Philips Speaker Systems

MEGATRON AG

FERROXCUBE DISTRIBUTOR FOR MAGNETIC COMPONENTS

Speakers for mobile & portable applications

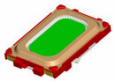
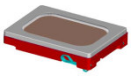
PRODUCT OVERVIEW

- 8 x 12 x 2.5 mm RA **New!**
- 11 x 15 x 3.5 mm RA
- 13 x 3.1 mm SLIM : **multifunctional**
- 13 x 4.2 mm SALT : **multifunctional**
- 14 x 20 x 4 mm GRACE
- 16 x 3 mm MALT "Eva"
- 28 x 6 mm HPFS

E-mail : info@megatron.ch
Website : www.megatron.ch

Portfolio

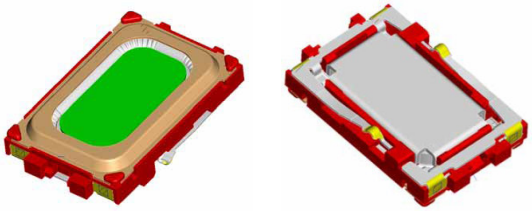
Portfolio : NXP speakers for mobile & portable applications

SPEAKER MODEL	Picture	Contact system	Sensitivity (W/m)	Typical backvolume	Frequency range *	Nominal power **	Typical applications
8x12x2.5		Springs	68 dB	0,5 ccm	800 - 20 kHz	250 mW	Stereo music phones
11x15x3.5		Springs	73 dB	1 ccm	600 - 12 kHz	500 mW	Flat phones, music phones, stereo solutions
13 x 3.1 MICRO SLIM		Springs	72,5 dB	2 ccm	800 - 10 kHz	300 mW	All-in-one speaker/receiver solutions
13 x 4.2 SALT		Springs	71,5 dB		430 - 5 kHz	200 mW	Slider mobile phones
14x20x4 GRACE		Springs, solder pads	77,5 dB	open backvolume possible	1 kHz - 15 kHz	500 mW	Push-to-talk, high SPL, unsealed phones
16 x 3 MALT EVA		Springs	74,5 dB	2 ccm	700 - 10 kHz	300 mW	Flip phones, high SPL
28 x 6 HPFS		Springs	86 dB		450 - 8 kHz	300 mW	Loud hearing for cordless phones and base stations

*) in typical application, at -3dB points after resonance peaks, without EQ correction
**) using shaped noise signal according to NXP specification sheet

8 x 12 x 2.5 mm RA

8 x 12 x 2.5 mm RA



Key Features

- Easy mechanical integration due to rectangular shape
- Low Resonance frequency, for use with small backvolumes
- Unique mechanical design yields extremely high soundflow
- Compound membrane for minimum THD, Q-factor and tumbling
- Robust design & spring contacts for easy application

