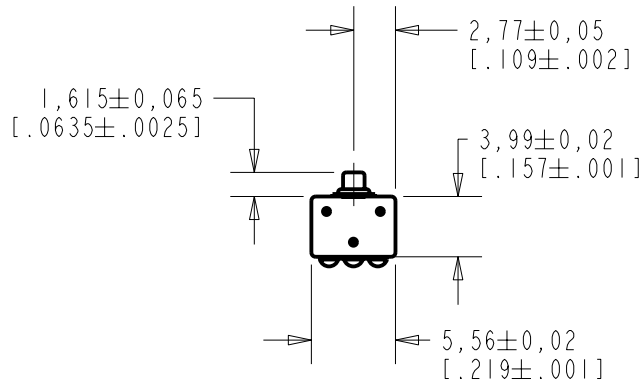


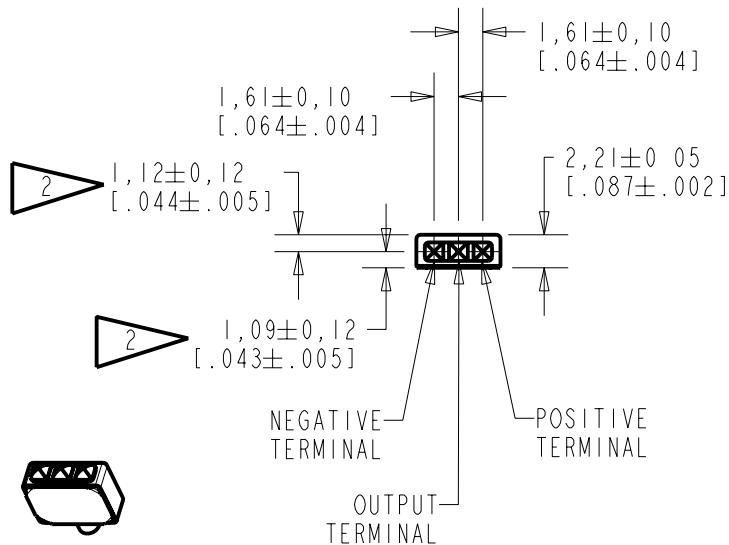
**EA-21939-000**  
SHT 1.1



NOTE:

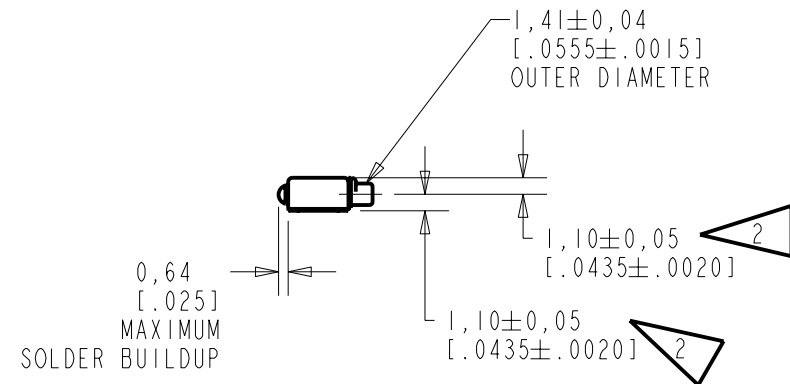
1. INCREASED PRESSURE AT THE SOUND INLET CAUSES A POSITIVE GOING VOLTAGE TO APPEAR AT THE OUTPUT TERMINAL, RELATIVE TO THE NEGATIVE TERMINAL.

2 LOCATED FROM TWO SURFACES FOR CUSTOMER CONVENIENCE. ONLY APPLICABLE FROM ONE SURFACE, NOT TO BE USED TOGETHER. HORIZONTAL LOCATION FOR TERMINAL CENTERED TO  $\pm 0,17$  [.007].



