

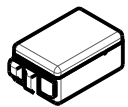
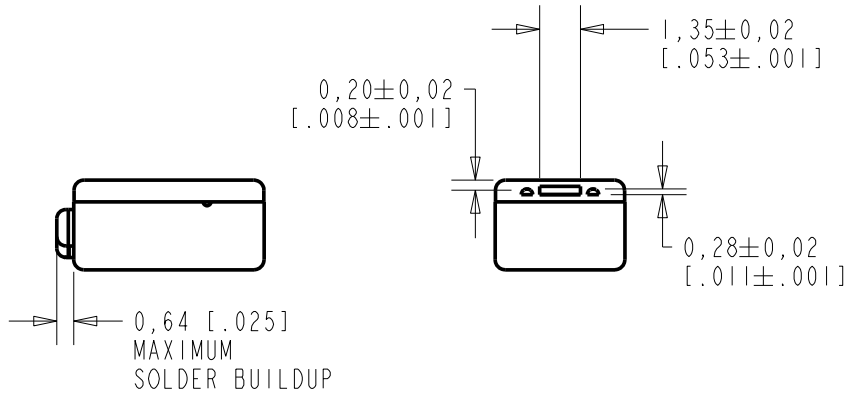
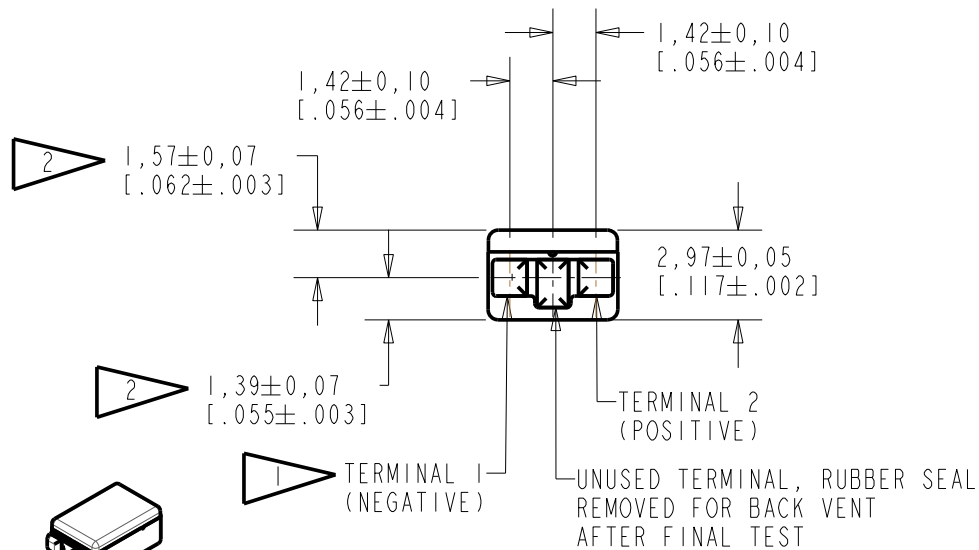
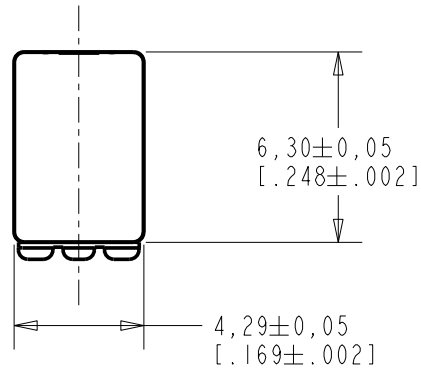
FED-30048-104

SHT 1.1

NOTE:

1 A POSITIVE GOING VOLTAGE AT TERMINAL 2, RELATIVE TO TERMINAL 1, CAUSES A DECREASE IN PRESSURE AT THE SOUND OUTLET.

2 LOCATED FROM TWO SURFACES FOR CUSTOMER CONVENIENCE. ONLY APPLICABLE FROM ONE SURFACE, NOT TO BE USED TOGETHER. HORIZONTAL LOCATION FOR TERMINAL CENTERED TO  $\pm 0,17$  [0.007].