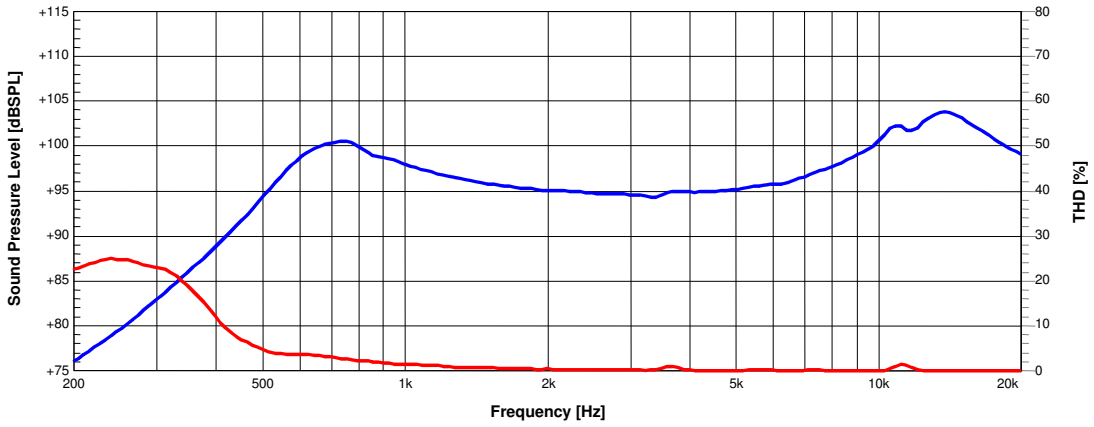
Variants

- none

Type No.: **2403-260-00029**	
Impedance	8 Ω
Sensitivity	68dB 1W/1m
Power Ratio **	0,25W Nom. / 0,5W Max.
Resonance Freq.	630Hz
Sine Sweep	50mW max
Freq. Range *	800-20kHz
Weight	0.8g
Contact type	Spring
Thickness	2,5mm

*) in typical application, at -3dB points after resonance peaks, without EQ correction
**) using shaped noise signalaccording to NXP specification sheet

Frequency Response

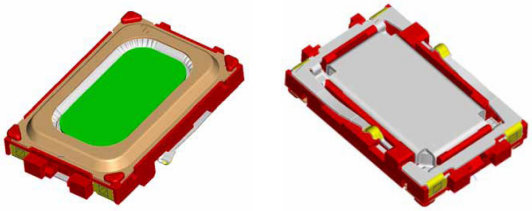


measured in IEC baffle with open back volume (50mW, 1cm)

E-mail : info@megatron.ch
Website : www.megatron.ch

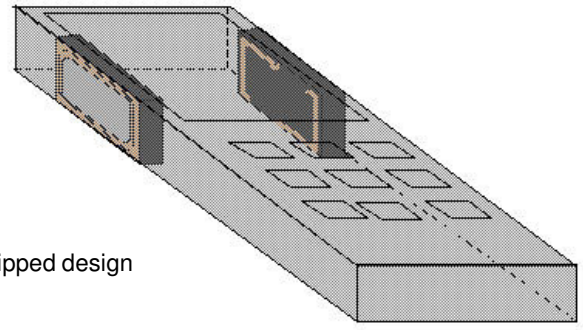
8 x 12 x 2.5 mm RA

8 x 12 x 2.5 mm RA



Typical applications

- For operation in closed back volumes (typically Fo = 900Hz in 0,5 ccm)
- Especially designed for stereo applications
- For front & side firing designs, flipped usage possible



Flipped design

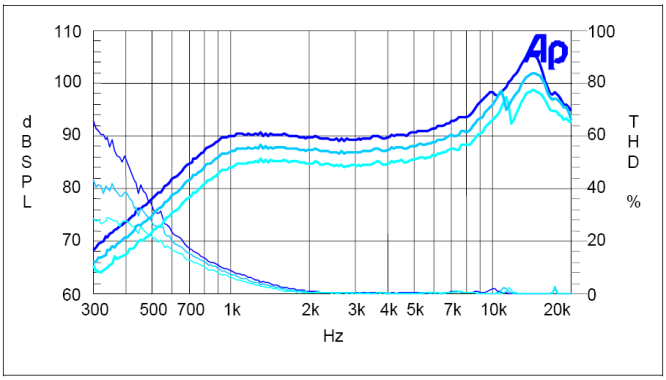
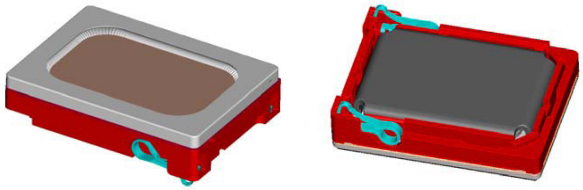


Figure 1: 0,5ccm back volume, free filed 3,16cm distance, 75 – 150 –300mW

E-mail : info@megatron.ch
Website : www.megatron.ch

11 x 15 x 3.5 mm RA

11 x 15 x 3.5 mm RA : WD35623/Y8L



Key Features

- Easy mechanical integration due to rectangular shape
- Low Resonance frequency, for use with small backvolumes
- 50% less back cavity necessary compared to typical 16mm speaker
- Unique mechanical design yields extremely high soundflow
- Compound membrane for minimum THD, Q-factor and tumbling

