



Descriptions

WF2718B is an omnidirectional, Bottom-ported, analog output

MEMS microphone. It has high performance and reliability.

WF2718B consists of an acoustic sensor, a low noise input buffer, and an output amplifier.

These devices are suitable for portable electronic devices where excellent wideband audio performance and RF immunity are required applications.

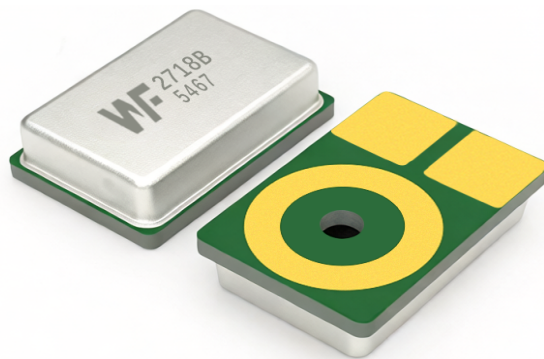
WF2718B is available in a thin 2.75mm*1.85 mm*0.9 mm proprietary OCLGA package. It is SMT compatible with no sensitivity degradation.

Features

- Small package
- Low Noise
- Flat Frequency Response
- Excellent RF immunity
- RoHS/Halogen free compliant
- Ultra-Stable Performance
- Standard SMD Reflow
- Omnidirectional

Applications

- Earphone
- Smart phones
- TWS Headset
- Laptop
- Portable music recorders





Absolute maximum ratings

Parameter	Absolute Maximum Rating	Units
VDD to Ground	-0.5, +3.6	V
OUT to Ground	-0.3, VDD + 0.3	V
Input Current to Any Pin	±5	mA
Temperature Range	-40 to +100	°C

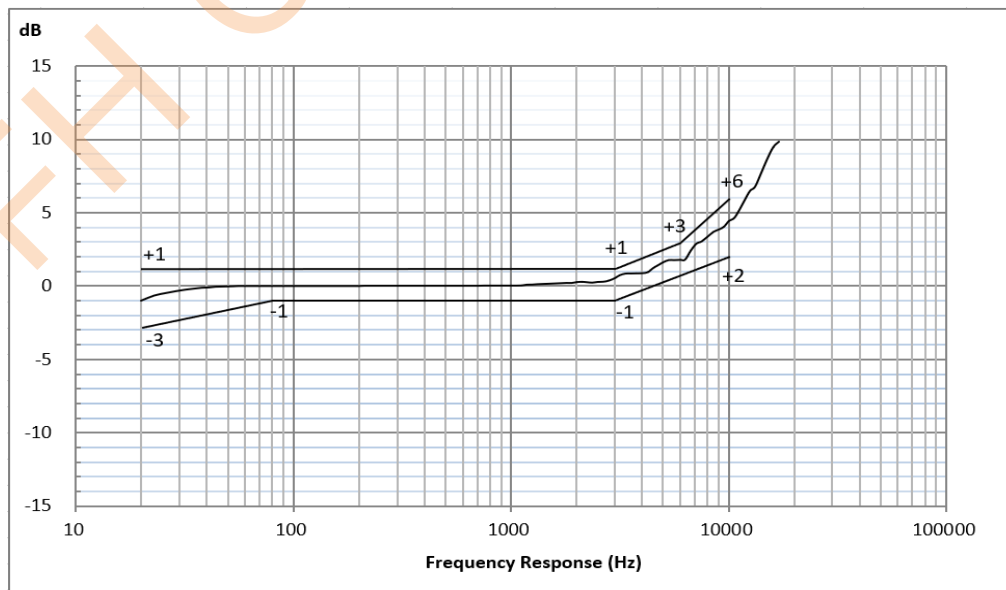
Stresses exceeding these "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only. Functional operation at these or any other conditions beyond those indicated under "Acoustic & Electrical Specifications" is not implied. Exposure beyond those indicated under "Acoustic & Electrical Specifications" for extended periods may affect device reliability.

