

## SMA SERIES



The Sonitron Multi-Application buzzers are low cost commercial grade components for large volume applications. The SMA series are designed to meet various requirements such as current consumption, voltage, sound pressure, mounting methods, connection, dimensions and packaging. They are available in five sizes: 13 mm, 17 mm, 21 mm, 24 mm and 30 mm. The buzzers have a built-in oscillator generating their working frequency. They produce a highly reliable audible tone signal, giving either an extremely clear and penetrating tone or a soft sound for non-aggressive signals.

## ADVANTAGES & APPLICATIONS

### ADVANTAGES :

- Octagonal form
- Models with different pin pitches
- Light but solid state construction
- Little power consumption, especially the Extra loud LC-versions
- Wide voltage range (1,5V to 24V)
- Easy mountable
- SMA-13 and SMA-17 for applications with limited space
- SMD models with heat resistant label for protection during automatic soldering
- Automatic pick & place

### APPLICATIONS :

- Automatic doors
- Alarms
- Gas & metal detectors
- Weighing & measuring equipment
- Medical instrumentation
- Timers & clocks
- Control instrumentation & systems
- Copiers
- Automobiles & trucks
- Games & toys
- Computer peripherals
- Cash registers

## SPECIFICATIONS

Model	SPL * (dB(A))	Frequency (+/-15%) Hz	Operating Voltage (min.-max.)	Operating current (mA)	Weight (g)
SMA-13	75	3000	1.5 to 24	1.8	1
SMA-13LT	82	3000	1.5 to 15	11.6	1
SMA-13LC	81	3000	1.5 to 15	0.7	1
SMA-17	82	3000	1.5 to 24	3.3	2
SMA-17L	88	3000	1.5 to 24	5	2
SMA-17LT	86	3000	1.5 to 15	15	2
SMA-17LC	89	3500	1.5 to 15	0.8	2
SMA-21	85	3300	1.5 to 24	3.8	2.5
SMA-21L	91	3300	1.5 to 24	5	2.5
SMA-21LT	90	3300	1.5 to 15	12.5	2.5
SMA-21LC	91	3800	1.5 to 15	1.1	2.5
SMA-21LV	87 @ 3V	3000	2 to 6	13 @ 3V	2.5
SMA-24	92	3000	1.5 to 24	4.2	4
SMA-24L	98	3000	1.5 to 15	6.7	4
SMAI-24	92	**3500	5 to 24	6.2	4
SMA-30	87	2500	1.5 to 24	4.1	5
SMA-30L	97 @ 9V	2500	3 to 9	5 @ 9V	5

\* All measurements are made in free air @ 21°C @ 30cm @ 12Vdc (Except for the SMA-21LV & SMA-30 L). Buzzers soldered on a PCB board with dimensions of 24cmx11cm.

\*\* SMAI 24: intermittent pulse rate of 5Hz (@ 15Vdc). All the other models have a continuous tone.

Operating temperature	-20°C to +70°C
Storage temperature	-40°C to +85°C
Life time (@ 21°C)	See expected life time curve in addendum
Case material	ABS (UL rating: 94 HB) for pin-versions, SMA-13/21/30 PBT (UL rating: 94 HB) for pin versions, SMA-17/24 PPS (UL rating: 94 V0/5V) for SMD-versions, SMA-13/17/21/24/30
Standard colour of case	Grey