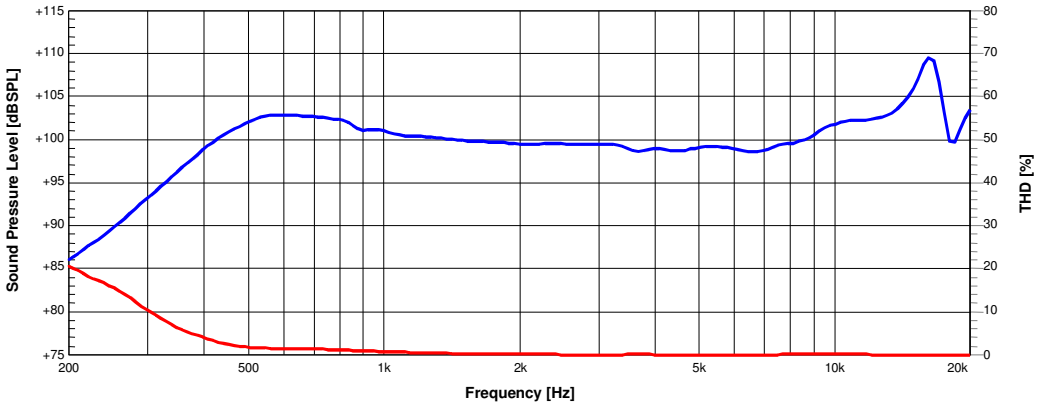
Variants

- With custom gasket : 2403-260-00067

Type No.: **2403-260-00001**	
Impedance	8 Ω
Sensitivity	73dB 1W/1m
Power Ratio **	0,5W Nom. / 1W Max.
Resonance Freq.	450Hz
Sine Sweep	100mW max
Freq. Range *	600-12kHz
Weight	1.5g
Contact type	Spring
Thickness	3,5mm

*) in typical application, at -3dB points after resonance peaks, without EQ correction
**) using shaped noise signalaccording to NXP specification sheet

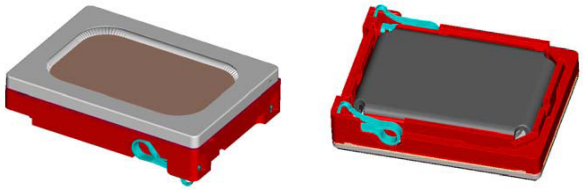
Frequency Response



measured in IEC baffle with open back volume (50mW, 1cm)

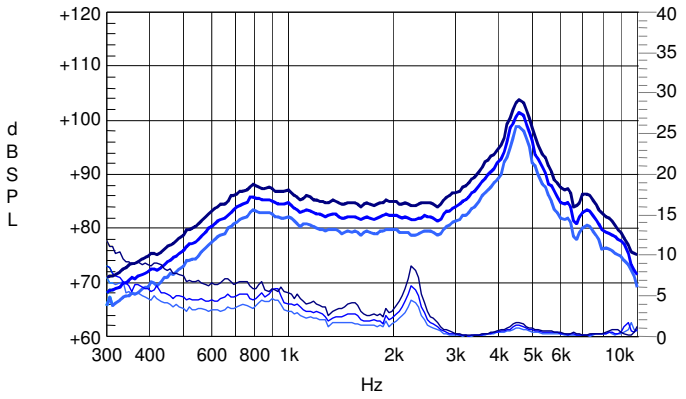
11 x 15 x 3.5 mm RA

11 x 15 x 3.5 mm RA : WD35623/Y8L

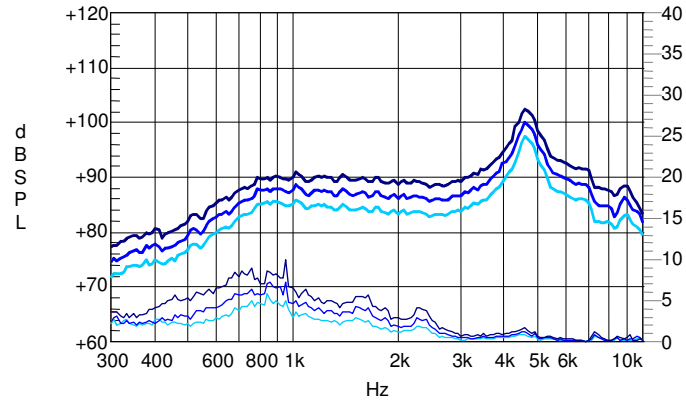


Typical applications

- For operation in closed back volumes (typically 1ccm)
- Suits both mono and stereo applications
- For front & side firing designs



