SAW Components

SiMic MEMS microphone

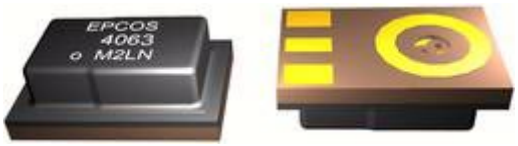
Series/type:	**T4063**
Ordering code:	**B39000T4063P810**
Date:	May 15, 2013
Version:	2.2

SiMic MEMS microphone

Data sheet SMD

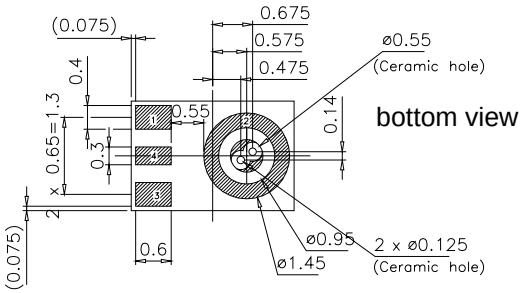
Applications

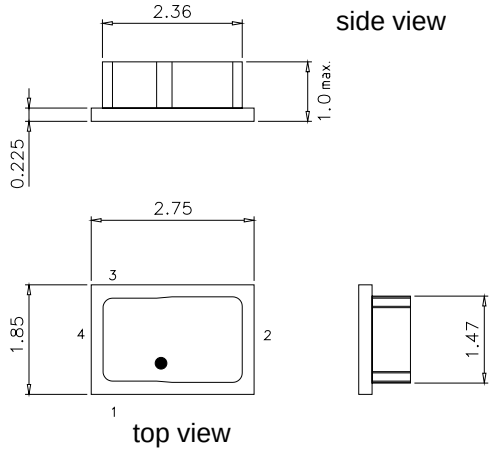
- Microphone designed for mobile phones, headsets, PDAs, notebooks and cameras



Features

- **S**urface **M**ounted **T**echnology (SMT)
- Reflow soldering up to 260 ˚C
- RoHS compatible, Ni/Au-plated terminals suited for lead free soldering
- Very small size of 2.75 × 1.85 mm²
- Very low height of typically 0.9 mm
- Approximate weight of 11 mg
- Sound hole on bottom side
- High long-term temperature stability





Pin configuration

■	1	OUT / LOAD	(output / load in two wire configuration)
■	2	GND	(ground)
■	3	V_{DD} / V_{DD}+ OUT	(power / biased V_{DD} and output in two wire configuration)
■	4	GND	(ground or not connected)

Acoustical and electrical characteristics (three wire configuration)

Ambient temperature of test conditions: T_A = 25 °C
Output load: Z_L = 200 kΩ
Supply voltage: V_{DD} = 1.8 V

All voltages refer to ground.

		Min.	Typ.	Max.	Unit	Note or test condition
Sensitivity 1 kHz	$S_{1\ kHz}$	–41	–38	–35	dBV/Pa	94 dB SPL @ 25 °C
Equivalent noise level	ENL	—	32.5	—	dB(pso)	CCITT-weighted
		—	37	—	dB(A)	A-weighted
Signal to noise ratio	SNR	—	61.5	—	dB(pso)	CCITT-weighted
		—	57	—	dB(A)	A-weighted
		—	57.5	—	dB(A)	A–weighted (100 Hz to 8 kHz)
Total harmonic distortion	THD	—	—	1	%	100 dB SPL, 1 kHz
		—	3	—	%	115 dB SPL, 1 kHz
		—	5	—	%	120 dB SPL, 1 kHz
Power supply feedthrough	PSF	—	–79	—	dBV(A)	217 Hz square wave 100 mV_{pp}
Power supply rejection ratio	PSRR[1)]	—	44 [2)]	—	dB	1 kHz sine 100 mV_{pp}
Current consumption	I_{CC}	—	120	—	µA	@200 kΩ
Impedance		—	260	—	Ω	