ACOUSTIC & ELECTRICAL SPECIFICATIONS

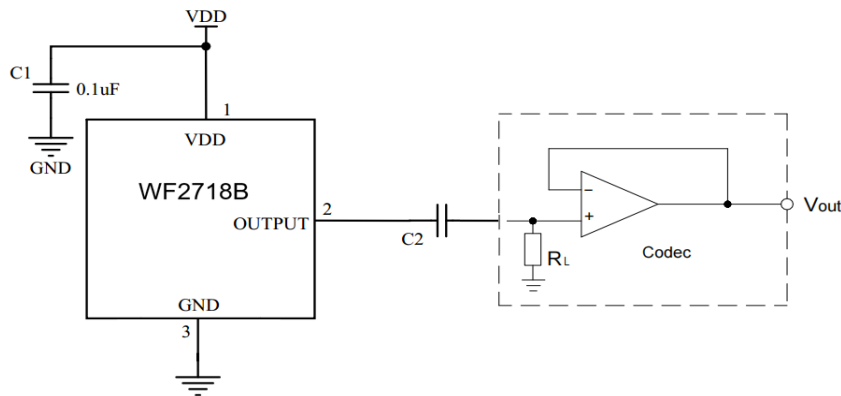
TEST CONDITIONS: 23 ±2°C, 55±20% R.H., VDD(min) < VDD < VDD(max), no load, unless otherwise indicated

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Supply Voltage	VDD		1.6	-	3.3	V
Supply Current	IDD		-	150	-	uA
Sensitivity	S	94dB SPL @1KHz	-39	-38	-37	dB
Signal to Noise Ratio	SNR	94dB SPL @1KHz, A-weighted	-	61	-	dB(A)
Total Harmonic Distortion	THD	94dB SPL @1KHz	-	0.15	-	%
Acoustic Overload Point	AOP	10%THD @1KHz	-	126	-	dB SPL
Power Supply Rejection	PSR		-	-95	-	dB
Power Supply Rejection Ratio	PSRR	100mVpp 217Hz Square wave@1.8V	-	65	-	dB
DC Output		-	-	1.1	-	V
Output impedance	ZOUT	@1KH	-	-	400	Ω
Directivity			Omnidirectional			

Frequency response curve



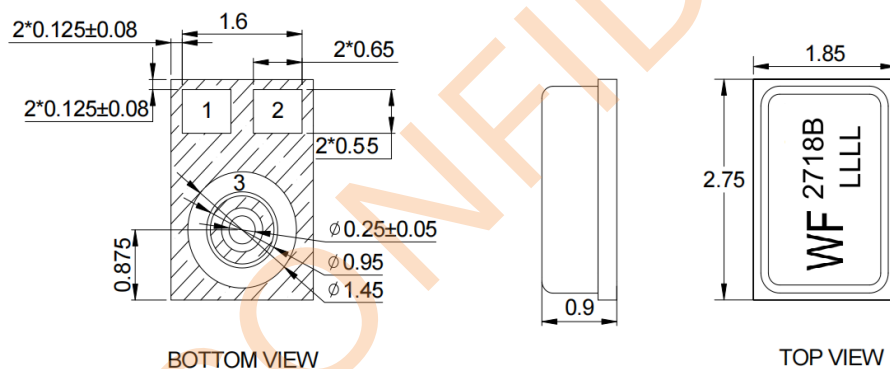
Application informations



Note:

- All GND pins must be connected to ground.
- Capacitors near the microphone should not contain Class 2 dielectrics.
- In order to get a cut-off frequency below 20 Hz, minimum 1uF value of C2 and minimum 20KΩ value of RL.

MECHANICAL SPECIFICATIONS



Item	Dimension	Tolerance
Length(L)	2.75	±0.10
Width(W)	1.85	±0.10
Height(H)	0.90	±0.10
Acoustic Port (AP)	Ø0.25	±0.05