## ELECTRICAL PARAMETERS

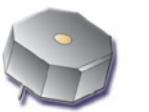
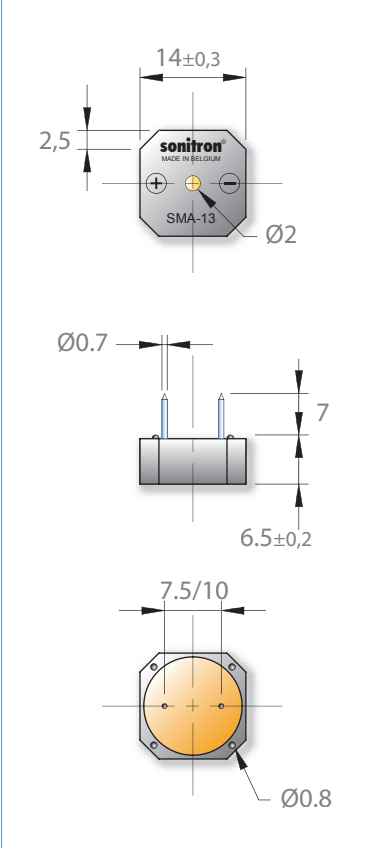
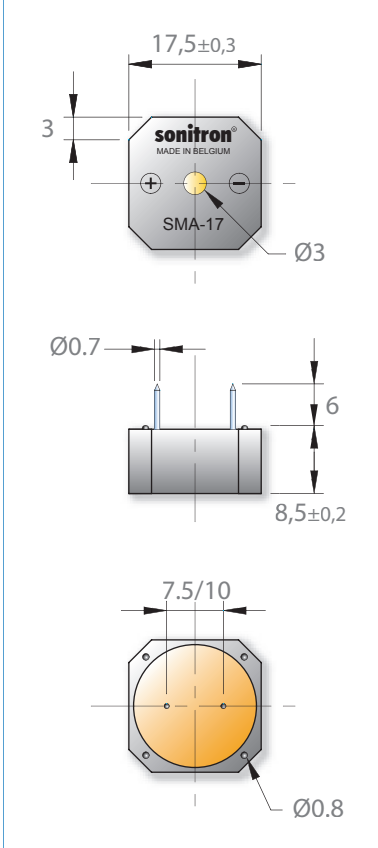
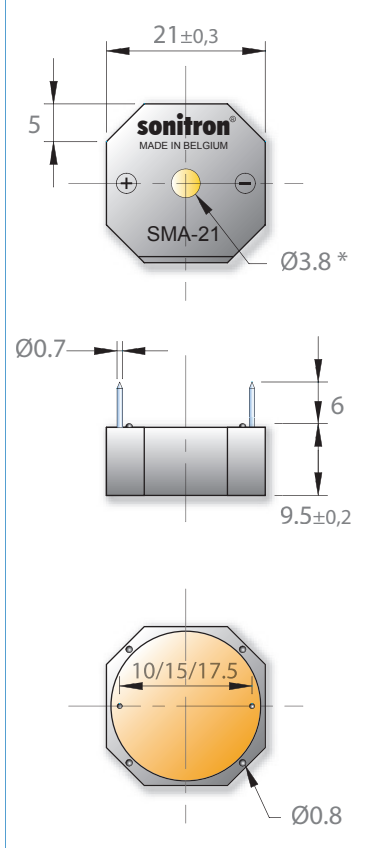