One speaker (1ccm back volume) in 10cm free field
Measured in 10 cm (Y direction)
at 125–250–500 mW

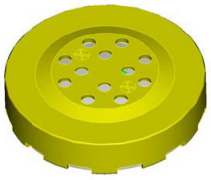


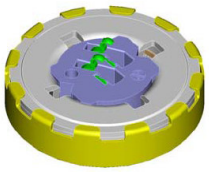
Both speakers (each 1ccm back volume) in parallel in 10cm free field
Measured in 10 cm (z direction) free field
at 200–400–800mW (LS in parallel, 4 Ohm)

E-mail : info@megatron.ch
Website : www.megatron.ch

13 x 3.1 mm SLIM multifunctional

13 x 3.1 mm SLIM





Key Features

- "2 in 1" speaker and/or receiver
- Extremely mature product with outstanding cost/performance factor
- Spring contacts and side venting design for easy pick&place
- Compound membrane for minimum THD, Q-factor and tumbling
- Copper coated aluminium coil for high sensitivity

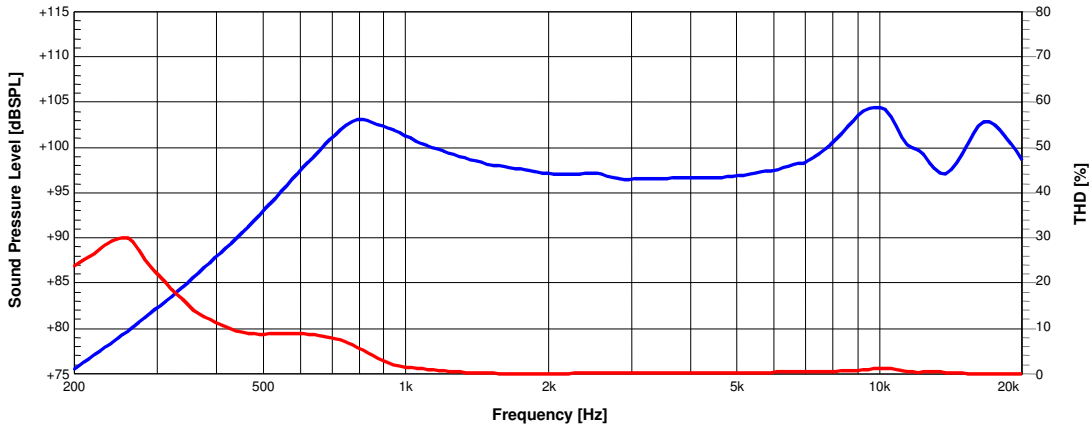
Variants

- none

Type No.: **2403-252-53502**	
Impedance	8 Ω
Sensitivity	72.5dB 1W/1m
Power Ratio **	0,3W Nom. / 0,5W Max.
Resonance Freq.	800Hz
Sine Sweep	150mW max
Freq. Range *	800-10kHz
Weight	1.1g
Contact type	Spring
Thickness	3,1mm

*) in typical application, at -3dB points after resonance peaks, without EQ correction
**) using shaped noise signalaccording to NXP specification sheet

Frequency Response

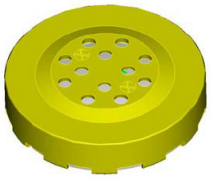


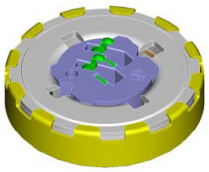
measured in IEC baffle with open back volume (50mW, 1cm)