SCALE 2:1

NOMINAL WEIGHT  
.31 GRAM

DIMENSIONS IN MILLIMETERS [INCHES]

Revision	C.O. #	Implementation Date	RELEASE LEVEL	REVISION
C	C10107990	11-13-08	Active	C
B	C10106796	1-4-08		
A	C10104709	8-25-06		

SCALE:	4:1	DR. BY	DATE
DO NOT SCALE DRAWING		LSY	8-25-06
TITLE:	RECEIVER	CK. BY	DATE
	OUTLINE DRAWING	GJP	9-8-06
		APP. BY	DATE
		GJP	9-8-06

**KNOWLES ELECTRONICS**  
ITASCA, ILLINOIS U.S.A.

FED-30048-104

SHT 1.1

**DESCRIPTION**

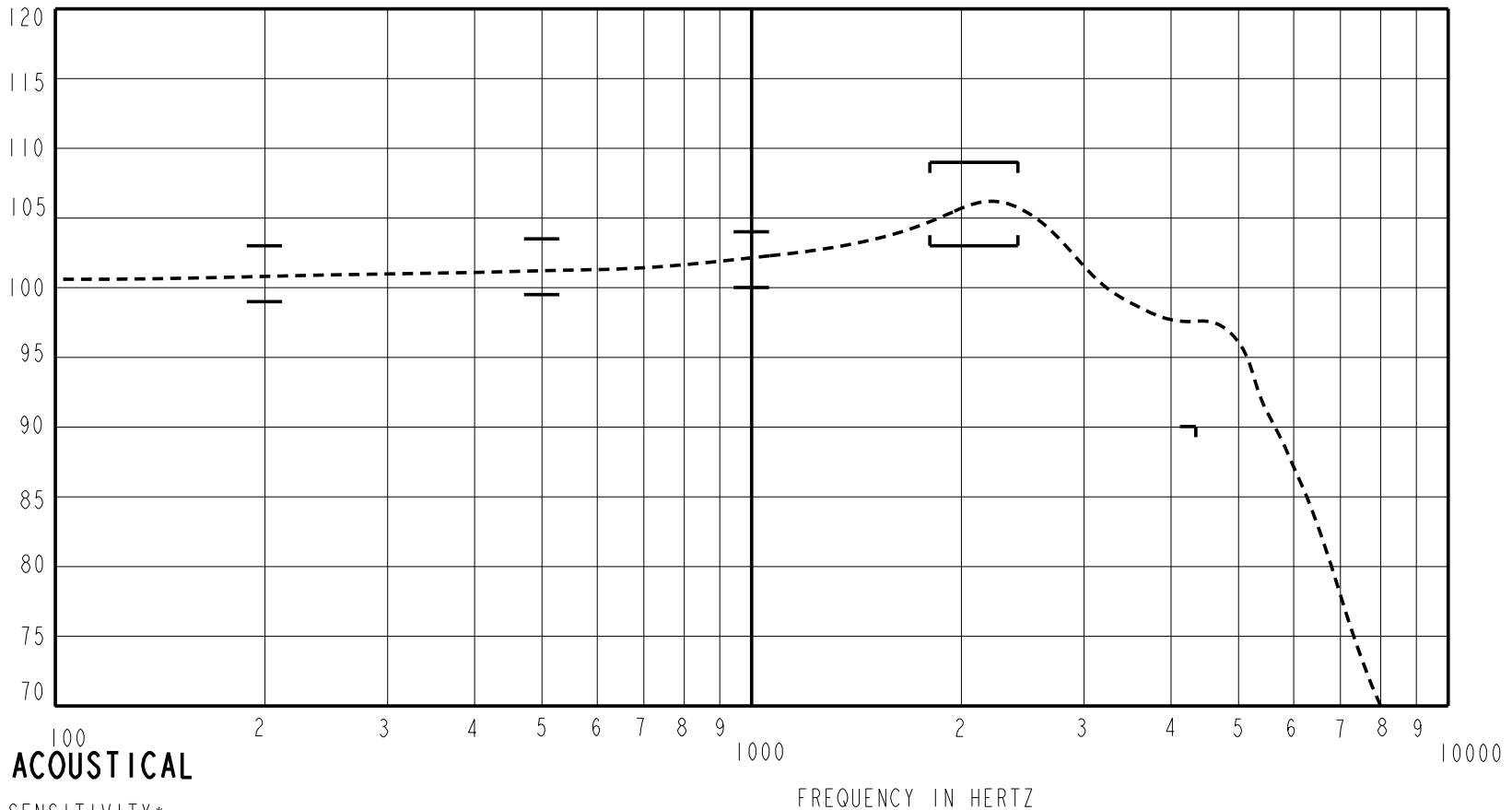
FERROFLUID DAMPING

FED-30048-104  
SHEET 2.1

THE FED-30048-104 IS A FERROFLUID DAMPED, MAGNETIC BALANCED ARMATURE RECEIVER, INTENDED FOR USE IN HEADSETS. THIS MODEL IS SHOCK PROTECTED, HAS LOW IMPEDANCE, INCREASED DCR/IMPEDANCE RATIO, AND A REAR VENT.

CONSTANT VOLTAGE DRIVE CONDITIONS (NOTE: REAR VENT, CENTER TERMINAL PAD, BLOCKED FOR TEST)

SENSITIVITY IN dB RELATIVE TO 20 uPa FOR CONDITIONS SHOWN BELOW



**ACOUSTICAL**

SENSITIVITY\*  
DEVICE WILL PRODUCE THE SPL LISTED BELOW UNDER THE TEST CONDITIONS DESCRIBED IN TABLE 3. NOMINAL SENSITIVITY AT 1 kHz IS dB RELATIVE TO 20uPa. ALL OTHER VALUES IN dB RELATIVE TO THE SENSITIVITY AT 1 kHz.

FREQUENCY (Hz)	MINIMUM	NOMINAL	MAXIMUM
200	-3.0	-1.0	+1.0
500	-2.5	-0.5	+1.5
1000	-2.0	102.0	+2.0
1850-2650	+1.0	+4.0	+7.0
4400	-12.0	---	---

PORT LOCATION: 12N

TABLE 1.

TOTAL HARMONIC DISTORTION  
