

MIDAS

Sensors

design • manufacture • supply

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MCUSR18A40B12RS/ MCUST18A40B12RS

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Midas Ultrasonic Sensors Part Number System

MC	US	T	16	P	40	B	12	R	S
1	2	3	4	5	6	7	8	9	10

1 = **MC:** Midas Components

2 = **US:** Ultrasonic Sensor **PV:** Piezo Vibration

3 = **T:** Transmitter **R:** Receiver **D:** Dual

4 = **Diameter:** (e.g. 16 = 16mm)

5 = **P:** Plastic **A:** Aluminium

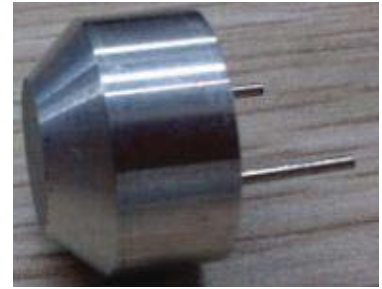
6 = **Frequency** (e.g. 40 = 40KHz)

7 = **B:** Black **S:** Silver

8 = **Height** (e.g. 12 = 12mm)

9 = **RoHS**

10 = **O:** Open **S:** Splash Proof



1.Applications

Back sonar of automobiles, Parking meters, Water level meters

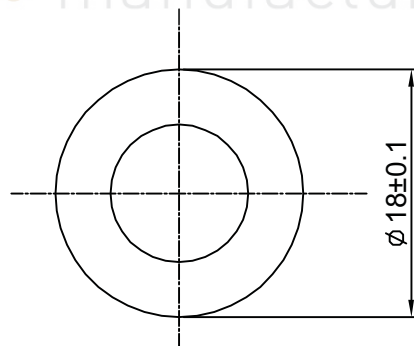
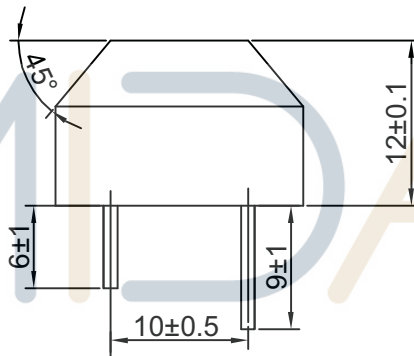
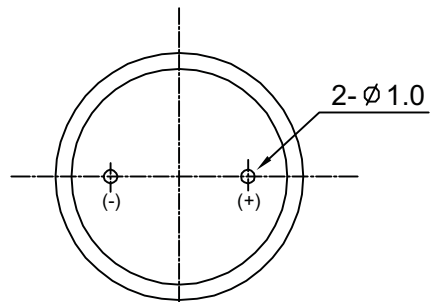
2.Features

- 2.1) Water proof and fission
- 2.2) Compact and light weight.
- 2.3) High sensitivity and sound pressure.
- 2.4) Less power consumption.
- 2.5) High reliability