E-mail : info@megatron.ch
Website : www.megatron.ch

13 x 3.1 mm SLIM multifunctional

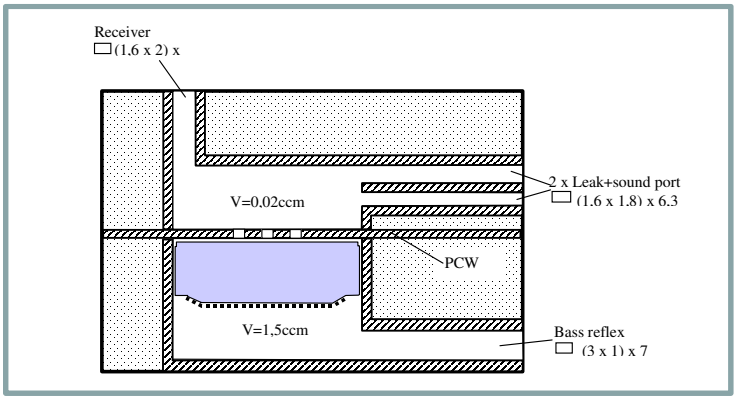
13 x 3.1 mm SLIM



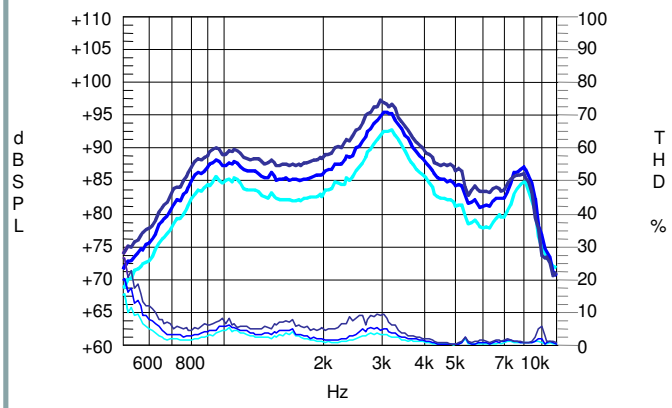


Typical applications

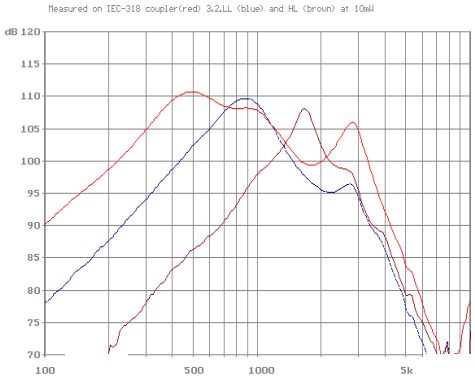
- Multifunctional one-speaker in Lo-leak designs
- Recommended backvolume 2ccm
- Stereo speaker solutions (not described here)



Measurement in 5 cm free field at 100 – 200 – 400 mW



Measurement at 10mW on IEC and 3.2 high and low leak coupler

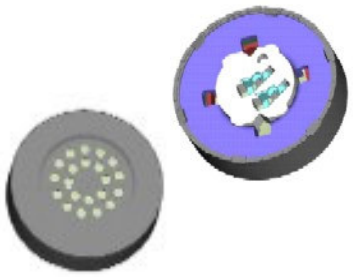


Red : IEC
Blue : 3.2 high leak
Brown : 3.2 low leak

E-mail : info@megatron.ch
Website : www.megatron.ch

13 x 4.2 mm SALT multifunctional

13 x 4.2 mm SALT : WD00533/Y10L



Key Features

- Variable contact solutions
- Two mode transducer
- Low Resonance frequency
- High sensitivity

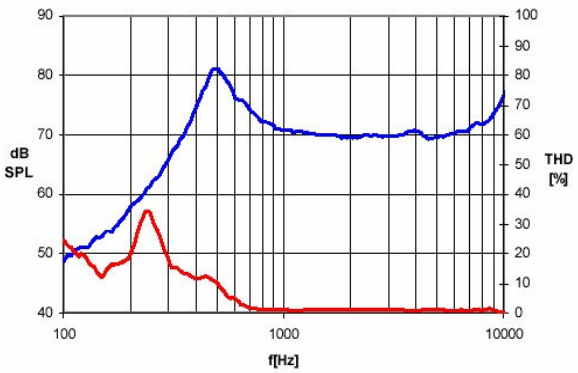
Typical applications

- Clamshell mobile phones
- Slider mobile phones
- For sealed and unsealed applications