1) $PSRR = 20 \cdot \log \frac{V_{Disturb}}{V_{OUT}}$

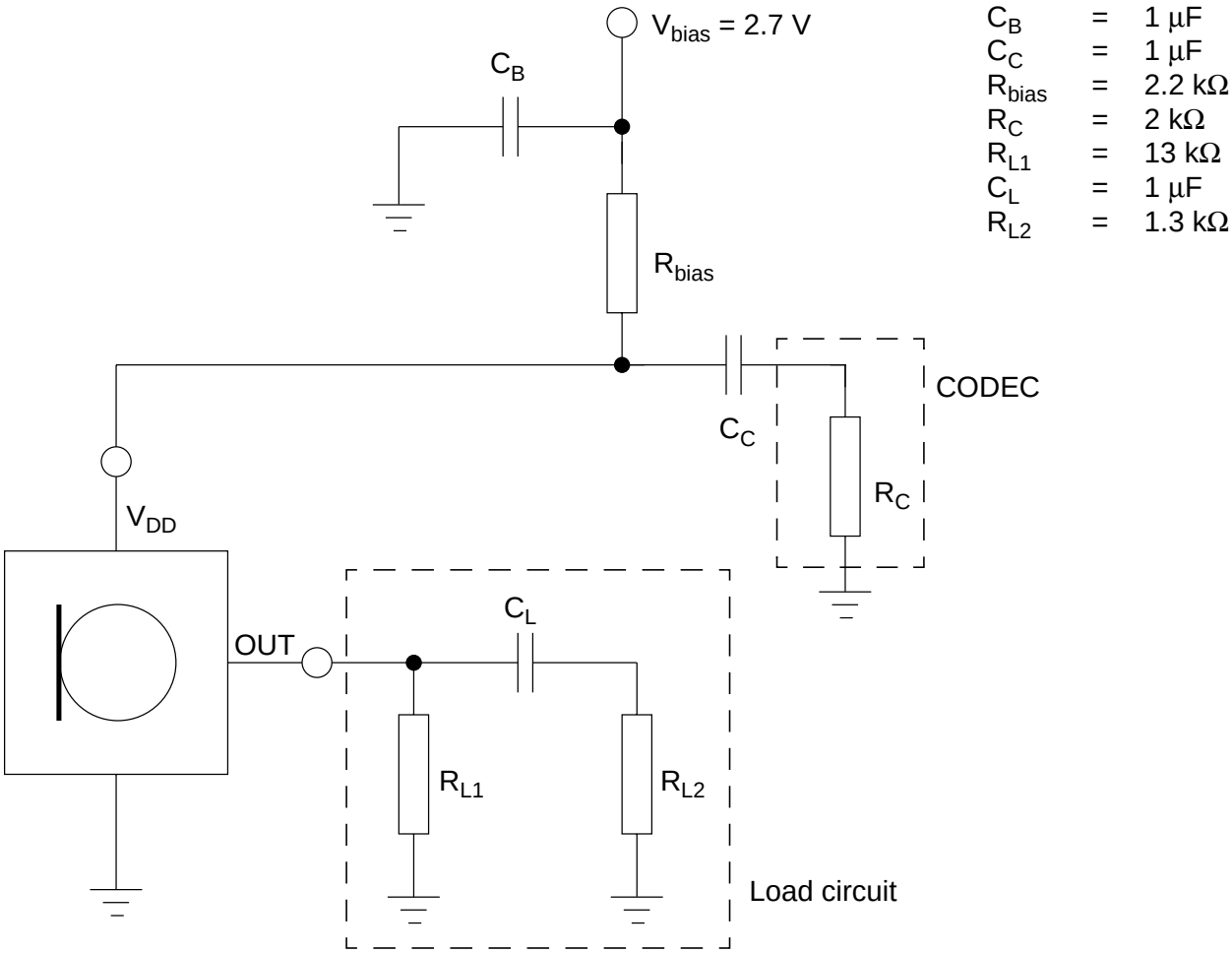
2) $V_{Disturb}\big|_{1\ kHz,\ sine\ wave\ 100\ mVpp} = -29$ dBVrms ; V_{OUT} measured in dBVrms(A); min V_{DD} = 1.7 V

Maximum ratings

Operable temperature range	T_A	–40 ... +85	°C	
Storage temperature range	T_{STG}	–40 ... +125	°C	
Storage temperature range	T_{STGT}	0 ... +60	°C	stored in tape
Operable power supply voltage	V_{DD}	1.64 ... 2.86	V	
Power supply voltage	V_{DD}	1.6 ... 3.63	V	without risk of damage
ESD capability HBM	V_{ESD_HBM}	2000 [1)]	V	any pin
ESD capability MM	V_{ESD_MM}	200 [2)]	V	any pin

[1)] according to JESD22-A115A
[2)] according to JESD22-A114E

Two wire application example



C_B = 1 µF
C_C = 1 µF
R_{bias} = 2.2 kΩ
R_C = 2 kΩ
R_{L1} = 13 kΩ
C_L = 1 µF
R_{L2} = 1.3 kΩ

Cautions and warnings

- Vacuum on the bottom side of a device with a sound inlet hole has to be avoided
- Compressed air and liquid cleaners should not be used around the area of the sound inlet hole
- The sound inlet hole must not be covered with solder
- The maximum number of reflows should not exceed three

References

Type	T4063
Ordering codes	B39000T4063P810 (default packing unit 9k)
Marking and package	C61157-A11-A2
Packaging	F61074-V8256-Z000
Date codes	L_1126
Soldering profile	S_6001
Qualification test procedure	S_0308
RoHS compatible	RoHS-compatible means that products are compatible with the requirements according to Art. 4 (substance restrictions) of Directive 2011/65/EU of the European Parliament and of the Council of June 8th, 2011, on the restriction of the use of certain hazardous substances in electrical and electronic equipment ("Directive") with due regard to the application of exemptions as per Annex III of the Directive in certain cases.

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P.O. Box 80 17 09, 81617 Munich, GERMANY

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