3.Technical terms

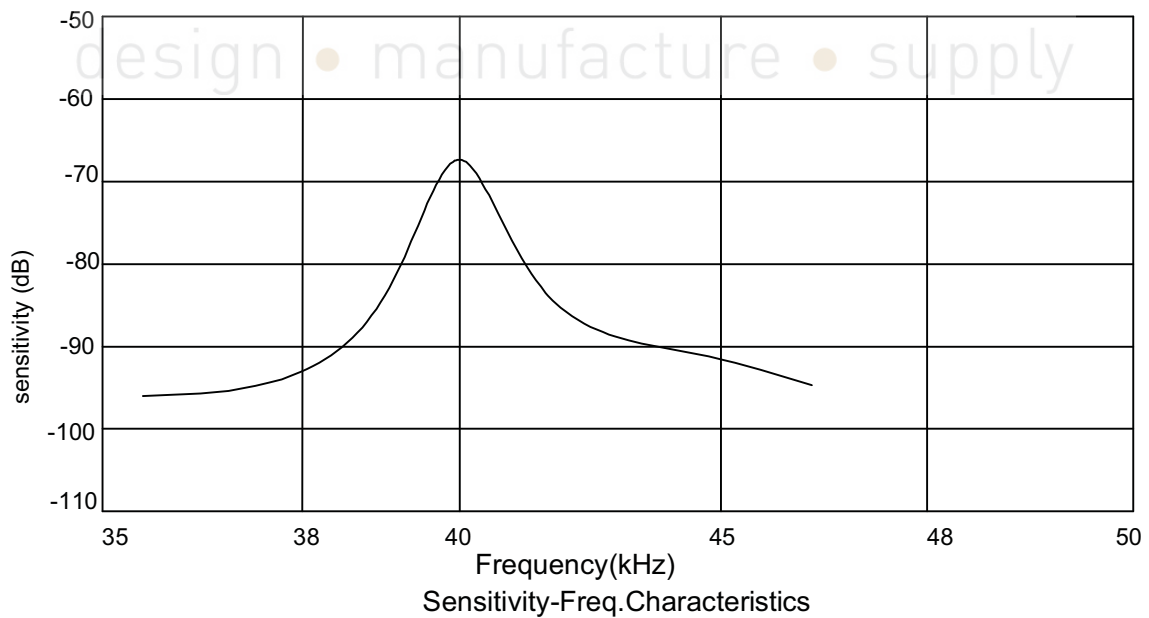
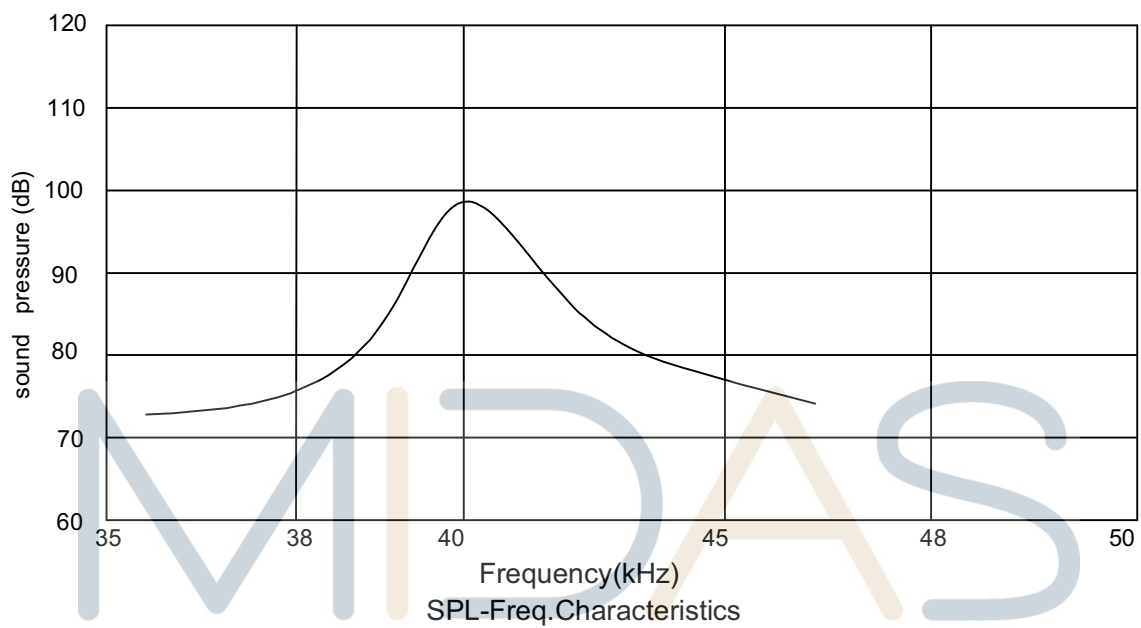
No.	Item	Unit	Specification	
1.	Type			
2.	Construction		Water Proof	
3.	Using Method		Transmitter	Receiver
4.	Frequency	Hz	40±1K Hz	39±1K Hz
5.	Sound Pressure Level	dB	min.97dB (10V/30cm)	---
6.	Sensitivity	dB	---	min. -74dB /V/ μbar
7.	Capacitance	pF	2100pF±25% at 1KHz	
8.	Directivity	°	80deg	
9.	Operating Tem.Range	°C	-40 to +85 °C	
10.	Storage Tem.Range	°C	-40 to +85 °C	
11.	Allowable Input Voltage	Vp-p	160Vp-p	
12.	Housing Material		Aluminum	

