

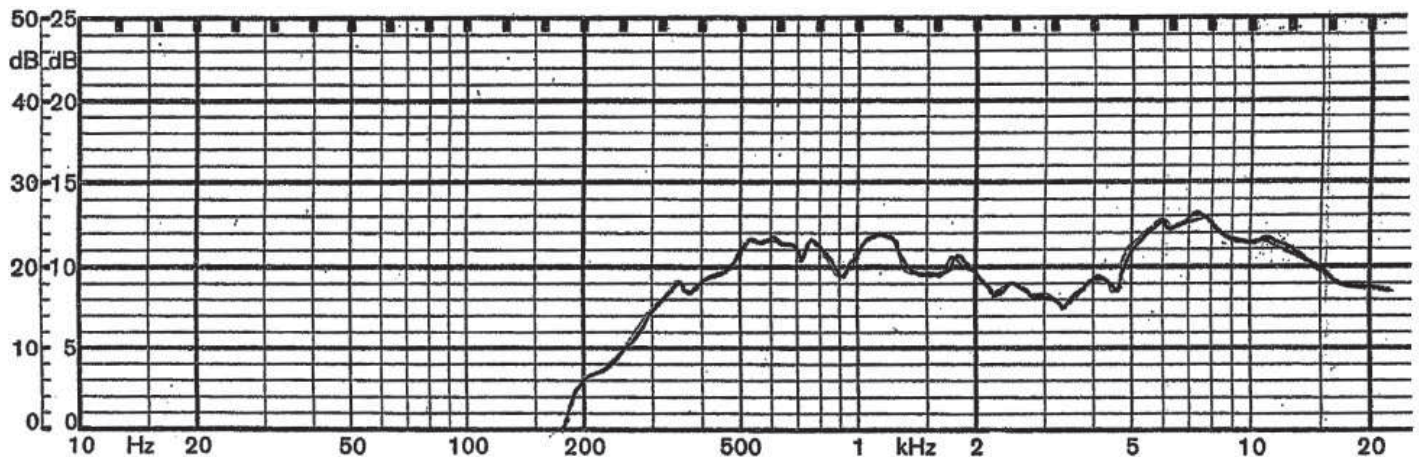
**PART NUMBER: CLS0231MP-1**
**DESCRIPTION: SPEAKER**

## SPECIFICATIONS

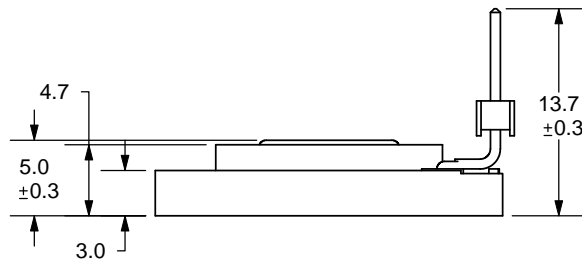
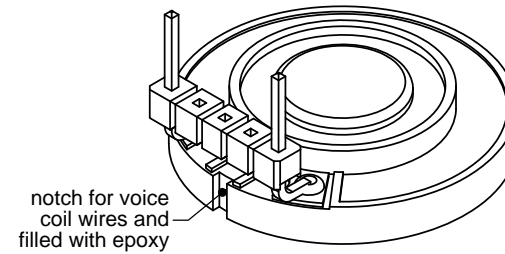
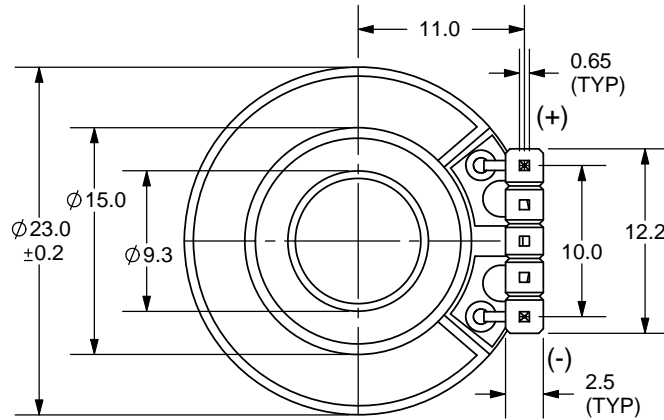
parameter	conditions/description	min	nom	max	units
nominal size	23 mm				
impedance	at 1.5 kHz, 0.9 V	6.8	8	9.2	$\Omega$
resonant frequency	at 0.9 V	384	480	576	Hz
sound pressure level	0.1 W, 50 cm ave., at 0.6, 0.8, 1, 1.2 kHz	86	89	92	dB
response	10 dB max.	Fo		20,000	Hz
input power			0.1	0.2	W
operation	must be normal at program source		0.1		W
buzz, rattle, etc.	must be normal at sine wave		0.9		V dc
magnet	size: 9.5 x 1.5 mm				
load test	5 hours of white noise at		0.1		W
heat test	20 ~ 50% RH for 5 hours	63	65	67	$^{\circ}$ C
humidity test	90 ~ 95% RH for 5 hours	38	40	42	$^{\circ}$ C
RoHS	yes				

## FREQUENCY RESPONSE CURVE

parameter	conditions/description
potentiometer range	50 dB
rectifier	RMS
lower limit frequency	20 Hz
wr. speed	100 mm/sec
zero level	50 dB



REV.	DESCRIPTION	DATE
A	NEW DRAWING	7/3/2007
B	dimension updates	9/29/2009
C	dimension update to non-critical features	4/13/2010



MOUNTING NOTICE  
AT LEAST 0.8 mm FOR  
DIAPHRAGM MOVING

TOLERANCE:  
±0.5mm UNLESS OTHERWISE  
SPECIFIED



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TITLE: LOW PROFILE SPEAKER		REV: C
PART NO. CLS0231MP-1	UNITS: MM [INCHES]	
DRAWN BY: ZRJ	APPROVED BY:	SCALE: 2:1

PC FILE NAME:  
CLS0231MP-1

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