NOMINAL WEIGHT  
.13 GRAM

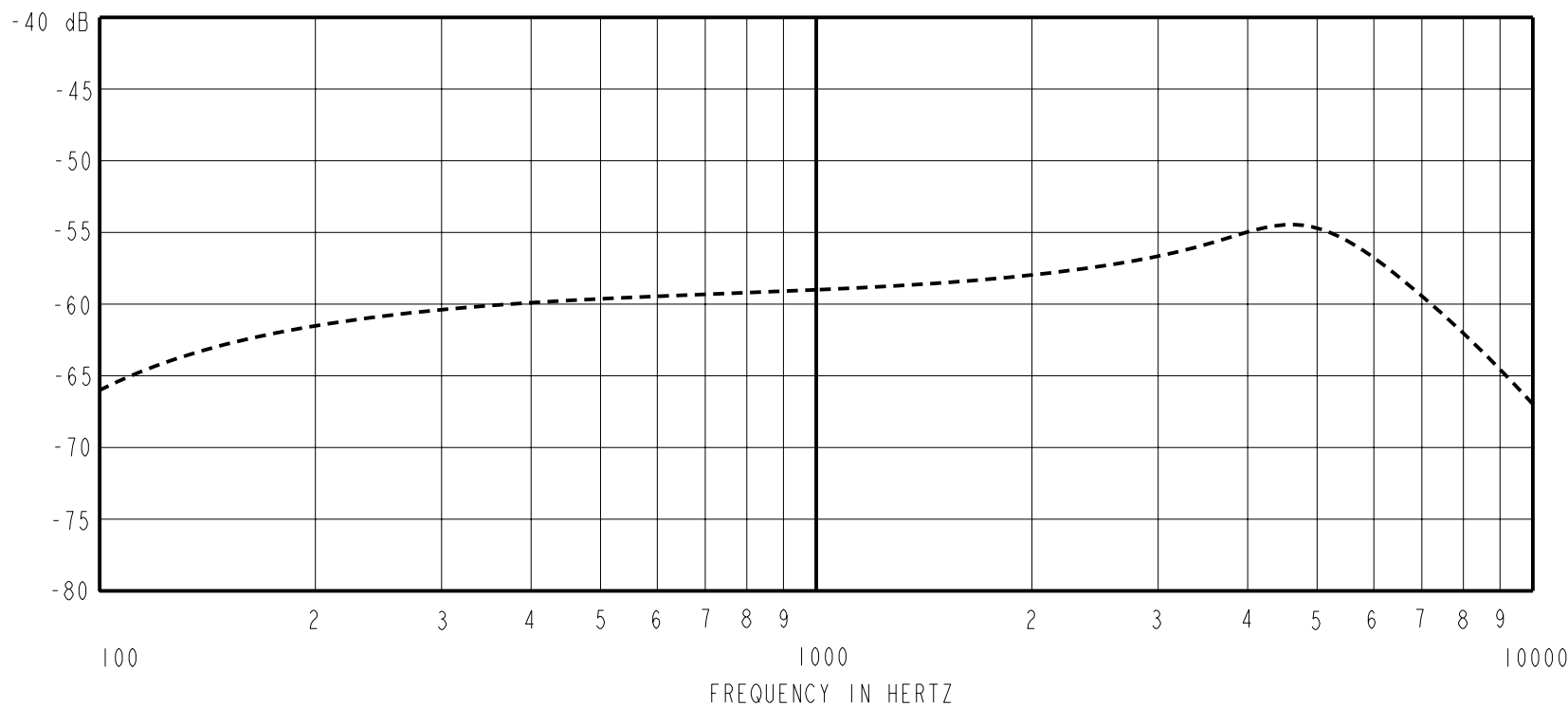
DIMENSIONS IN MILLIMETERS [INCHES]



Revision	C.O. #	Implementation Date	RELEASE LEVEL	REVISION
A	MI0101308	11-22-06	Released	A
SCALE: 2:1			DR. BY: LSY	DATE: 11-22-06
DO NOT SCALE DRAWING			CK. BY: GJP	DATE: 12-6-06
TITLE: MICROPHONE		EA-21939-000	APP. BY: GJP	DATE: 12-6-06
OUTLINE DRAWING		SHT 1.1		

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

SENSITIVITY IN dB RELATIVE TO 1.0 VOLT/0.1 Pa (N/M<sup>2</sup>)  
FOR CONDITIONS SHOWN BELOW.



