

harman consumer group

Engineering Design
Specification

Date
10/18/2012

Rev #
A

Document Number
9990039

1 inch UHF Compression Driver, Magnesium Diaphragm and Phase Plug

Model Number: 045Mg

Part Number: 300-0081-001

Division: Harman Lifestyle

Where Used: JBL Everest DD65000

Approved Supplier(s): HAdM (Harman Mexico MFG)

Design Engineer: JMoro

Assembled View:



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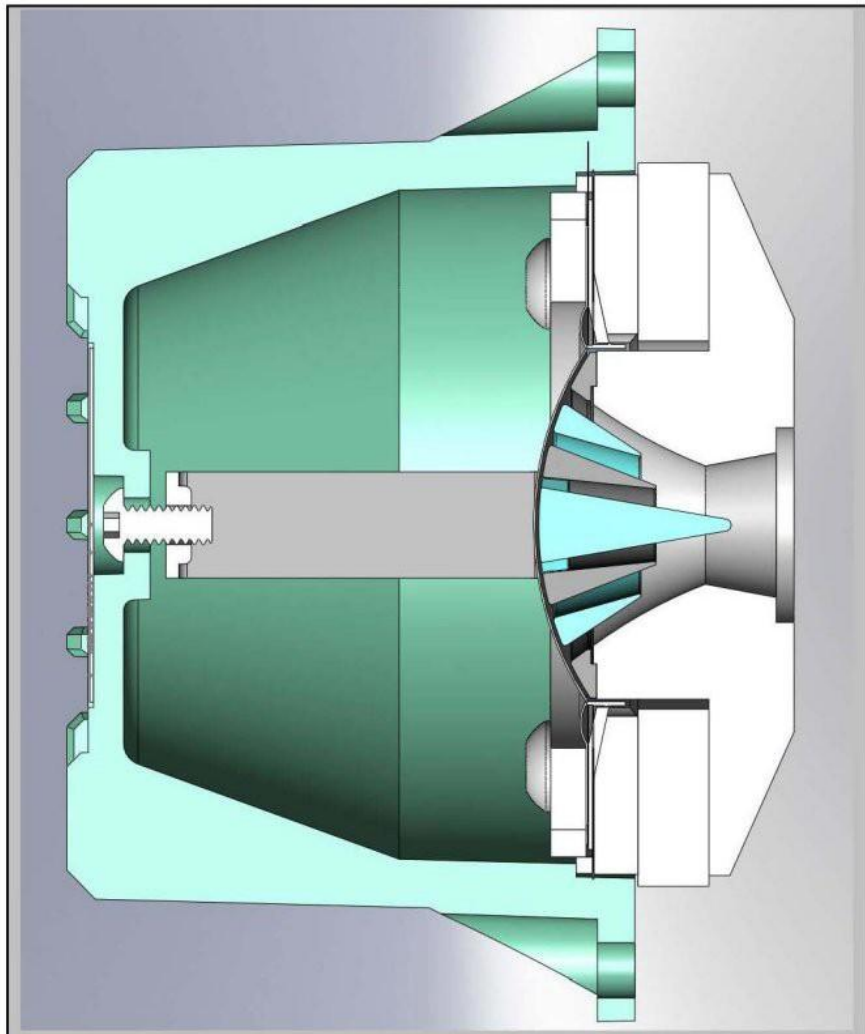
Section View

Model #

045Mg

Part #

300-0081-001



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Document Revision History

Rev #	Date	Description of Change	ECO#	Approval	
				M.E.	T.E.
X1	7/17/2012			n/a	JM
X2	7/18/2012	Include description of Phasing plug		n/a	JM
X3	8/15/2012	Update ETS Freq Resp Sweep voltage		n/a	JM
X4	10/16/2012	update parameter specs and notes		n/a	JM
A	10/18/2012	Release to production	5846	N/A	JM

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Transducer Mechanical Characteristics

Model # Part #

Assembly

Overall Height: Overall Diameter:

Mounting Detail:

Other:

Throat

O.D.: Length:

I.D. (Entrance): I.D. (Exit):

Mounting Feature(s):

Other:

Dome

Material: Thickness:

Shape: O.D.:

Other:

Surround

Material: Type:

Other:

Rear Cover

Material: Features:

Color / Finish:

Other:

Mounting Gasket

Material: Color:

Cover Gasket

Material: Color:

Voice Coil

I.D.: Max. O.D.:

Wire Type: Wire Size:

Wire Turns: Wire D.C.R.:

Winding Width: Winding layers:

Former: Wrapper:

Other:

Magnet

Material: Thickness:

O.D.: I.D.:

Other:

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Transducer Mechanical Characteristics (Motor)

Model # Part #

Top Plate

Material: Thickness:
O.D.: I.D.:
Other:

Pole Piece

O.D.: Copper Cap:
Other:

Back Plate

Material: Thickness:
O.D.: I.D.:
Other:

Bucking Magnet

Material: Thickness:
O.D.: I.D.:
Other:

Shielding Can

Material: Thickness:
Other:

Misc

Magnetic Fluid: Polarity:
Tinsel Lead Type:
Tinsel Lead Attach.:
Terminal Size / Type:
Other:

Notes:

Uses 3-slot (3 concentric rings), Cast AZ91D Magnesium-alloy Phase Plug. Spherical Radius is 0.892in.