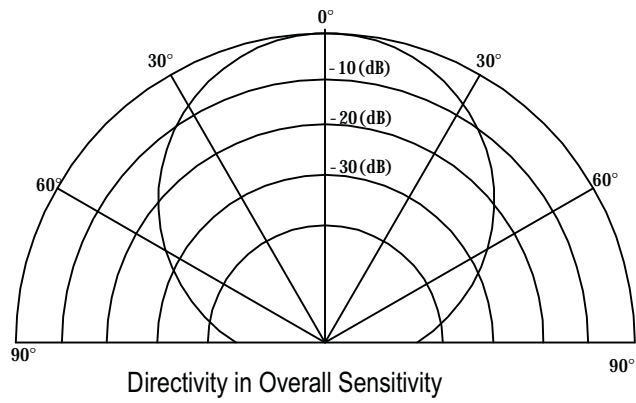
4.Drawing



unit:mm

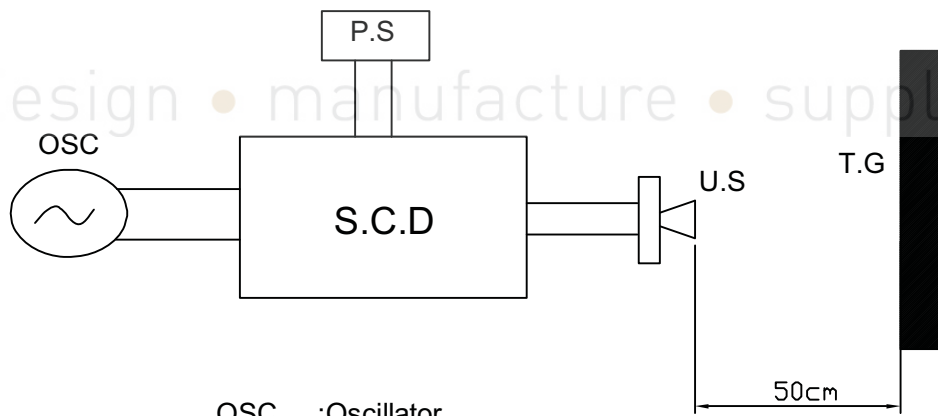
5. Beam Pattern





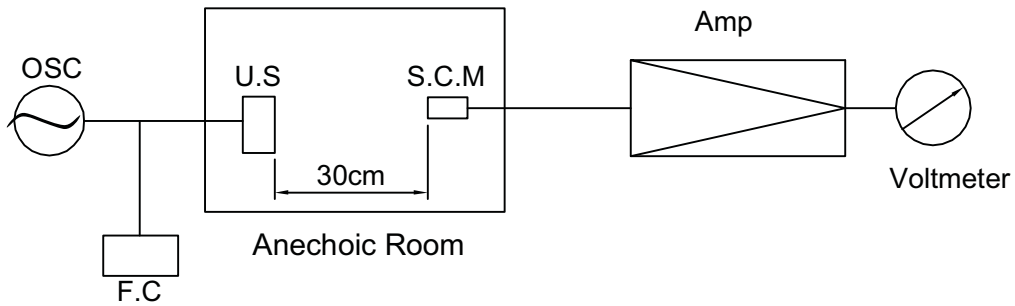
6. Test circuit

Echo&Rest.Resonant Time test circuit



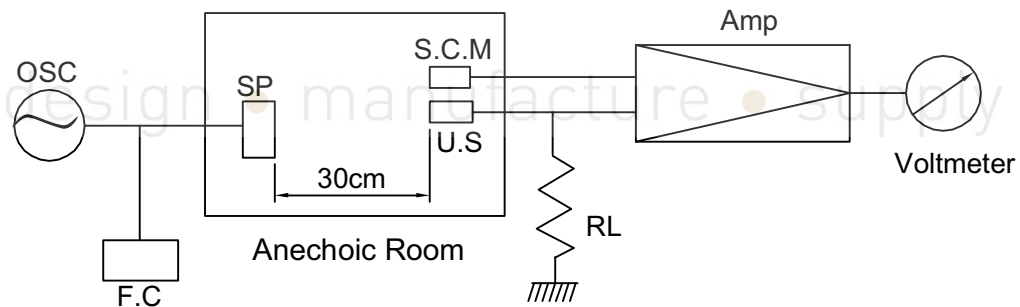
- OSC :Oscillator
- P.S :Power supply
- S.C.D :Special circuit diagram
- U.S :Ultrasonic Sensor
- T.G :Target

S.P.L test circuit



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

sensitivity test circuit



OSC. :Oscillator
 F.C. :Frequency Counter
 U.S. :Ultrasonic Sensor
 S.C.M:Standard Cappacitor Microphone
 Amp. :Ampifier
 SP :Tweeter
 RL : 3.9K Ω

7. Reliability Test

7.1	High temp.life test	
	Temperature	+ 85±3°C
	Duration	500hrs
7.2	Low temp.life test	
	Temperature	-40±3°C
	Duration	500hrs
7.3	Heat Cycle Test	
	Temperature	+ 85±3°C 1hour -40±3°C 1hour
	Cycles	100cycles
7.4	Humidity Test	
	Temperature	+65±2°C
	Relative Humidity	90~95%
	Duration	500hrs
7.5	Vibration Test	
	Vibration Frequency	10~ 200Hz
	Sweep Period	1 5min
	Acceleration	43.12m/s ² (4.4G)
	Direction	3(x.y&z)
	Time	96hours/direction
7.6	Shock test	
	Acceleration	sine 980 m/s ² (100G)
	Direction	3directions
	Shock time	3 time/directions
7.7	Drop test	
	Height	1m onto concrete floor
	Times	10 times

7.8 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.

8. Notice

8.1 Export Control <For customers outside The People's Republic of China>

No Midas products should be used or sold, through any channels, for use in the design, development, production, utilization, maintenance or operation of, or otherwise contribution to (1) any weapons (Weapons of Mass Destruction [nuclear, chemical or biological weapons or missiles] or conventional weapons) or (2) goods or systems specially designed or intended for military end-use or utilization by military end-users.

8.2 Please contact our sales representatives or product engineers before using the products in the specification or catalogue for the applications listed below, which require especially high reliability for the prevention of defects which might directly damage a third party's life, body or property, or when one of our products is intended for use in applications other than those specified in this specification.

- a) Aircraft equipment or Aerospace equipment
- b) Undersea equipment and Power plant equipment
- c) Medical equipment and Transportation equipment (vehicles, trains, ships, etc.)
- d) Traffic signal equipment i Disaster prevention / crime prevention equipment
- e) Data-processing equipment including Application of similar complexity and/or reliability requirements to the applications listed above

8.3 Product specifications and catalogues are subject to change and our products in them may be discontinued without advance notice.