Type No.: **2403-252-03307**

Impedance	10 Ω
Sensitivity	71.5dB 1W/1m
Power Ratio	0,2W Nom. / 0,3W Max.
Resonance Freq.	430Hz
Sine Sweep	n.a.
Freq. Range	430-5kHz
Weight	1.2g
Contact type	Spring
Thickness	4,2mm

Frequency Response



ON IEC Baffle at 100mW in 10 cm distance

E-mail : info@megatron.ch
Website : www.megatron.ch

14 x 20 x 4 mm GRACE

14 x 20 x 4 mm GRACE

Key Features

- High sound pressure level
- High sensitivity & power handling
- Oval racetrack design for space saving mounting

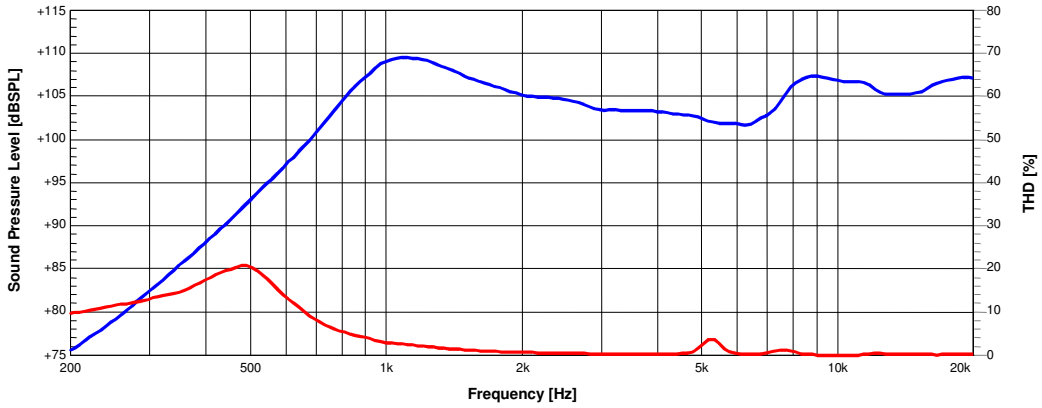
Variants

- With solder pads : 2403-263-00037

Type No.: **2403-263-00046**	
Impedance	8 Ω
Sensitivity	77.5dB 1W/1m
Power Ratio **	0,5W Nom. / 1W Max.
Resonance Freq.	950Hz
Sine Sweep	500mW max
Freq. Range *	500-15kHz
Weight	1.7g
Contact type	Spring
Thickness	4,0mm

*) in typical application, at -3dB points after resonance peaks, without EQ correction
**) using shaped noise signalaccording to NXP specification sheet

Frequency Response



measured in IEC baffle with open back volume (50mW, 1cm)