FREQUENCY	SENSITIVITY			DEVICE CONFORMITY	
	MIN.	NOM.	MAX.	RANGE OF DEVIATION FROM 1KHz	
100	---	-66.0	---	-11.0	-4.0
1000	-62.0	-59.0	-56.0	0.0	0.0
4800	---	-54.5	---	-3.0	+4.0

NOTES:

1. CASE CONNECTED TO NEGATIVE TERMINAL.
2. MICROPHONE TO BE FUNCTIONAL WITH 10 VDC SUPPLY.
3. CONFORMS TO REQUIREMENTS SHOWN ON 'ELECTRET MICROPHONE ENVIRONMENTAL QUALIFICATION TEST, SHEET 2.2'.

PORT LOCATION	DC SUPPLY	AMPLIFIER CURRENT DRAIN	SENSITIVITY CHANGE ON REDUCING SUPPLY TO 0.9VDC	"A" WEIGHTED NOISE (1 kHz EQUIV. SPL)	OUTPUT IMPEDANCE OHMS			CAPACITANCE ±50%	
					MIN.	NOM.	MAX.	1-2	1-3
12S	1.3V	50 uA MAX.	3 dB MAX.	28.5 dB MAX.	2000	3500	6000	NA	NA

Revision	C.O. #	Implementation Date	RELEASE LEVEL	REVISION
A	M10101308	11-22-06	Released	A

**KNOWLES ELECTRONICS**  
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: **MICROPHONE** **EA-21939-000**  
PERFORMANCE SPECIFICATION **SHT 2.1**

DR. BY	DATE
LSY	11-22-06
CK. BY	DATE
GJP	12-6-06
APP. BY	DATE
GJP	12-6-06

WHEN THESE TESTS ARE USED TO ESTABLISH PRODUCT QUALIFICATION, CORRELATION OF TEST EQUIPMENT WITH KNOWLES ELECTRONICS IS ALSO REQUIRED TO ELIMINATE EQUIPMENT AND TEST METHOD VARIATION.

BECAUSE THIS IS AN ACCELERATED LIFE TEST, IT FOLLOWS THAT THE UNITS WHICH HAVE BEEN TESTED WILL NOT QUALIFY AS IN-WARRANTY RETURNS. SINCE THESE TESTS ARE DESTRUCTIVE IN NATURE, DEVICES SUBJECTED TO THESE TESTS SHOULD NOT BE USED IN PRODUCTION.

#### 1. ACCELERATED DAMP HEAT TEST.

##### 1.1 PRECONDITIONING:

TIME - 16 HOURS  
TEMPERATURE -  $22^{\circ}\text{C} \pm 1^{\circ}\text{C}$   
HUMIDITY - 60% MAX. R.H.

##### 1.2 TEST CONDITIONS:

TIME AT CONDITIONS: - 1000 HOURS  
TEMPERATURE -  $63^{\circ}\text{C} \pm 1^{\circ}\text{C}$   
HUMIDITY - 95% R.H.  $\pm 2\%$   
VOLTAGE STRESS - DETAILED FIG. 1

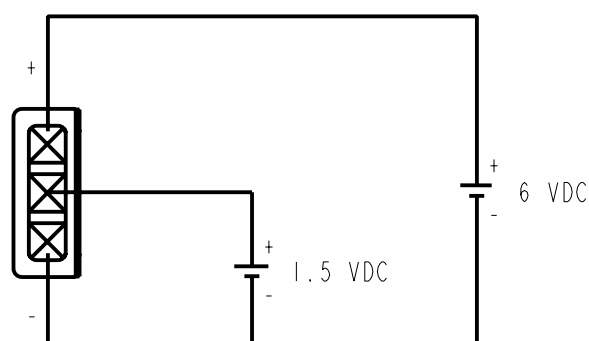


FIG. 1

(AVOID CONDENSATION FALLING ON UNITS UNDER TEST.)

