

# Ultrasonic Sensor



RoHS  
Compliant



## Applications

- Back sonar of automobiles
- Parking meters
- Water level meters

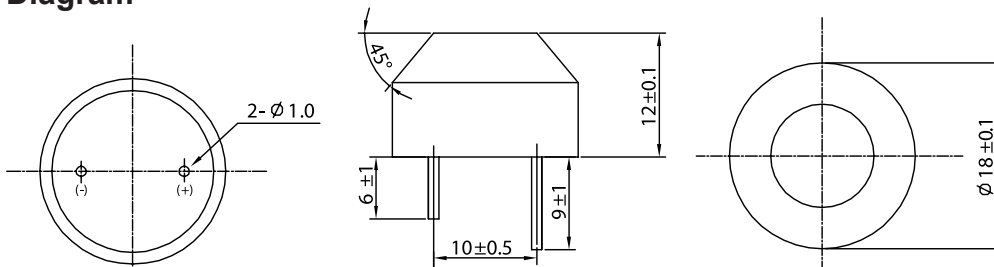
## Features

- Water proof and dual use
- Compact and light weight
- High sensitivity and sound pressure
- Less power consumption
- High reliability

## Technical Terms

Item	Specification	Unit
Construction	Water Proof	-
Using Method	Dual Use	-
Centre Frequency	40 ±1kHz	kHz
Sound Pressure Level	≥90(30cm/10Vrms )	dB
Sensitivity	≧-75dB/V/μbar	dB
Echo Pulse Width	≥360μs (at 1.2m)	μs
Ringing Time	≤1.8ms	ms
Capacitance	2100pF±25% at 1kHz	pF
Directivity	110×50deg	°
Operating Temp. Range	-40 to +85	°C
Storage Temp. Range	-40 to +85	°C
Detectable Range	0.3 to 2	m
Maximum Input Voltage	160Vp-p	Vp-p
Housing Material	Aluminium	-

## Diagram

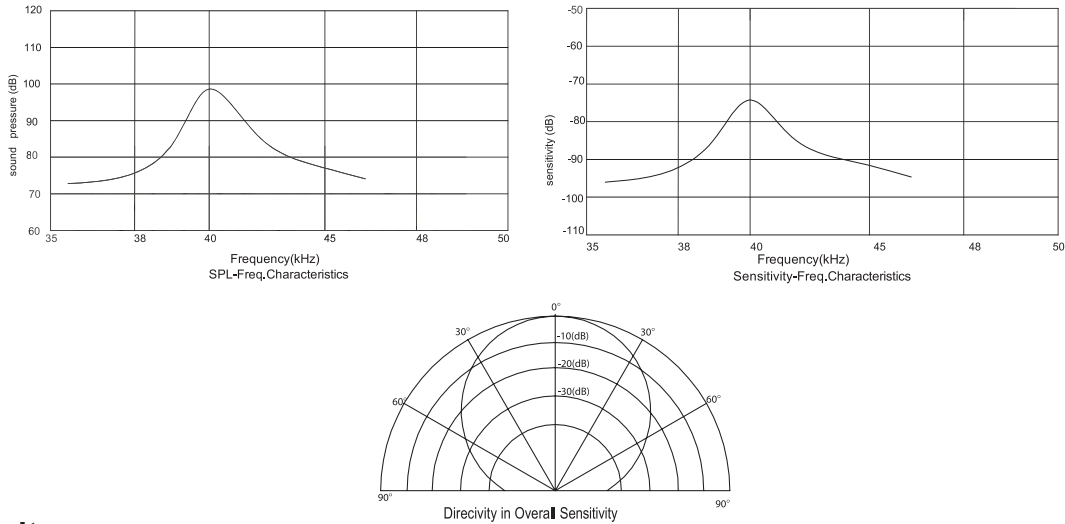


Dimensions : Millimetres

Newark.com/exclusive-brands  
Farnell.com/exclusive-brands  
Element14.com/exclusive-brands

