



EM SERIES

STANDARD



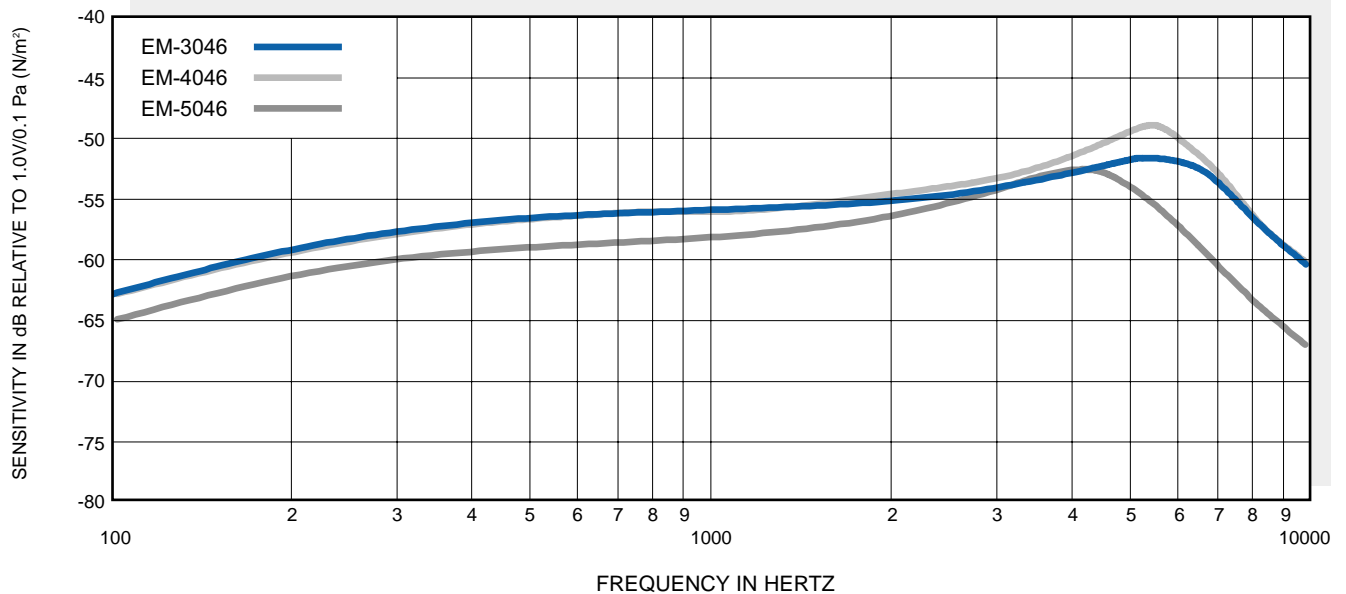
Actual Size

Features

- Electret condenser microphone
- Rugged construction to withstand severe environmental conditions
- Most popular Knowles microphone
- High resistance to mechanical shock
- Low vibration sensitivity
- Various responses available
- Ideal for ITC and CIC applications
- Available with RFI suppression



Standard Response



Open circuit sensitivity with 1.3VDC supply

Knowles

data sheet

Power Requirements

Supply Voltage (V_s)
 range: 0.9 to 10.0V_{DC}
 typical: 1.3V_{DC}

Quiescent Current Drain (@ $V_s = 1.3V_{DC}$)
 21 μ A typical, 30 μ A for 5000 series
 50 μ A maximum, 80 μ A for 5000 series

Performance

Response/Sensitivity
 see curves, pages 1, 4-6

Power Supply Feedthrough Attenuation
 typical: 11dB, output-referred

Sensitivity Range @ primary test frequency
 Ski Slope and Step responses: ± 4 dB
 all other responses: ± 3 dB

Load Voltage (V_L)
 range: 0.2 to 0.9V_{DC}
 typical: 0.4V_{DC}

Low Supply Voltage Sensitivity Loss
 (V_s reduced from 1.3 to 0.9V_{DC})
 typical: 0.4dB
 maximum: 3.0dB

Output Noise Level
 (A-weighted)
 typical: -103dBV*
 maximum: -97.0dBV (Ski Slope models)

Humidity Coefficient of Sensitivity
 typical: 0.03dB per %RH
 (in the absence of condensation)