Magnesium diaphragm mass (contributing to Mmd) is approx = 0.135g

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Transducer Electro-Mechanical Parameters

Fundamental Resonant Frequency (Hz):	Fs	4.300	+/-	10%
Transducer Direct Current Resistance (Ohms):	DCR	3.15	+/-	3%
Total Driver Q at Fs, Considering all driver Resistance:	Qts	1.45	+/-	5%
Moving Mass (g):	Mms	0.31	+/-	5%
Motor Strength (T*m):	Bl	3.89	+/-	5%
Voltage Sensitivity(2.83V@1 meter)	SPL	87dB,15KHz	+/-	1dB
Radiation Area	Sd	3.022 sq.cm		

Method

Software:	n/a
Mass Loading:	n/a
Misc.:	

Magnetic Flux Information (For Engineering Reference Only)

Total flux lines intercepted by coil windings [Maxwell Turns]:	****
Conversion to flux density [Tesla]:	approx 1.82
Flux lines throughout gap thickness [Maxwell Turns]:	****
Conversion to flux density [Tesla]:	approx. 1.82

Notes

Parameters provided are nominal values which are closest to the Engineering Reference Standard

Voltage Sensitivity takes precedence over possible T/S combinations that would produce SPL

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1 inch UHF Compression Driver, Magnesium Diaphragm and Phase Plug

Transducer Test Specifications

production testing quantities per HCG QA AQL

Model # Part #

Polarity Test

Polarity:

Dynamic Test

Sine Sweep Voltage: Frequency Range: Sweep Duration:

Power Test

Signal: Duration:

Impedance

DC Resistance: Min. Impedance @ Frequency:

Frequency Response

Freq. Response:

Window	Averaging	Slope
6.0 kHz - 15.0 kHz, +/- 2dB**	1/3 Octave	36 dB / Octave
15.0 kHz - 25.0 kHz, +/- 3dB**	1/3 Octave	36 dB / Octave
25.0 kHz - 40.0 kHz, +8dB / -6dB**	1/3 Octave	36 dB / Octave
	1/3 Octave	36 dB / Octave
	1/3 Octave	36 dB / Octave
	1/3 Octave	36 dB / Octave
	1/3 Octave	36 dB / Octave
	1/3 Octave	36 dB / Octave
	1/3 Octave	36 dB / Octave
	1/3 Octave	36 dB / Octave
	1/3 Octave	36 dB / Octave

Notes:

* Power test signal to have 6dB crest factor.

** Frequency Response Sweep Voltage = 1.0v (High setting), =0.263v (Low setting)

Engineering Standard
Frequency Response

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1 inch UHF Compression Driver, Magnesium Diaphragm and Phase Plug

Model #

Part #

SPL vs Freq



Map — 42: 045Mg #4 (1v) Frequency Response

Notes
Measured in Half-Space Anechoic Chamber at 1M
UHF mounted to K2 59800 horn pin 337105-001 (60 x 30 pattern)

LMS 4.6.0.371
May/29/2007

Person: Jerry Moro
Company: JBL

Project: JBL S3900
File: Harman Japan Graph Imports.lib

Jul 17, 2012
Tue 3:16 pm

LINEAR X
S Y S T E M S

Engineering Standard
Distortion (Low Level)

Date
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Rev#
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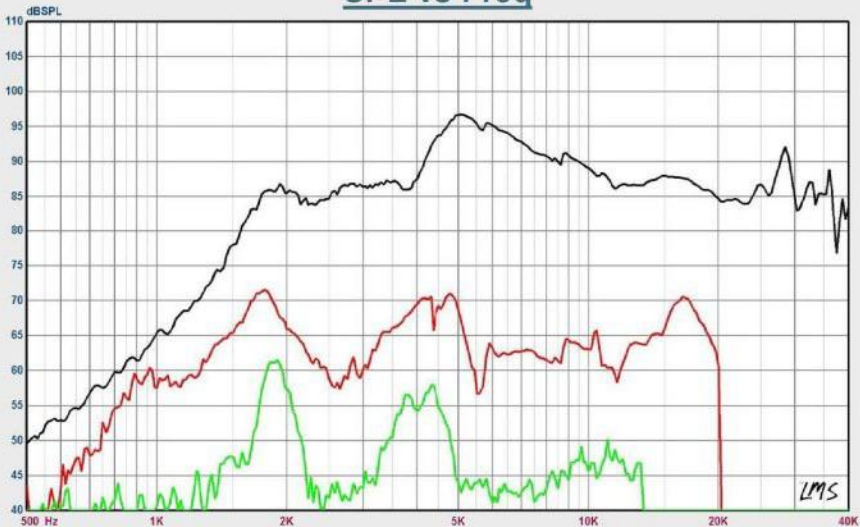
1 inch UHF Compression Driver, Magnesium Diaphragm and Phase Plug

