SGM4807
Shunt Mode Audio Click-Pop Eliminator

GENERAL DESCRIPTION

The SGM4807 is an audio click-pop eliminator which can operate from a 1.7V to 5V single power supply. It is designed for portable devices.

The SGM4807 provides a low-impedance grounding path during startup and shutdown by connecting to the output of the system amplifier. It allows $-V_{CC}$ to $+V_{CC}$ wide range audio signals passing with low distortion. Shunt mode can eliminate the click-pop noise.

The SGM4807 has two low-impedance analog switches. The opening and closing of the switches are controlled by mute events that include external power supply and under-voltage of V_{CC}, power-up, power-down and high to low logical level change of $\overline{MUTE}$ pin. Opening switches during normal operation will not affect the output signal.

The SGM4807 can be activated during startup and shutdown of the amplifier to short-circuit the output to the ground and reduce clicks-pops.

The SGM4807 is available in Green TDFN-2×2-8L, MSOP-8 and WLCSP-1.57×0.80-8B packages. It operates over an ambient temperature range of -40℃ to +85℃.

FEATURES

- **Supply Voltage Range: 1.7V to 5V**
- **Pop/Click Reduction Circuitry**
- **Supply Current: 1.5μA (TYP)**
- **600kΩ Pull-Low Resistor at $\overline{MUTE}$ Pin**
- **-40℃ to +85℃ Operating Temperature Range**
- **Available in Green TDFN-2×2-8L, MSOP-8 and WLCSP-1.57×0.80-8B Packages**

APPLICATIONS

Notebook Computers
Phones
Portable Equipment

PACKAGE/ORDERING INFORMATION

MODEL	PACKAGE DESCRIPTION	SPECIFIED TEMPERATURE RANGE	ORDERING NUMBER	PACKAGE MARKING	PACKING OPTION
SGM4807	TDFN-2×2-8L	-40℃ to +85℃	SGM4807YTDE8G/TR	4807 XXXX	Tape and Reel, 3000
	MSOP-8	-40℃ to +85℃	SGM4807YMS8G/TR	SGM4807 YMS8 XXXXX	Tape and Reel, 4000
	WLCSP-1.57×0.80-8B	-40℃ to +85℃	SGM4807YG/TR	8EXX	Tape and Reel, 4000

NOTE: XX = Date Code, XXXX = Date Code, XXXXX = Date Code and Vendor Code.

Green (RoHS & HSF): SG Micro Corp defines "Green" to mean Pb-Free (RoHS compatible) and free of halogen substances. If you have additional comments or questions, please contact your SGMICRO representative directly.

ABSOLUTE MAXIMUM RATINGS

V_{CC}, $\overline{MUTE}$, SET, CPB, UVP to GND ..... -0.3V to +6V
INL, INR to GND ..... $-V_{CC}$ -0.3V to $+V_{CC}$ + 0.3V
Continuous Current In/Out of V_{CC} 30mA
Continuous Current In/Out of $\overline{MUTE}$ 30mA
Continuous Current In/Out of SET, CPB, UVP 30mA
Continuous Current In/Out of INL, INR and GND 390mA
Junction Temperature ..... +150℃
Storage Temperature Range ..... -65℃ to +150℃
Lead Temperature (Soldering, 10s) ..... +260℃
ESD Susceptibility
HBM 8000V
MM 400V
CDM 1000V

RECOMMENDED OPERATING CONDITIONS

Operating Voltage Range ..... 1.7V to 5V
Operating Temperature Range ..... -40℃ to +85℃

OVERSTRESS CAUTION

Stresses beyond those listed in Absolute Maximum Ratings may cause permanent damage to the device. Exposure to absolute maximum rating conditions for extended periods may affect reliability. Functional operation of the device at any conditions beyond those indicated in the Recommended Operating Conditions section is not implied.

ESD SENSITIVITY CAUTION

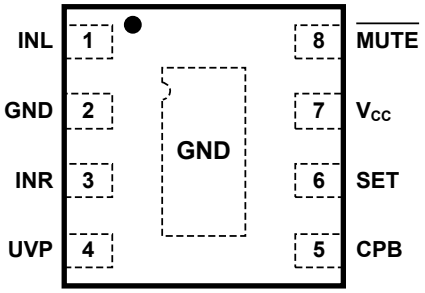
This integrated circuit can be damaged if ESD protections are not considered carefully. SGMICRO recommends that all integrated circuits be handled with appropriate precautions. Failure to observe proper handling and installation procedures can cause damage. ESD damage can range from subtle performance degradation to complete device failure. Precision integrated circuits may be more susceptible to damage because even small parametric changes could cause the device not to meet the published specifications.