##### 1.3 INITIAL MEASUREMENTS:

AFTER PRECONDITIONING, MEASURE SENSITIVITY PER SHEET 2.1 OF THE APPLICABLE KNOWLES ELECTRONICS MICROPHONE PERFORMANCE SPECIFICATION.

##### 1.4 TEST PROCEDURE:

INSERT UNIT(S) INTO TEST CHAMBER PER CONDITIONS OF 1.2.

##### 1.5 RECOVERY:

TIME - 2 HOURS  
TEMPERATURE -  $22^{\circ}\text{C} \pm 1^{\circ}\text{C}$   
HUMIDITY - 60% MAX. R.H.

##### 1.6 FINAL MEASUREMENTS:

MEASURE SENSITIVITY PER CONDITIONS DESCRIBED ON SHEET 2.1.

##### 1.7 REQUIREMENT:

NO UNITS WILL BE INOPERATIVE FOLLOWING THE TEST AND RECOVERY CYCLE.

#### 2. SHOCK TEST

##### 2.1 PRECONDITIONING:

TIME - 16 HOURS  
TEMPERATURE -  $22^{\circ}\text{C} \pm 1^{\circ}\text{C}$   
HUMIDITY - 60% MAX. R.H.

##### 2.2 TEST CONDITIONS:

HALF-SINE IMPULSE DURATION - 100 MICROSECONDS  
PEAK AMPLITUDE - 20,000 g

SPURIOUS DEVIATIONS IN THE HALF-SINE IMPULSE CURVE SHALL BE REDUCED TO WHERE RESULTS ARE NOT APPRECIABLY AFFECTS.

UNIT(S) TO BE SUBJECTED TO THE TEST CONDITIONS EITHER IN THE COVER UP OR COVER DOWN ORIENTATION.

##### 2.3 INITIAL MEASUREMENTS:

AFTER PRECONDITIONING, MEASURE AND RECORD THE 1 kHz SENSITIVITY PER SHEET 2.1 OF THE APPLICABLE KNOWLES ELECTRONICS MICROPHONE PERFORMANCE SPECIFICATION.

##### 2.4 TEST PROCEDURE:

STRESS UNIT(S) ACCORDING TO THE ABOVE 2.2 TEST CONDITIONS.

##### 2.5 RECOVERY:

UNITS TO BE MEASURED IMMEDIATELY AFTER TEST CYCLE.

##### 2.6 FINAL MEASUREMENTS:

MEASURE AND RECORD THE 1 kHz SENSITIVITY PER SHEET 2.1.

##### 2.7 REQUIREMENT:

THE UNIT(S) SHALL SHOW A MAXIMUM CHANGE IN 1kHz SENSITIVITY (INITIAL TO FINAL) OF 1.0 dB AS A RESULT OF THE TEST CYCLE.

Revision	C.O. #	Implementation Date	RELEASE LEVEL	REVISION
			<b>Released</b>	<b>A</b>
A	MI0101308	11-22-06		

<b>KNOWLES ELECTRONICS</b> <b>ITASCA, ILLINOIS U.S.A.</b>	<small>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</small>		DR. BY	DATE	
			LSY	11-22-06	
	TITLE: <b>MICROPHONE</b>		CK. BY	DATE	
	PERFORMANCE SPECIFICATION		GJP	12-6-06	
		EA-21939-000		APP. BY	DATE
		SHT 2.2		GJP	12-6-06