E-mail : info@megatron.ch
Website : www.megatron.ch

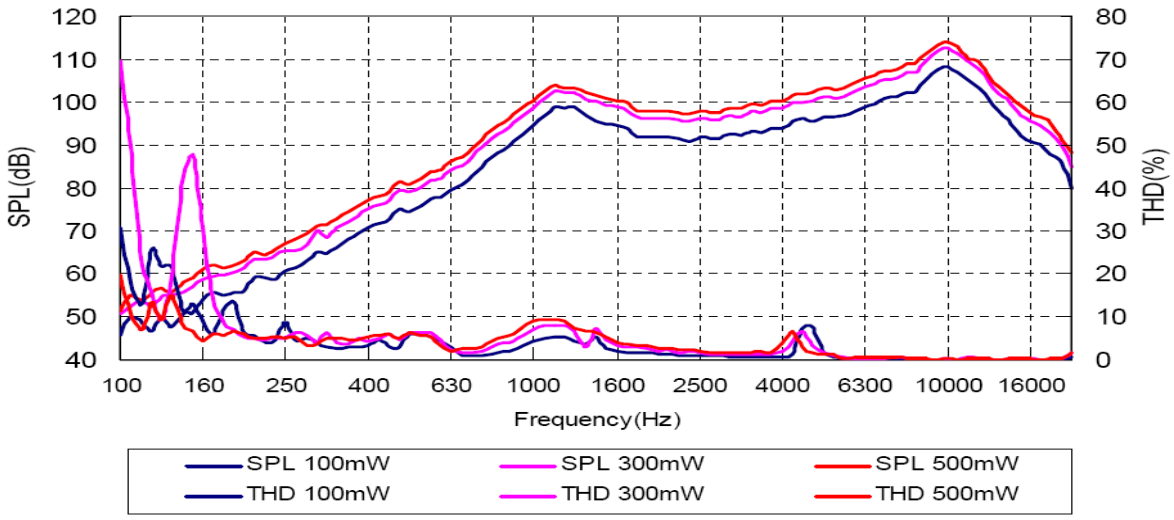
14 x 20 x 4 mm GRACE

14 x 20 x 4 mm GRACE

Typical applications

- Sealed back volume not necessary due to high resonance frequency
- The speaker has damping mesh on the back, no special mesh needed
- High sensitivity, power ratio up to 500mW even in free field

Frequency Response
closed back volume (3 ccm) with front resonator

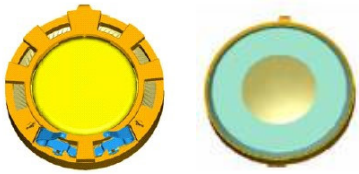


Frequency response and THD in free field, 5cm distance, 100mW-300mW-500mW

E-mail : info@megatron.ch
Website : www.megatron.ch

16 x 3 mm MALT "Eva"

16 x 3 mm MALT "Eva"



Key Features

- Very good performance/price ratio
- Extremely mature product family
- Plastic cover ensures low interference with antenna
- Spring contacts and side venting design for easy pick&place

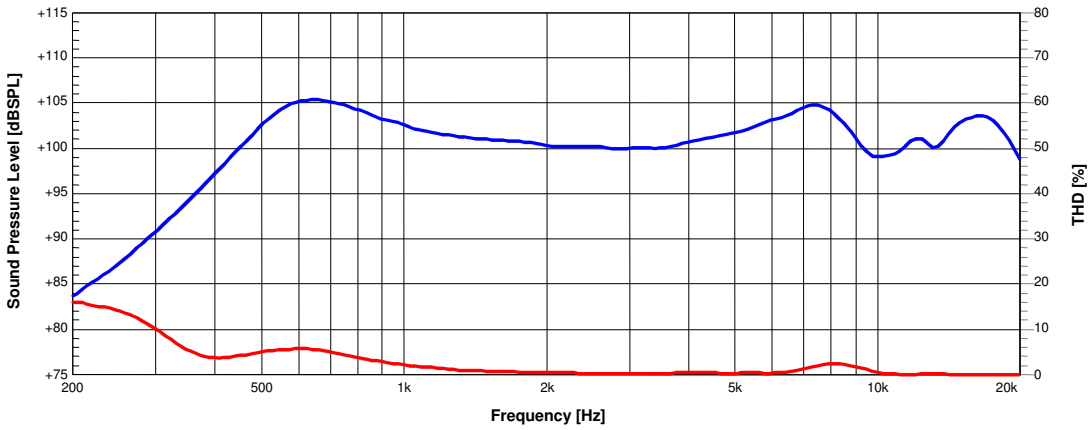
Variants

- none

Type No.: **2403-260-00024**	
Impedance	8 Ω
Sensitivity	74.5dB 1W/1m
Power Ratio **	0,3W Nom. / 0,8W Max.
Resonance Freq.	650Hz
Sine Sweep	130mW max
Freq. Range *	700-10kHz
Weight	1.14g
Contact type	Spring
Thickness	3,0mm

*) in typical application, at -3dB points after resonance peaks, without EQ correction
**) using shaped noise signalaccording to NXP specification sheet

Frequency Response

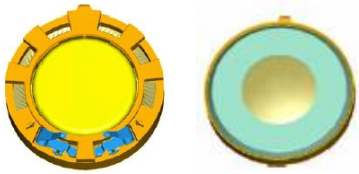


measured in IEC baffle with open back volume (50mW, 1cm)