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Part #

300-0081-001

SPL vs Freq



- Map
- 43: 045Mg #4 (1v) Fundamental
 - 44: 045Mg #4 (1v) 2nd Harmonic+20dB
 - 45: 045Mg #4 (1v) 3rd Harmonic+20dB

Notes

Measured in Half-Space Anechoic Chamber at 1M.
UHF mounted to K2 99800 horn pin 337106-001 (60 x 30 pattern)

LMS

4.6.0.371
May/29/2007

Person: Jerry Moro
Company: JBL

Project: JBL S3900
File: Harman Japan Graph Imports.lib

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LINEAR
S Y S T E M S

Engineering Standard
Distortion (High Level)

Date
10/18/2012

Rev #
A

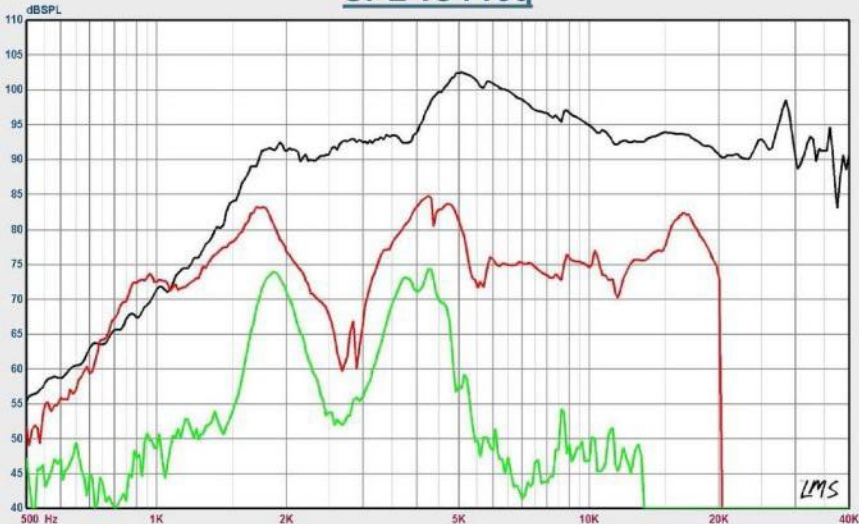
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1 inch UHF Compression Driver, Magnesium Diaphragm and Phase Plug

Model #

Part #

SPL vs Freq



- Map
- 46: 045Mg #4 (2v) Fundamental
 - 47: 045Mg #4 (2v) 2nd Harmonic+20dB
 - 48: 045Mg #4 (2v) 3rd Harmonic+20dB

Notes

Measured in Half-Space Anechoic Chamber at 1M

UHF mounted to K2 S9800 horn pin 337105-001 (60 x 30 pattern)

LMS 4.6.0.371
May/29/2007

Person: Jerry Moro
Company: JBL

Project: JBL S3900
File: Harman Japan Graph Imports.lib

Jul 17, 2012
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LINEAR X
S Y S T E M S

Engineering Standard
Impedance

Date
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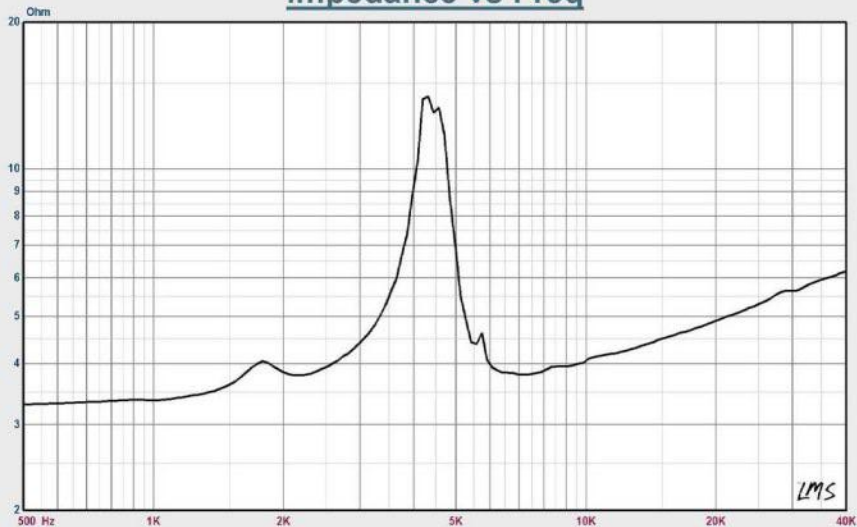
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1 inch UHF Compression Driver, Magnesium Diaphragm and Phase Plug

Model #

Part #

Impedance vs Freq



Map
— 7: 045Mg #4

Notes
Measured in Free-Air
UHF mounted to K2 59800 Horn p/n 337106-901 (60 x 30 pattern)

LMS 4.6.0.371
May/29/2007

Person:
Company:

Project:
File: 045Mg.lib

Jul 17, 2012
Tue 3:17 pm

LINEAR X
S Y S T E M S