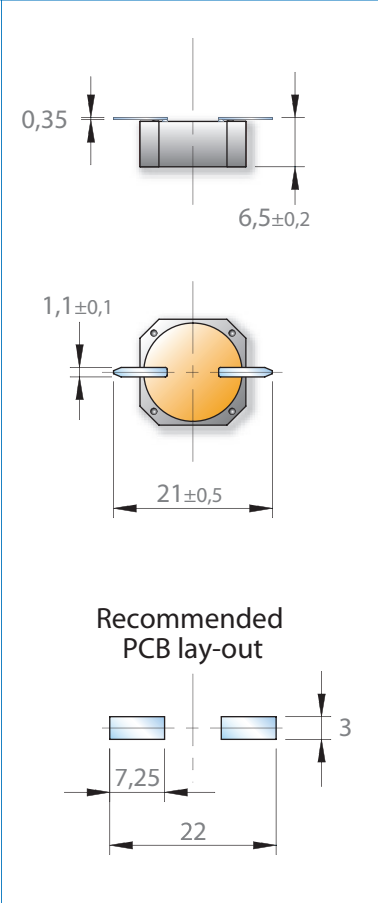
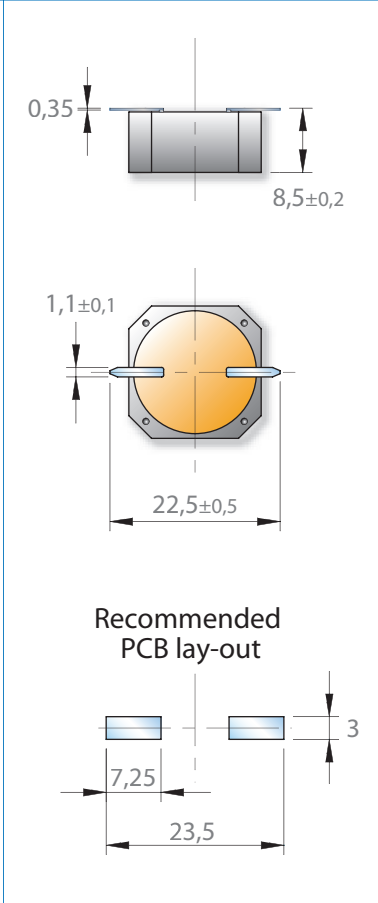
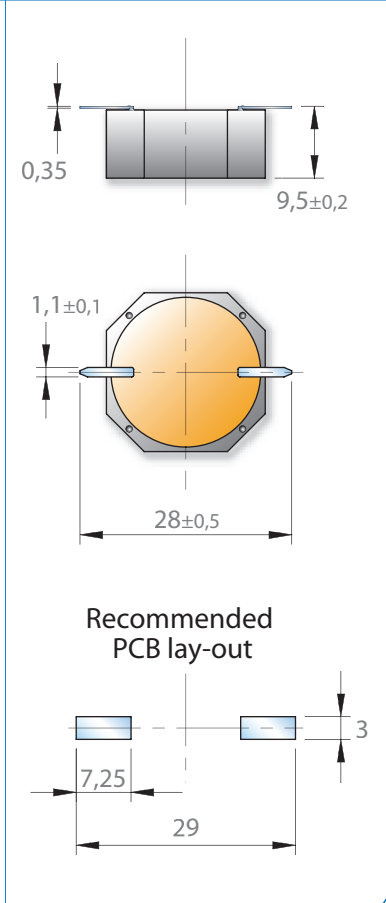
Models	Sound pressure level vs. operating voltage	Current consumption vs. operating voltage
<b>SMA-13</b>	<p><b>dB (A)</b></p>	<p><b>mA</b></p>
<b>SMA-17</b>	<p><b>dB (A)</b></p>	<p><b>mA</b></p>

All measurements are made @ 30 cm in free air @ 21°C.  
 ∞∞: standard versions, respectively SMA-13, SMA-17.

Models	Sound pressure level vs. operating voltage	Current consumption vs. operating voltage
SMA-21	<p><b>dB (A)</b></p>	<p><b>mA</b></p>
SMA-24	<p><b>dB (A)</b></p>	<p><b>mA</b></p>
SMA-30	<p><b>dB (A)</b></p>	<p><b>mA</b></p>

All measurements are made @ 30 cm in free air @ 21°C.  
 ∞: standard versions, respectively SMA-21, SMA-24, SMA-30.

**DIMENSIONS** (All dimensions are in mm)

Pin version	SMA-13	SMA-17	SMA-21
			
			

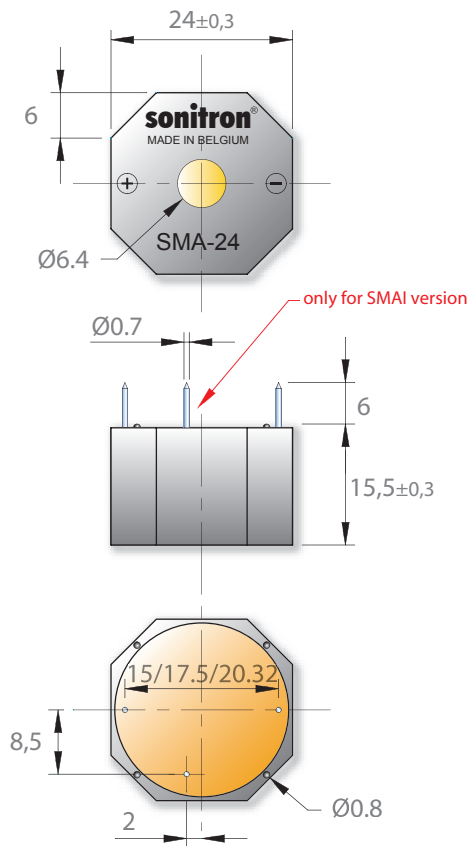
\* The sound hole of SMA-21 LV has a diameter of 3 mm, whereas the other SMA-21 types have a 3,8 mm sound hole.