Input-Referred Noise Level*
 (A-weighted, 1kHz ref.)
 typical: 28dB SPL
 maximum: 31dB SPL

Output Impedance @ 1kHz
 range: 2.8 to 6.8k Ω
 nominal: 4.4k Ω
5000 Series
 range: 2.0 to 4.0k Ω
 nominal: 2.8k Ω

Input-Referred Vibration Sensitivity*
 (1g acceleration, 1kHz ref.)
 maximum: 66dB SPL

Temperature Range
 operating: -17°C to 63°C
 storage: -40°C to 63°C

Acoustic Polarity
 Increased pressure at sound inlet
 causes a positive going voltage to
 appear at the output terminal, relative
 to the negative terminal

ESD Tolerance
 MIL-STD-750 Class 1 rating
 EOS/ESD-S5.1-1993 Class 2 rating

*For standard, damped and undamped models only

Mechanical

Weight
 0.08 grams

Case Material
 Type 305 stainless steel

Dimensions
 See outline drawings, page 7

Solder Content
 Sn62Pb36Ag02

Optional Soldering Fixture

Base: ET-3838
 Nest Plate: ET-804

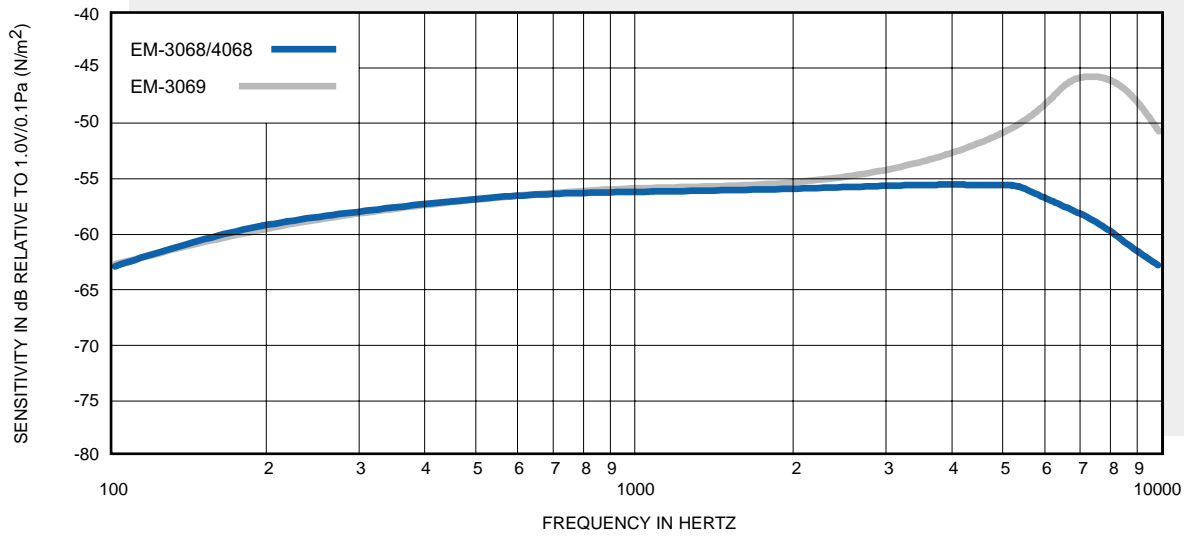
Model	Port	Response
EM-3046	12B	Standard
EM-3047	12B	6dB/octave Ski Slope
EM-3056	12KP	Standard
EM-3058	12B	Step
EM-3059	12B	12dB/octave Ski Slope
EM-3068	12B	Damped Peak
EM-3069	12Kn	Undamped Peak
EM-3070	12Kn	6dB/octave Ski Slope
EM-3084	12Kn	12dB/octave Ski Slope
EM-4046	12SL	Standard
EM-4047	12SL	6dB/octave Ski Slope
EM-4058	12SL	Step
EM-4059	12SL	12dB/octave Ski Slope
EM-4068	12SL	Damped Peak
EM-5046	12SL	Standard (Screenless, Shifted Peak)
EM-5047	12SL	6dB/octave Ski Slope (Shifted Peak)
EM-5059	12SL	12dB/octave Ski Slope (Shifted Peak)
EM-7012	12B	6dB/octave Ski Slope, Damped
EM-7013	12B	12dB/octave Ski Slope, Damped
EM-7079	12n	Undamped
EM-7080	12n	6dB/octave Ski Slope
EM-7131	12SL	6dB/octave Ski Slope, Damped
EM-7133	12SL	12dB/octave Ski Slope, Damped
EM-7451	12SL	6dB/octave Ski Slope, Damped
EM-7452	12SL	12dB/octave Ski Slope, Damped
EM-9867	12KP	6dB/octave Ski Slope
EM-9896	12KP	12dB/octave Ski Slope
EM-9932	12KP	Damped Peak

Microphones are also available with RFI suppression filters.