Pin#	Pin Name	Description
1	VDD	Power Supply
2	OUTPUT	Output Signal
3	GND	GND

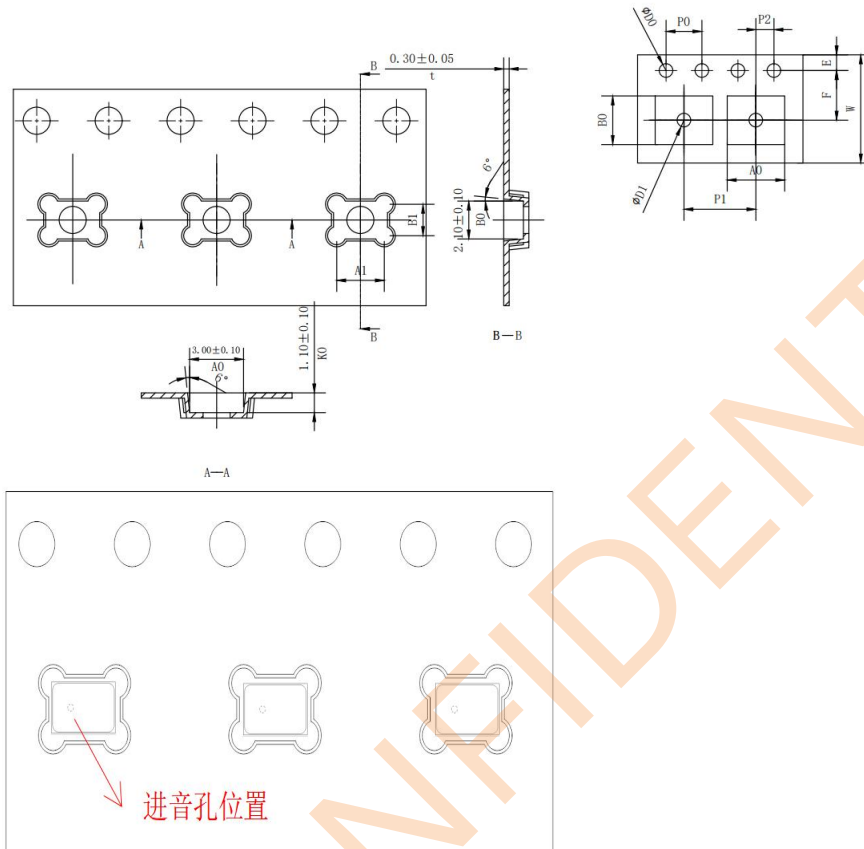
Notes:

- Dimensions are in millimeters unless otherwise specified.
- Tolerance is ±0.10mm unless otherwise specified.
- LLLL is Lot ID .



PACKAGING & MARKING DETAIL

规格	W	E	F	D0	D1	P0	P2	10P0	P1	A0	A1	B0	B1	K0	K1	t
尺寸	12.00 ±0.30	1.75 ±0.10	5.50 ±0.10	1.50 ±0.10	1.50 ±0.10	4.00 ±0.10	2.00 ±0.10	40.00 ±0.20	8.00 ±0.10	3.00 ±0.10	2.40 ±0.10	2.10 ±0.10	1.50 ±0.10	1.10 ±0.10		0.30 ±0.05