(All dimensions are in mm)

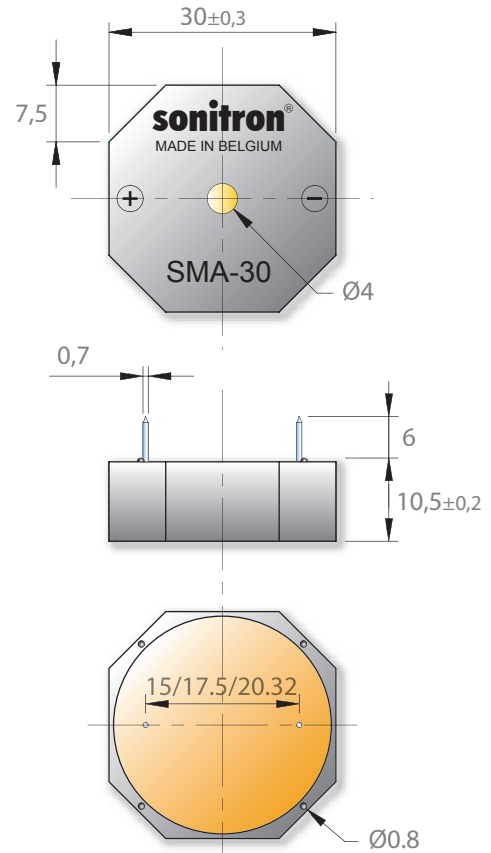
Pin version



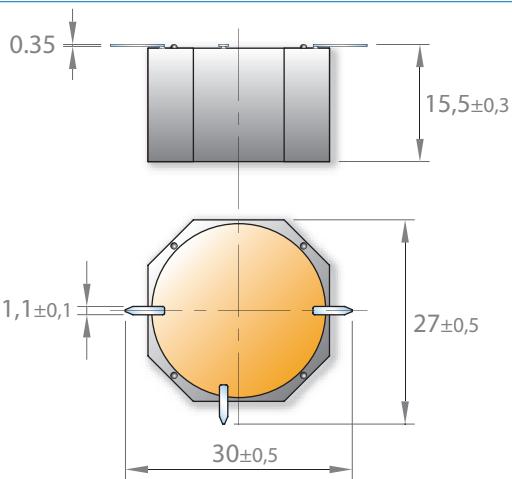
SMA-24



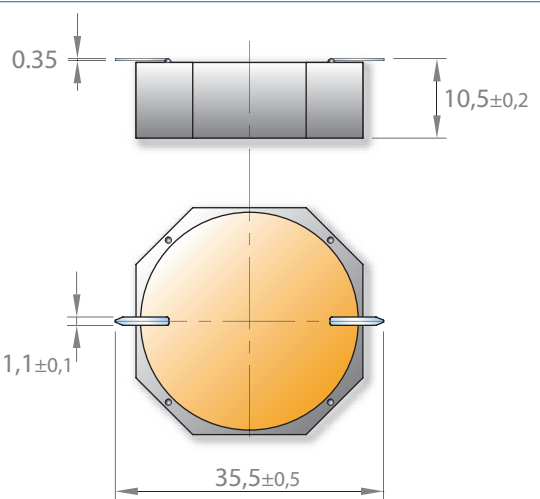
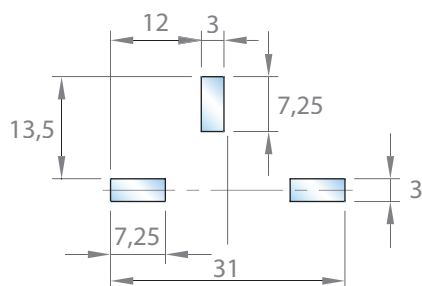
SMA-30