Other model variations available upon request. Contact Knowles Electronics for details.

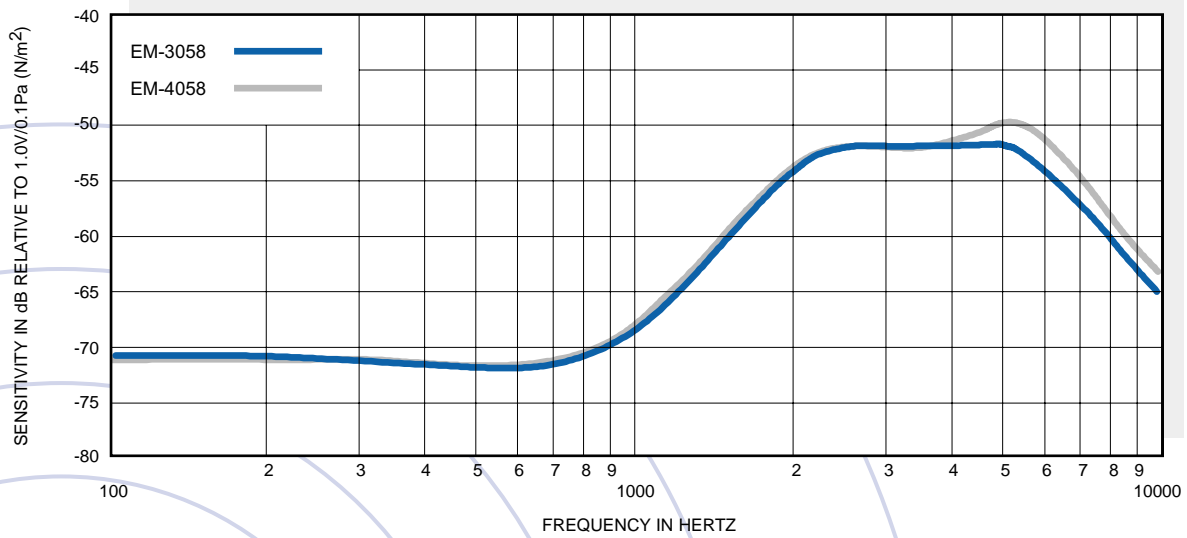


Damped and Undamped Peak Response



Open circuit sensitivity with 1.3VDC supply

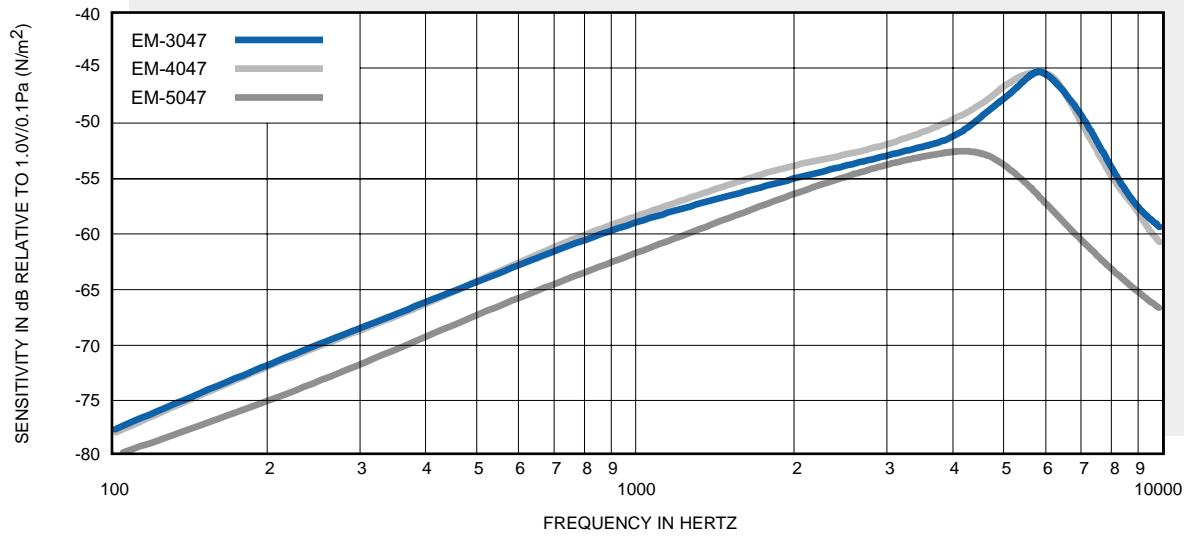