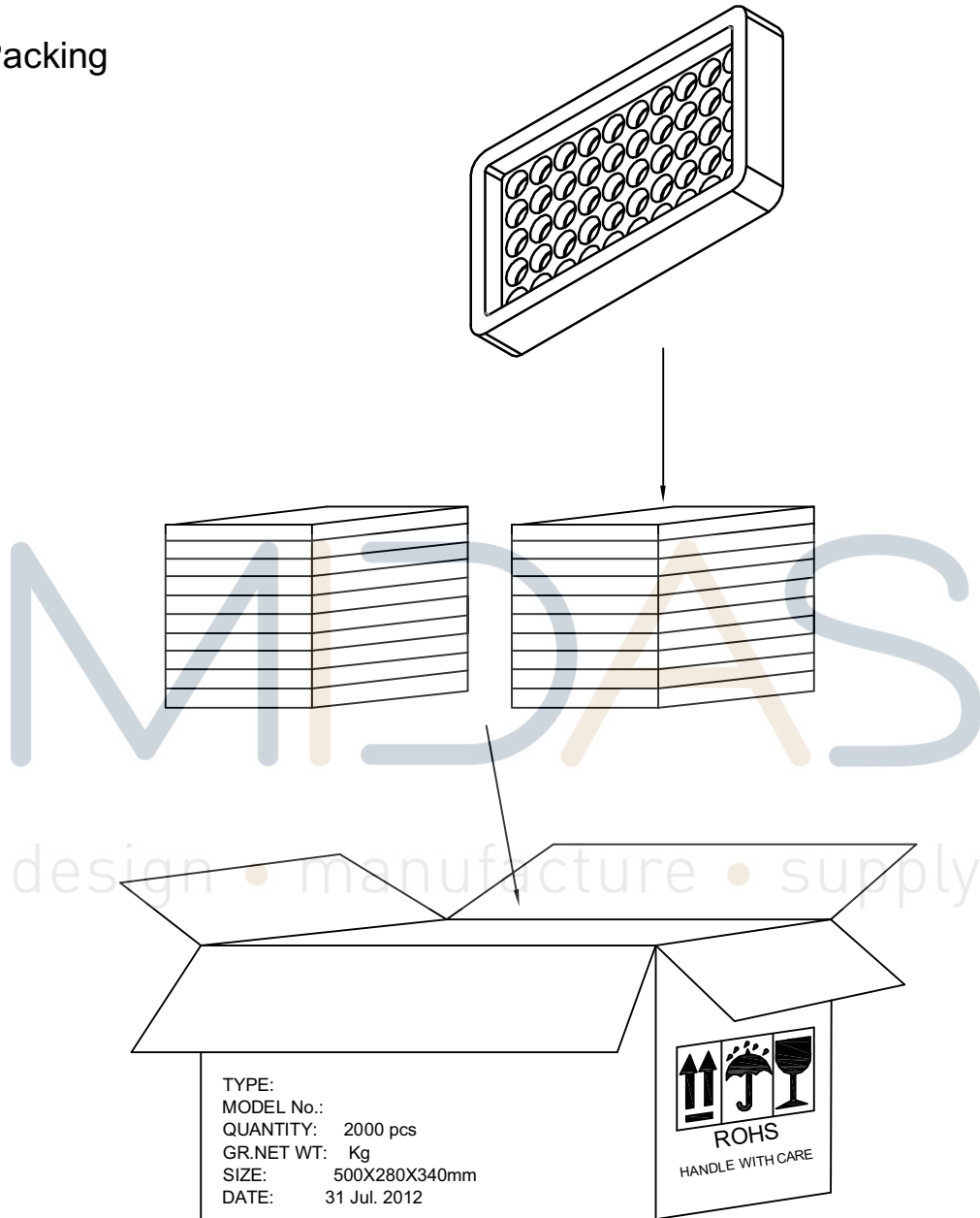
Please check with our sales representatives or product engineers before ordering. If there are any questions, please contact our sales representatives or product engineers.

8.4 Please read rating and CAUTION (for storage, operating, rating, soldering, mounting and handling) in this specifications in order to prevent smoking and/or burning, etc.

8.5 Please note that unless otherwise specified, we shall assume no responsibility whatsoever for any conflict or dispute that may occur in connection with the effect of our and/or a third party's intellectual property rights and other related rights in consideration of your use of our products and/or information described or contained in our specifications and catalogues. In this connection, no representation shall be made to the effect that any third parties are authorized to use the rights mentioned above under licenses without our consent.

8.6 No ozone depleting substances (ODS) under the Montreal Protocol are used in our manufacturing process.

9.Packing



- 1)50 pcs/tray
- 2)40 trays/carton
- 3)2000 pcs/carton in total
- 4)carton size: 500X280X340m m