

Series 9000 Transducer

SensComp's Series 9000 Piezoelectric transducer is specifically intended for operation in air at ultrasonic frequencies.

Features

48 kHz Piezoelectric Transducer
Asymmetrical Beam Angle of 16° by 38° (typ.)
Rugged Construction
Suited for Harsh Environments
Specifically Intended for Operation in Air at Ultrasonic Frequencies

Part No.

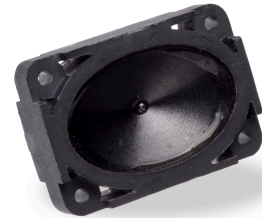
*PID# 618417LF – Series 9000 Transducer
*RoHS Compliant

Benefits

Meets or Exceeds SAE Specification J1455 for Heavy-duty Trucks
Withstands Demands of Automotive Exteriors

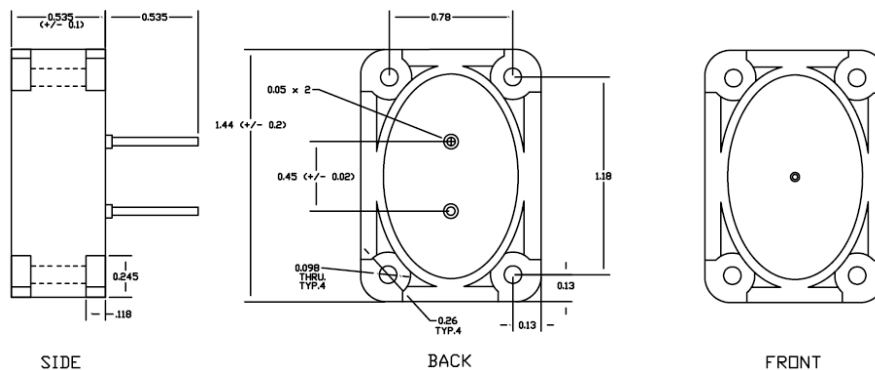
Applications

Level Measurement, Proximity Detection, Presence Detection, Robotics, Educational Products
Operation in Outdoor Environments



Description

The Piezoelectric based Series 9000 transducer is specifically intended for operation in air at ultrasonic frequencies. Its rugged construction and unique asymmetrical beam pattern make it an ideal choice to withstand the rigorous demands of the automotive exterior and other harsh environments. This transducer design is intended to meet or exceed the guidelines set forth in SAE specification J1455 for heavy-duty trucks.



Series 9000 Specifications

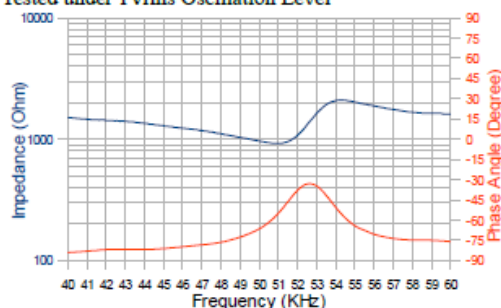
Operating Frequency48 KHz ± 1 kHz
Ringing1.2 mS max.
Bandwidth (97dB) Transmitter.....15 kHz
 (-80dB) Receive.....15 kHz
Transmitting Sound Pressure Level.....100 dB min
 0dB re 0.0002 μ bar at 30 cm,
 10 Vrms, at 48 kHz
Receiving Sensitivity-80 dB min
 at 48 kHz; 0dB = 1 volt/ μ bar
Total Beam AngleSee Graph
 Asymmetrical.....16° typ. x 38° typ.
Suggested AC Driving Voltage.....10-120Vp-p
Driving Voltage (10% duty cycle)140Vp-p max
Impedance1000 ohms $\pm 10\%$
 at resonant frequency 48 kHz
Capacitance at 1 KHz $\pm 20\%$ 2400 pF
Construction
Outer HousingValox Plastic
Cone.....Anodized Aluminum
Dimensions in inches.....See Drawing

Operating Temperature.....-30 to +70°C
Storage Temperature-40 to +80°C
Relative Humidity (non condensing)98% at 38°C
Salt Spray5% @ 95% Rh
Altitude Operating12,000 feet
 Non-Operating.....40,000 feet
Dust, Sand, Gravel Bombardment.....
 1 quart #50 Abrasive Sand, 3.6 ft. drop,
 (20) Repetitions
Mechanical Vibration
 10 G Random Triaxial Vibration,
 50 Hz – 2 KHz for 1 hour
Mechanical Shock
 Survives a 3 foot drop on concrete floor
Steam Cleaning
Input Pressure
 4.5 bf/in² min at 200° F
Pressure Wash
 102 lb/in² at 104° F at 150 gal/minute
Chemical Exposure
 Gasoline, Solvent, Cleaners, Lubricants

All specifications are taken @ 25°C typ.

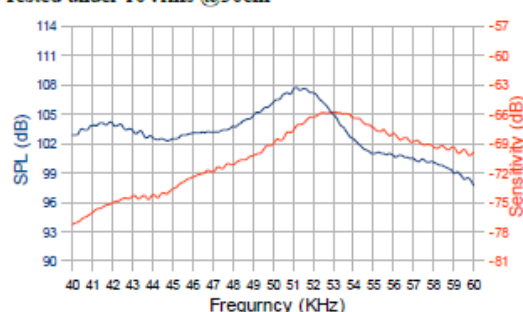
Impedance/Phase Angle vs. Frequency

Tested under 1Vrms Oscillation Level



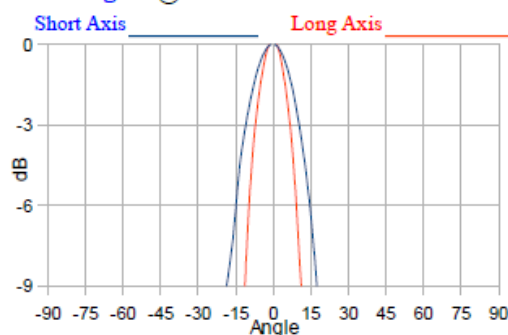
Sensitivity/Sound Pressure Level

Tested under 10Vrms @30cm



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Beam Angle: @48KHz



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