Step Response



Open circuit sensitivity with 1.3VDC supply

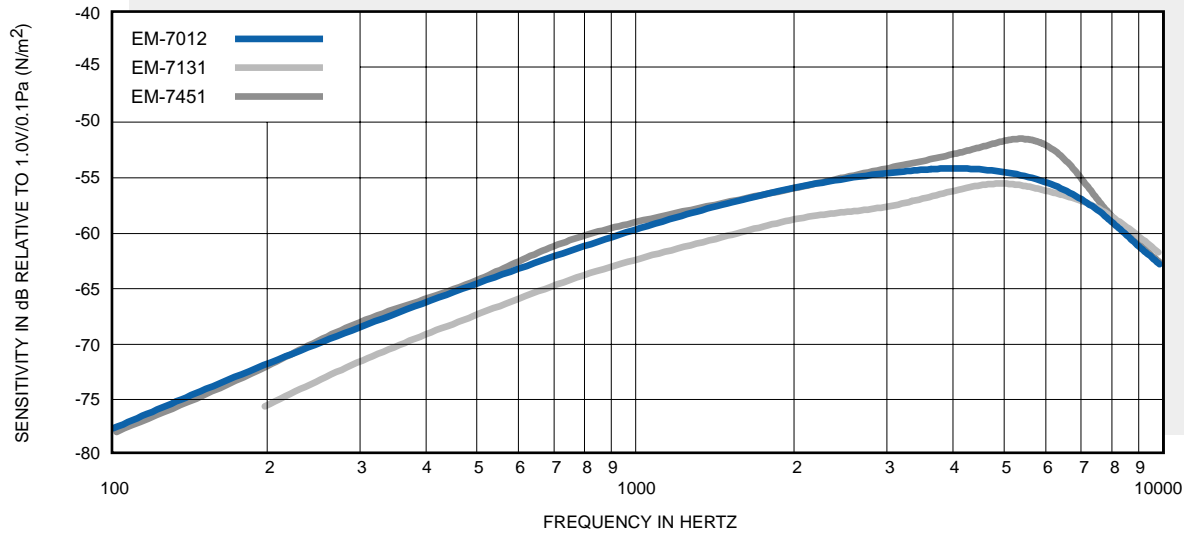


6dB/Octave Ski Slope Response



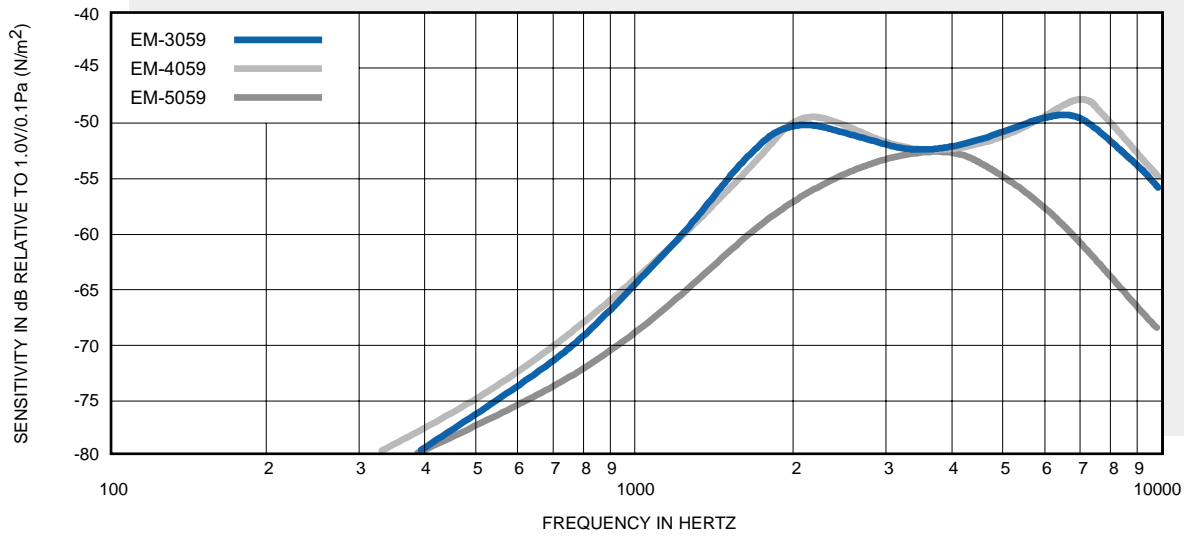
Open circuit sensitivity with 1.3VDC supply

6dB/Octave Ski Slope, Damped Response



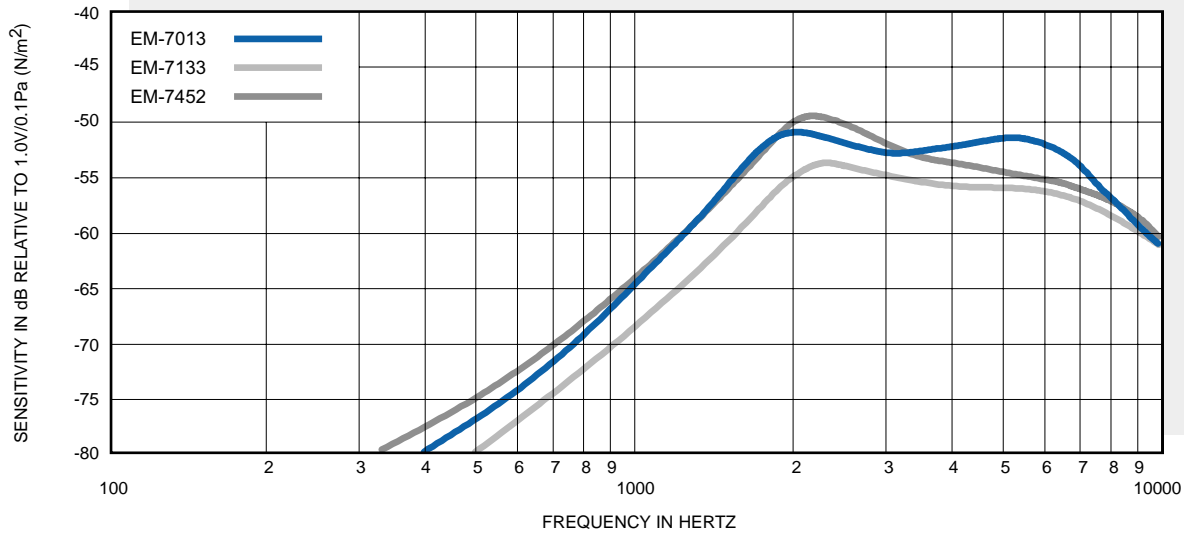
Open circuit sensitivity with 1.3VDC supply

12dB/Octave Ski Slope Response



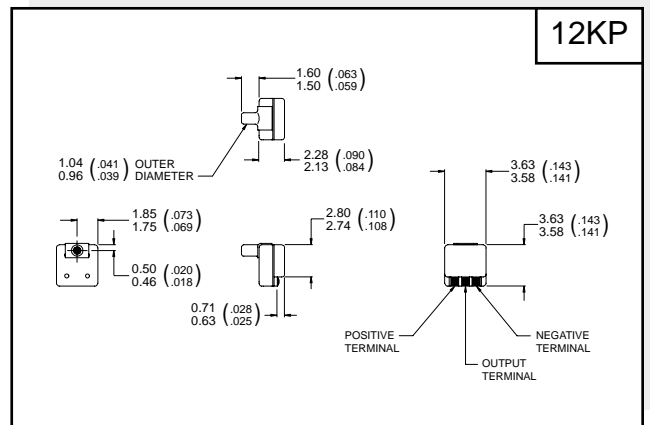
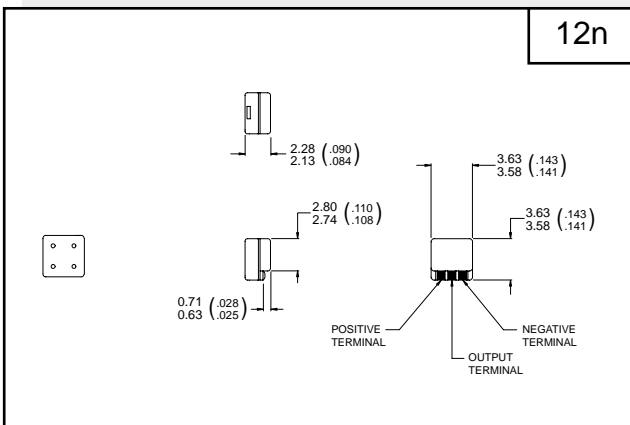
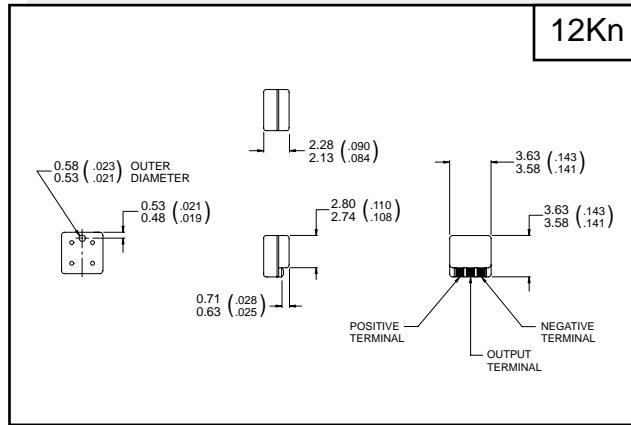
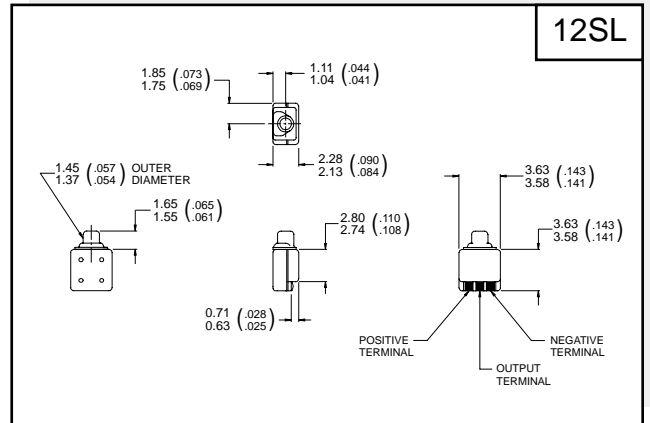
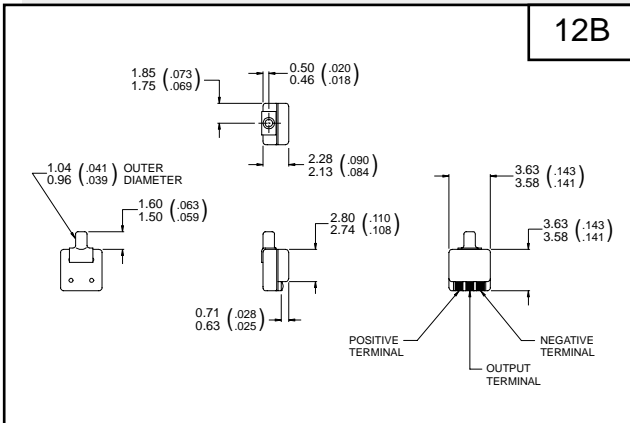
Open circuit sensitivity with 1.3VDC supply