DEVICE WILL NOT EXCEED TOTAL HARMONIC DISTORTION LEVELS LISTED BELOW.

FREQUENCY (Hz)	DRIVE (V RMS)	DC BIAS (mA)	LIMIT (%)
500	0.363	0	10
780	0.13	0	5
1175	0.13	0	5

TABLE 2.

**TEST CONDITIONS**

NOMINAL SOURCE VOLTAGE	0.13 Vrms, 0 mA DC BIAS
SOURCE IMPEDANCE	< 1 Ω
TUBING	10 mm (.394) LONG, 1 mm (.039) ID.
COUPLER CAVITY	2 CM <sup>3</sup> SIMULATED ANSI S3.7 TYPE HA-3, (IEC 126)

TABLE 3.

**ELECTRICAL**

DC RESISTANCE	23Ω ±10%
IMPEDANCE @ 500 Hz	26Ω ±15%
IMPEDANCE @ 1 kHz	29Ω ±15%

TABLE 4.

ISOLATION: CASE WILL BE ELECTRICALLY ISOLATED FROM THE COIL CIRCUIT.

TEMPERATURE: OPERATING RANGE FROM 0°C TO 63°C (SENSITIVITY WILL NOT VARY BY MORE THAN ±3 dB WITHIN RANGE)  
SENSITIVITY AT 0°C IS 2dB LOWER THAN THE SENSITIVITY AT ROOM TEMPERATURE.  
DELTA PEAK IS 1dB HIGHER AT BODY TEMPERATURE (37°C)  
STORAGE RANGE FROM -40°C TO 63°C.

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B	C10106796	1-4-08		
A	C10104709	8-25-06		

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ITASCA, ILLINOIS U.S.A.

WHEN TEST LIMITS ARE USED TO ESTABLISH INCOMING INSPECTION ACCEPTANCE/REJECTION CRITERIA, CORRELATION OF TEST EQUIPMENT WITH KNOWLES IS ALSO REQUIRED FOR ELIMINATION OF EQUIPMENT AND TEST METHOD VARIATION

TITLE: **RECEIVER**  
PERFORMANCE SPECIFICATION

**FED-30048-104**  
SHT 2.1

DR. BY	DATE
LSY	8-25-06
CK. BY	DATE
GJP	9-8-06
APP. BY	DATE
GJP	9-8-06