E-mail : info@megatron.ch
Website : www.megatron.ch

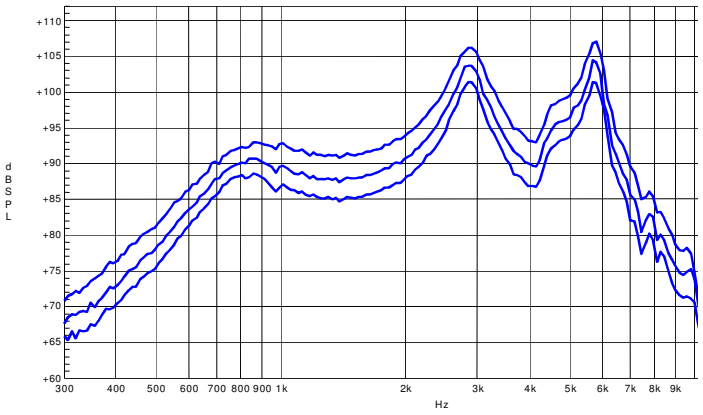
16 x 3 mm MALT "Eva"

16 x 3 mm MALT "Eva"



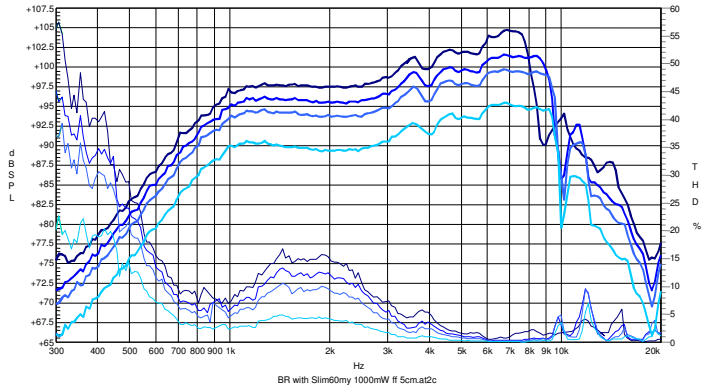
Typical applications

- For operation in closed back volumes
- Sidefiring or frontfiring applications
- Very slim design for thin mobile phones



FREQUENCY RESPONSE :
closed back volume (1ccm) sealed with a double front resonator measured in 5cm free field

Measured at 100 – 200 – 500 mW



FREQUENCY RESPONSE :
back volume (5ccm) with a bass reflex port measured in 5cm free field

Measured at 100–300–500-1000mW

E-mail : info@megatron.ch
Website : www.megatron.ch

28 x 6 mm HPFS

28 x 6 mm HPFS (High Performance flat speaker) : WD11903/Y8H

Key Features

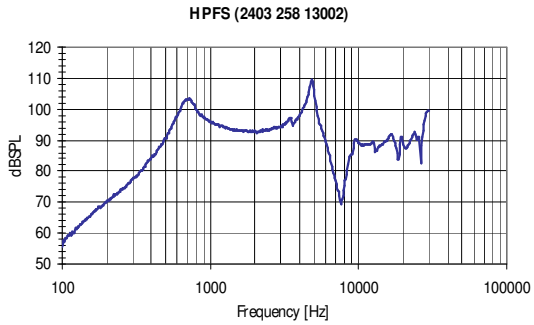
- Low Resonance Frequency
- High PHC
- High SPL
- Customized front gasket & rear pad

Type No.: **2403-258-13002**	
Impedance	8 Ω
Sensitivity	86dB 1W/1m
Power Ratio	0,5W Nom. / 1W Max.
Resonance Freq.	700Hz
Sine Sweep	n.a.
Freq. Range	450-8kHz
Weight	4.9g
Contact type	Spring
Thickness	6,0mm

Typical applications

- Automotive applications : speech, alarm, melodies tones in cars
- PTT phones
- Loud hearing for cordless phones and base stations
- Hands-free applications for 2 band radio, car communication and professional use

Frequency Response



ON IEC Baffle at 100mW in 10 cm distance

E-mail : info@megatron.ch
Website : www.megatron.ch