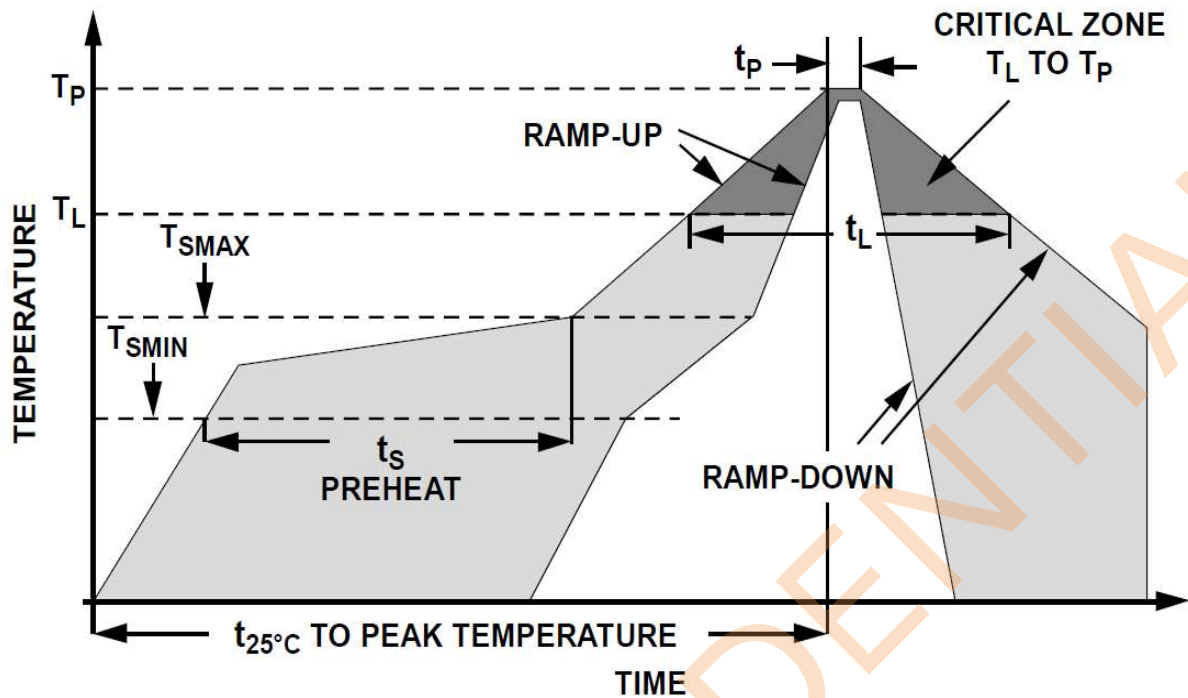


Model Number	Reel Diameter	Quantity Per Reel
WF2718B-AS01	13''	5,000

Notes:

- Dimensions are in millimeters unless otherwise specified.
- Vacuum pickup only in the pick area indicated in Mechanical Specifications.
- Tape & reel per EIA-481.
- Labels applied directly to reel and external package.

REFERENCED REFLOW PROFILE



Profile Feature	Pb-Free
Average Ramp-up rate (TSMAX to TP)	3°C/second max.
Preheat • Temperature Min (TSMIN) • Temperature Max (TSMAX) • Time (TSMIN to TSMAX) (ts)	150°C 200°C 60-180 seconds
Time maintained above: • Temperature (TL) • Time (tL)	217°C 60-150 seconds
Peak Temperature (TP)	260°C
Time within 5°C of actual Peak Temperature (tp)	20-40 seconds
Ramp-down rate (TP to TSMAX)	6°C/second max
Time 25°C to Peak Temperature	8 minutes max

Note:

All temperatures refer to topside of the package, measured on the package body surface.



ADDITIONAL NOTES

(I) Maximum of 3 reflow cycles is recommended.

(II) In order to minimize device damage:

- Do not board wash or clean after the reflow process.
- Do not brush board with or without solvents after the reflow process.
- Do not directly expose to ultrasonic processing, welding, or cleaning.
- Do not insert any object in port hole of device at any time.
- Do not apply over 30 psi of air pressure into the port hole.
- Do not pull a vacuum over port hole of the microphone.
- Do not apply a vacuum when repacking into sealed bags at a rate faster than 0.5 atm/sec.

MATERIALS STATEMENT

Meets the requirements of the European RoHS and Halogen-Free.

RELIABILITY SPECIFICATIONS

Test	Description
Thermal Shock	100 cycles air-to-air thermal shock from -40°C to +125°C with 15 minute soaks.
High Temperature Storage	1000 hours at +105°C environment
Low Temperature Storage	1000 hours at -40°C environment
High Temperature Bias	1000 hours at +105°C under bias.
Low Temperature Bias	1000 hours at -40°C under bias.
Temperature / Humidity Bias	1000 hours at +85°C /85% R.H.
Vibration	4 cycles of 20 to 2,000 Hz sinusoidal sweep with 20g peak acceleration lasting 12 minutes in X, Y, and Z directions.
ESD-HBM	3 discharges of ±2 kV direct contact to I/O pins.
ESD-LID/GND	3 discharges of ±8 kV direct contact to lid while unit is grounded.
ESD-MM	3 discharges of ±200V direct contact to I/O pins.
Reflow	4 reflow cycles with peak temperature of +260°C
Mechanical Shock	3 pulses of 10,000g in the X, Y, and Z direction
Drop Test	To be no interference in operation after dropped to marble or 1.0cm steel plate 18 times from 1.5 meter height.

Note:

After reliability tests are performed, the sensitivity of the microphones shall not deviate more than 1 dB from its initial value.