB</b>  <b>Sonitron</b> <b>Multi-Frequency</b> <b>Buzzer</b>	<b>17</b> <b>32</b>  Square diameter (mm)	<b>C</b>  <b>C-MOS</b>	<b>C</b>  <b>Control pin</b>	<b>P10</b> <b>S</b>  <b>P:</b> Pin distance (in mm) <b>S:</b> SMD terminals
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## LIST OF AVAILABLE PRODUCT TYPES

SMB-17CC P10  
SMB-17CC S

SMB-32CC P10  
SMB-32CC S

## PACKAGING

All multi-frequency buzzers with through hole pins, are packed on a polystyrene board (245 L x 245 W) and sold in boxes with dimensions of 250 L x 250 W x 125 H.

Number	SMB-17CC P10	SMB-32CC P10
per board	100	49
per box	(5x100) 500	(5x49) 245

All SMD models are packed in trays (245 L x 245 W) and sold in boxes with dimensions of 250 L x 250 W x 125 H.

Number	SMB-17CC S	SMB-32CC S
per tray	49	25
per box	(8x49) 392	(6x25) 150

Dimensions of the tray and position of the SMD components of the models SMB-17CC S and SMB-32CC S are illustrated below:

