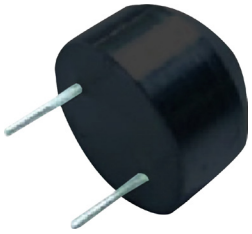
Ultrasonic Sensor
Transmitter

RoHS Compliant



Applications:

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

Features:

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

Technical Specification

Item	Specification		Unit
Construction	Water Proof		-
Using Method	Transmitter	Receiver	-
Frequency	40 ±1kHz	39 ±1kHz	Hz
Sound Pressure Level	min.97dB (10V/30cm)	-	dB
Sensitivity	-	min. -75dB/V/μbar	dB
Capacitance	2,100pF ±25% at 1kHz		pF
Directivity	80°		°
Operating Temperature Range	-40°C to +85°C		°C
Storage Temperature Range	-40°C to +85°C		°C
Allowable Input Voltage	160Vp-p		Vp-p
Housing Material	Aluminium		-

Part Number Explanation

MC	US	T	18	A	40	B	12	R	S
1	2	3	4	5	6	7	8	9	10

Item	Description
1	Brand Name
2	Ultrasonic Sensor
3	T : Transmitter
4	Diameter (e.g. 18=18mm)
5	A : Aluminium

Item	Description
6	Frequency (e.g. 40=40kHz)
7	B : Black
8	Height (e.g. 12=12mm)
9	RoHS
10	Splash Proof

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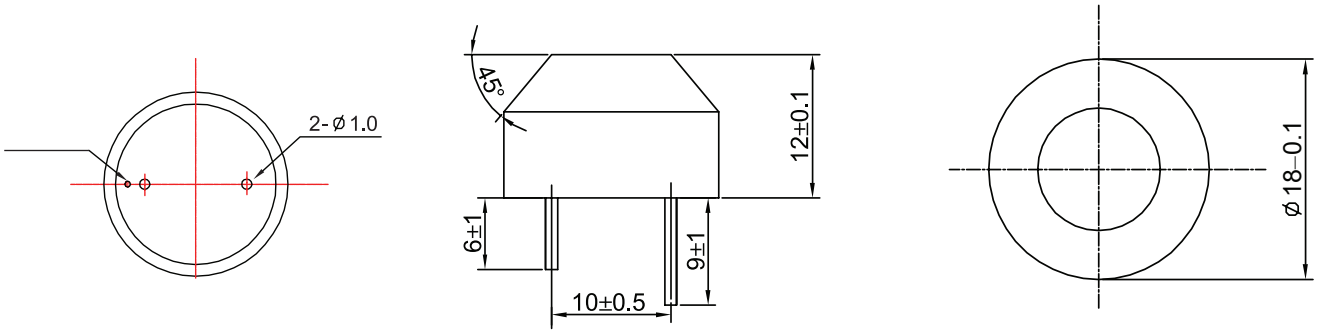
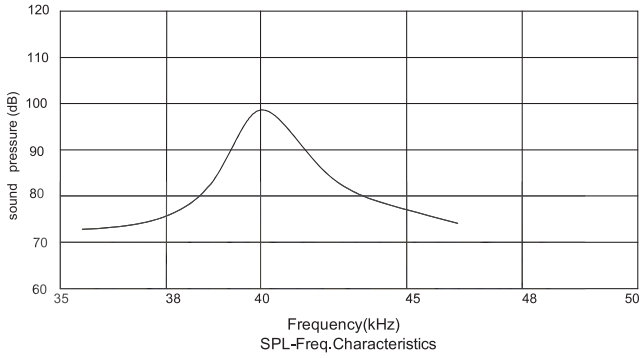
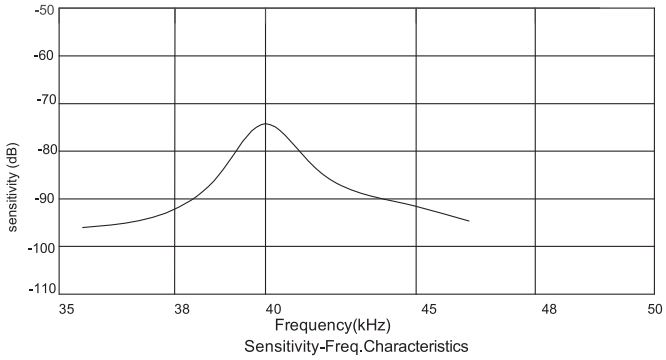
Drawing:

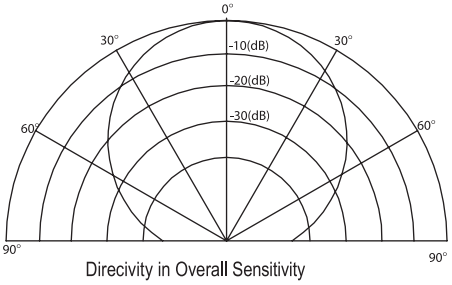


Dimensions : Millimetres

Beam Pattern:

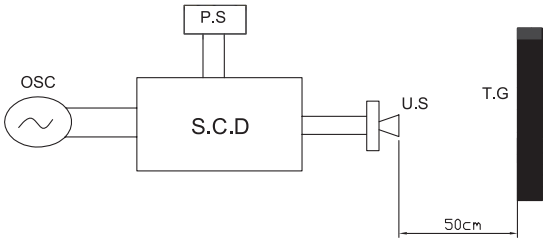






Test Circuit:

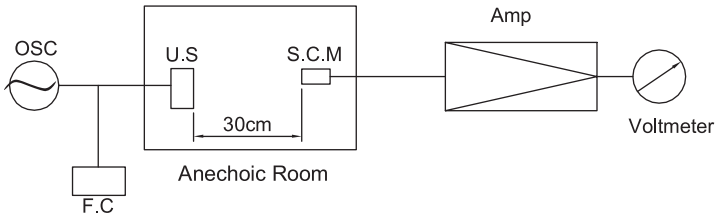
Echo&Rest.Resonant Time test circuit



OSC : Oscillator
P.S : Power supply
S.C.D : Special circuit diagram
U.S : Ultrasonic Sensor
T.G : Target

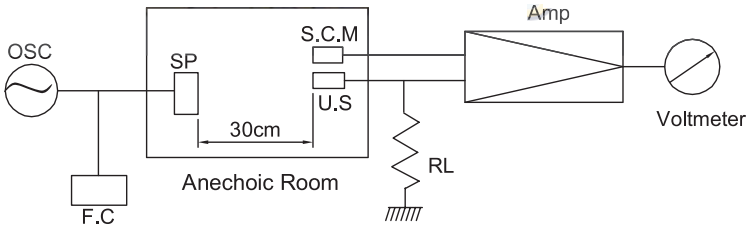
Ultrasonic Sensor
Transmitter

S.P.L test circuit



OSC. : Oscillator
F.C : Frequency Counter
U.S : Ultrasonic Sensor
S.C.M : Standard Capacitor Microphone
Amp. : Amplifier

sensitivity test circuit



OSC. : Oscillator
F.C : Frequency Counter
U.S : Ultrasonic Sensor
S.C.M : Standard Capacitor Microphone
Amp. : Amplifier
SP : Tweeter
RL : 3.9kΩ

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/s² (4.4G)
Direction	3 (x, y & z)
Time	96hours/direction
Shock test	
Acceleration	sine 980 m/s²(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
Transmitter, 40kHZ, 18mm, Aluminium	MCUST18A40B12RS