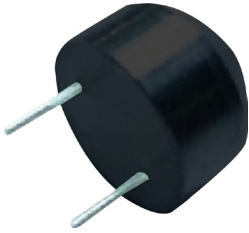


Ultrasonic Sensors

MCUST18A40B12RS



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	Item	Description
1	Brand Name	6	Frequency (e.g. 40=40kHz)
2	Ultrasonic Sensor	7	B : Black
3	T : Transmitter	8	Height (e.g. 12=12mm)
4	Diameter (e.g. 18=18mm)	9	RoHS
5	A : Aluminium	10	Splash Proof

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www.newark.com

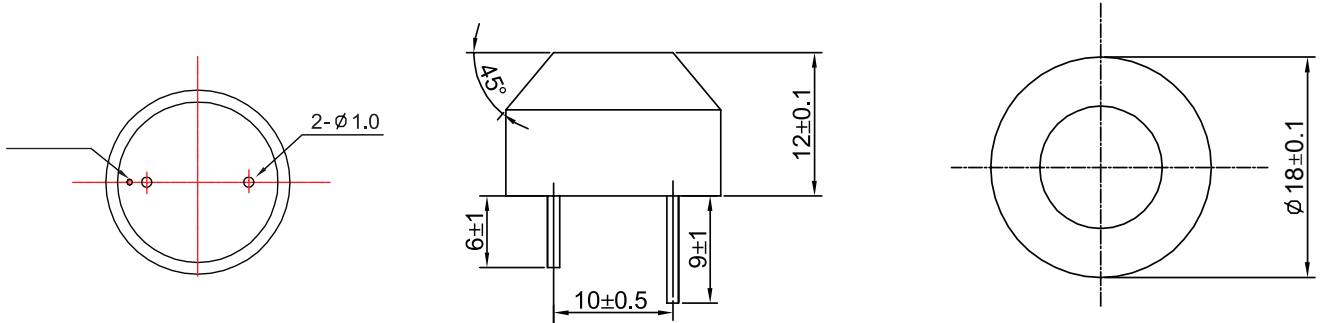


Ultrasonic Sensors

MCUST18A40B12RS

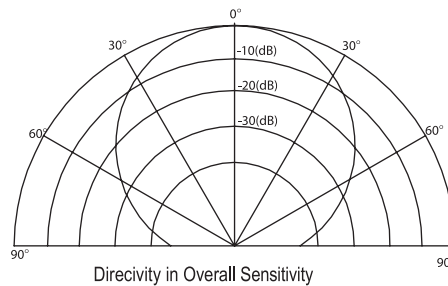
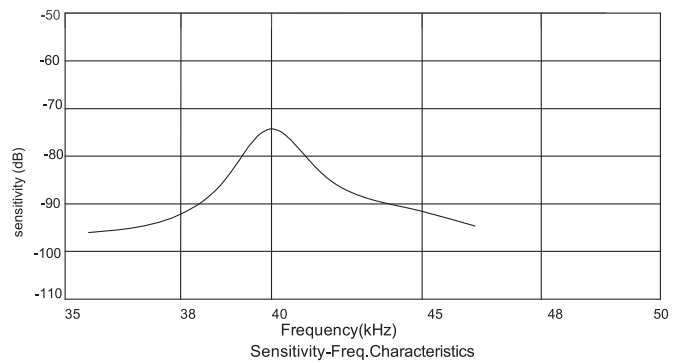
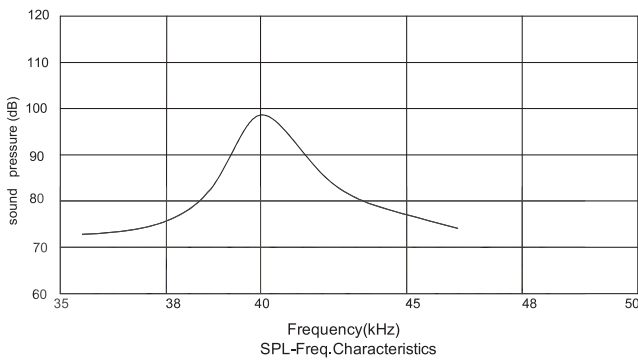


Drawing:



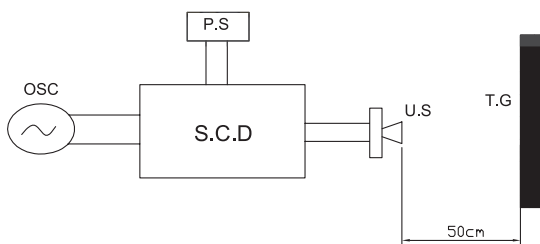
Dimensions : Millimetres

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

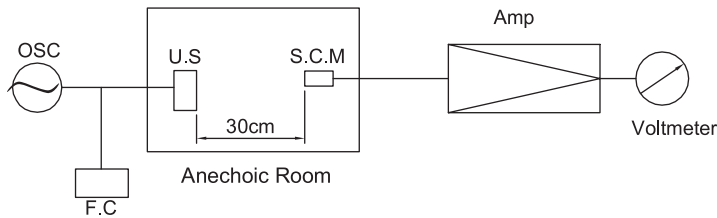


Ultrasonic Sensors

MCUST18A40B12RS

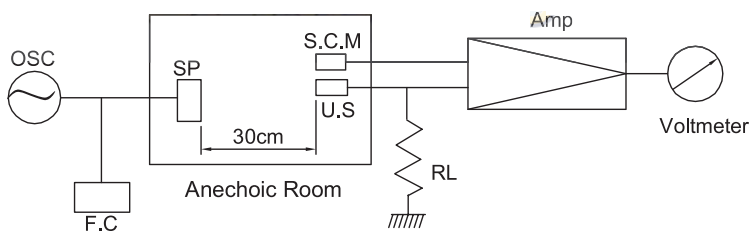


S.P.L test circuit



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/s ² (4.4G)
Direction	3 (x, y & z)
Time	96hours/direction
Shock test	
Acceleration	sine 980 m/s ² (100G)
Direction	3 directions
Shock time	3 time/directions



Ultrasonic Sensors

MCUST18A40B12RS



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

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