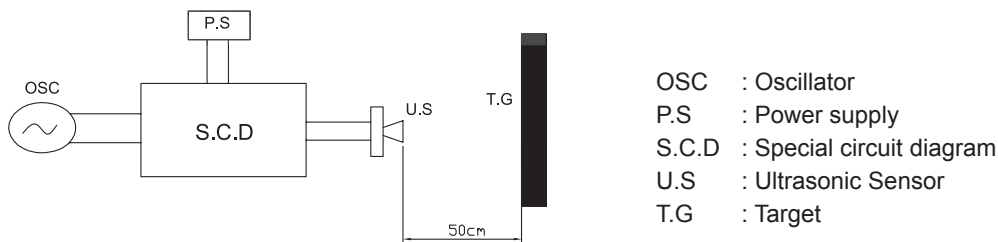


## Beam Pattern

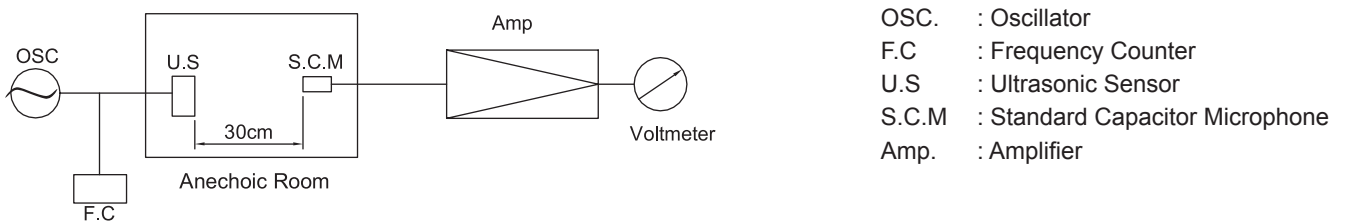


## Test Circuit

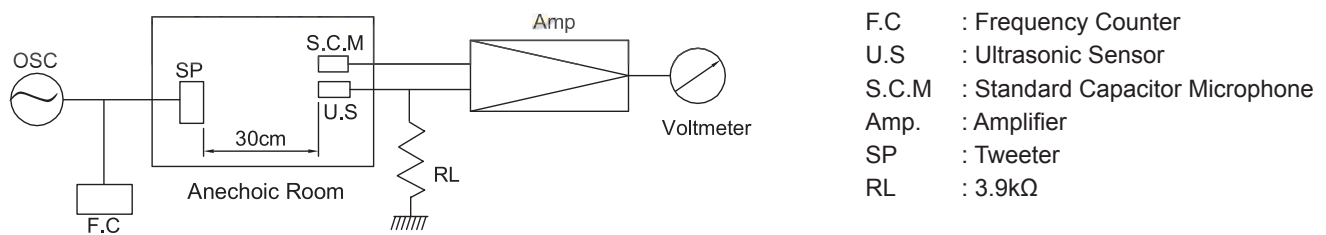
Echo&Rest.Resonant Time test circuit



S.P.L test circuit



sensitivity test circuit



## Reliability Test

High temperature life test	
Temperature	+85 ±3°C
Duration	500hrs
Low temperature life test	
Temperature	-40 ±3°C
Duration	500hrs
Heat Cycle Test	
Temperature	+85±3°C 1hour -40±3°C 1hour
Cycles	100 cycles
Humidity Test	
Temperature	+65 ±2°C
Relative Humidity	90 ~ 95%
Duration	500hrs
Vibration Test	
Vibration Frequency	10~ 200Hz
Sweep Period	15min
Acceleration	43.12m/s <sup>2</sup> (4.4G)
Direction	3 (x, y & z)
Time	96hours/direction
Shock test	
Acceleration	sine 980 m/s <sup>2</sup> (100G)
Direction	3 directions
Shock time	3 time/directions
Drop test	
Height	1m onto concrete floor
Times	10 times

### Connector soldering check:

Immersing terminal up to 1mm below base in soldering bath at 260°C 10 seconds

### Notice:

The variation of the S.P.L at 40 kHz is within 3dB compared with initial figures at 25°C in 24 hours after above test condition.

## Part Number Table

Description	Part Number
Transceiver, 40kHz, 18mm, Metal	MCUSD18A40B12RS

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