12dB/Octave Ski Slope, Damped Response



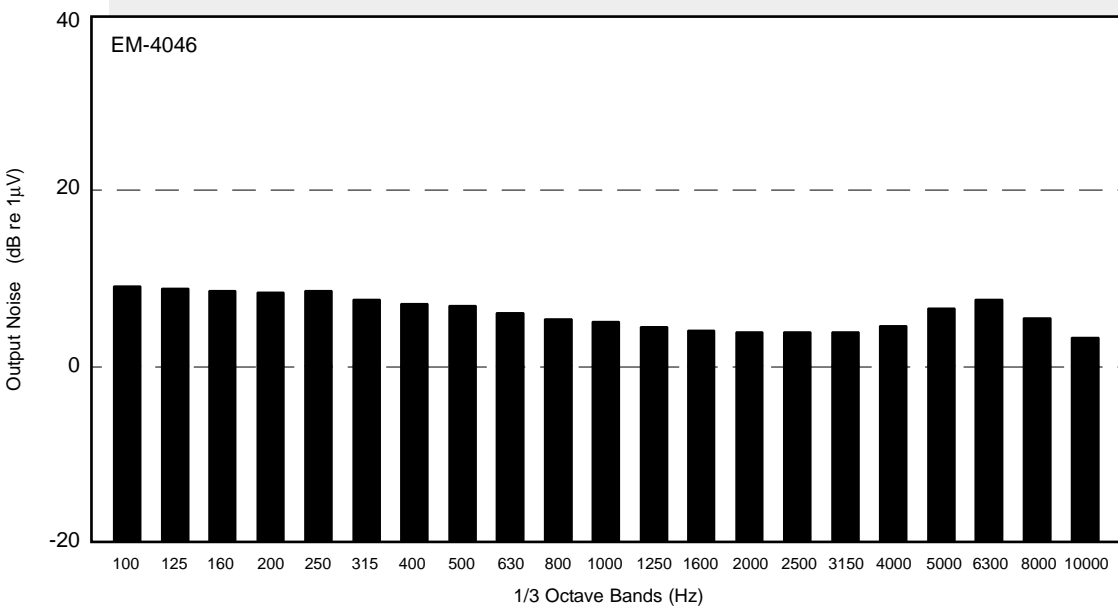
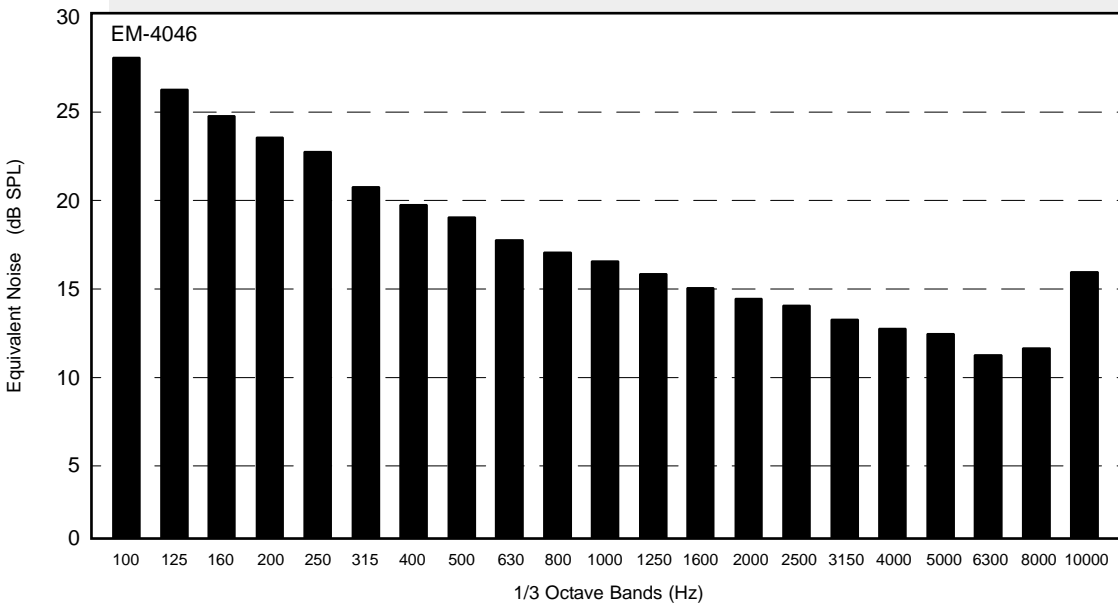
Open circuit sensitivity with 1.3VDC supply

Signal Port Locations



Dimensions in millimeters (inches)

1/3 Octave Equivalent Noise & Output Noise



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NOTE: Specifications are subject to change without notice. The information on this Data Sheet reflects typical applications. Specific test specifications defining each model are available by requesting Outline Drawing Sheets 1.1 and Performance Specifications Sheets 2.1 of that model number. Knowles' responsibility is limited to compliance with the Outline Drawing and the Performance Specification application to the subject model at time of manufacture.

Knowles Electronics, Inc.