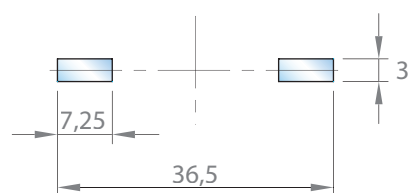
SMD version



Recommended PCB lay-out



Recommended PCB lay-out



## PRODUCT CODIFICATION

SMA	I	-	13 17 21 24 30	L LV	C T	P7.5 P10 P15 P17.5 P20.32 S
↓ Sonitron Multi- Application	↓ Intermittent		↓ Square diameter (mm)	↓ L: Loud LV: Low voltage	↓ C: C-MOS T: Transistor	↓ P: Pin distance (in mm) S: SMD terminals

## LIST OF AVAILABLE PRODUCT TYPES

Version	Standard (°°)	Loud (L)	Transistor (LT)	Low Current (LC)	Intermittent (I) (*)	Low Voltage (LV)
SMA-13 series	SMA-13 P7.5 SMA-13 P10 SMA-13 S		SMA-13LT P7.5 SMA-13LT P10 SMA-13LT S	SMA-13LC P7.5 SMA-13LC P10 SMA-13LC S		
SMA-17 series	SMA-17 P7.5 SMA-17 P10 SMA-17 S	SMA-17L P7.5 SMA-17L P10 SMA-17L S	SMA-17LT P7.5 SMA-17LT P10 SMA-17LT S	SMA-17LC P7.5 SMA-17LC P10 SMA-17LC S		
SMA-21 series	SMA-21 P10 SMA-21 P15 SMA-21 P17.5 SMA-21 S	SMA-21L P10 SMA-21L P15 SMA-21L P17.5 SMA-21L S	SMA-21LT P10 SMA-21LT P15 SMA-21LT P17.5 SMA-21LT S	SMA-21LC P10 SMA-21LC P15 SMA-21LC P17.5 SMA-21LC S		SMA-21LV P10 SMA-21LV P15 SMA-21LV S
SMA-24 series	SMA-24 P10 SMA-24 P15 SMA-24 P17.5 SMA-24 P20.32 SMA-24 S	SMA-24L P10 SMA-24L P15 SMA-24L P17.5 SMA-24L P20.32 SMA-24L S			SMAI-24 P10 SMAI-24 P15 SMAI-24 P17.5 SMAI-24 P20.32 SMAI-24 S	
SMA-30 series	SMA-30 P15 SMA-30 P17.5 SMA-30 P20.32 SMA-30 S	SMA-30L P15 SMA-30L P17.5 SMA-30L P20.32 SMA-30L S				

\* When the third pin of SMAI-24 is left open, the audible signal is intermittent. When the third pin is connected to the (-), the audible signal is continuous. When the third pin is connected to the (+), there is no sound (=stop).

## HEAT PROTECTION & MODELS ON REQUEST

- **A heat protection label** in capton material is glued on the SMD model of the SMA buzzer. This enables the user to pick up the buzzer by vacuum. During the re-flow soldering process the heat shield label remains on the buzzer and must be removed after soldering. These heat protection labels are standard for all SMD buzzers.
- **Wash tabs**  
A wash tab can be glued on the sound-emitting hole of the buzzer avoiding water penetration into the cavity. To order this option: add WASH TAB to the model number of the SMA series.
- **Acryl coating**  
Models containing a protective acryl coated membrane are recommended for aggressive, humid or smoggy environment. To order this option: add MC to the model number of the SMA series.

## PACKAGING

All models with pin terminals are put on a polystyrene board (245 L x 245 W) and sold in boxes with dimensions 250 L x 250 W x 125 H.

Number	SMA-13 series	SMA-17 series	SMA-21 series	SMA-24 series	SMA-30 series
per board	250	150	100	100	64
per box	(8x250) 2000	(6x150) 900	(5x100) 500	(5x100) 500	(6x64) 384

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

Number	SMA-13 S	SMA-17 S	SMA-21 S	SMA-24 S	SMA-30 S
per board	100	81	49	42	25
per box	(9x100) 900	(8x81) 648	(7x49) 343	(5x42) 210	(6x25) 150

Dimensions of the tray and position of the SMD components:

Model	A	B
SMA-13 series	22 mm	16 mm
SMA-17 series	24 mm	18 mm
SMA-21 series	30 mm	16.7 mm
SMA-24 series	35 mm	22.6 mm
SMA-30 series	36 mm	19 mm