DISCLAIMER

SG Micro Corp reserves the right to make any change in circuit design, or specifications without prior notice.

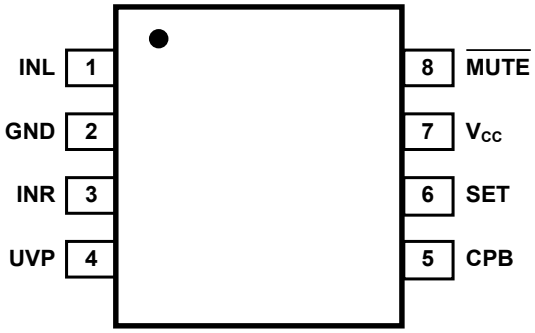
PIN CONFIGURATIONS

(TOP VIEW)



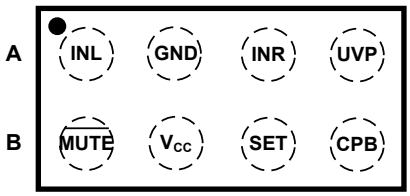
TDFN-2×2-8L

(TOP VIEW)



MSOP-8

(TOP VIEW)



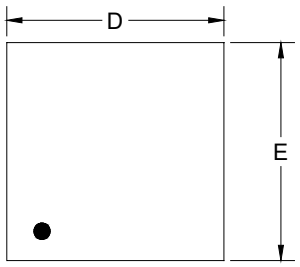
WLCSP-1.57×0.80-8B

PIN DESCRIPTION

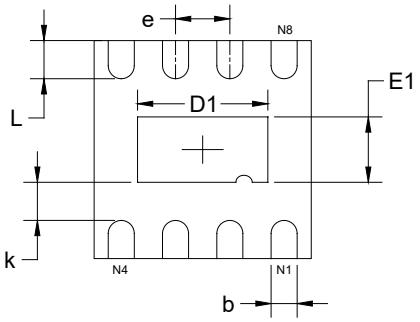
PIN		NAME	FUNCTION
TDFN-2×2-8L/ MSOP-8	WLCSP-1.57×0.80-8B		
1	A1	INL	Left-Channel Input. Connect the INL between the headphone jack and the output coupling capacitor.
2	A2	GND	Ground.
3	A3	INR	Right-Channel Input. Connect the INR between the headphone jack and the output coupling capacitor.
4	A4	UVP	Under-Voltage Protection Input. When UVP event happens, chip will be in mute status.
5	B4	CPB	Power-On Blanking Time Adjusting. Connect a capacitor from CPB pin to GND to program the power-on blanking time. Chip is in mute status during power-on blanking time.
6	B3	SET	Turn-Off Time Set. Connect an external capacitor between SET and GND to set the switch open delay.
7	B2	V_{CC}	Power Supply.
8	B1	$\overline{MUTE}$	Active Low Enable. When $\overline{MUTE}$ = “Low”, chip enters into mute status; when $\overline{MUTE}$ = “High”, chip works normally. There is one 600kΩ pull-low resistor at $\overline{MUTE}$ pin.

PACKAGE OUTLINE DIMENSIONS

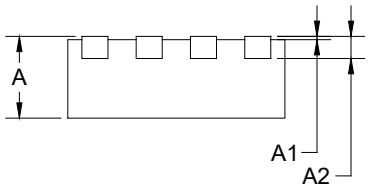
TDFN-2×2-8L



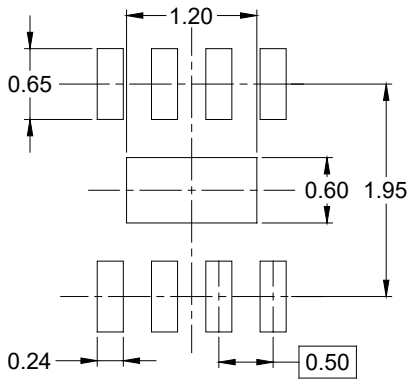
TOP VIEW



BOTTOM VIEW



SIDE VIEW



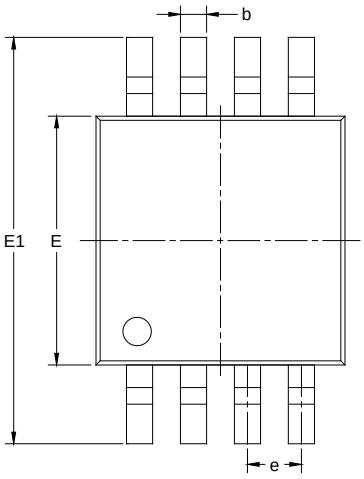
RECOMMENDED LAND PATTERN (Unit: mm)

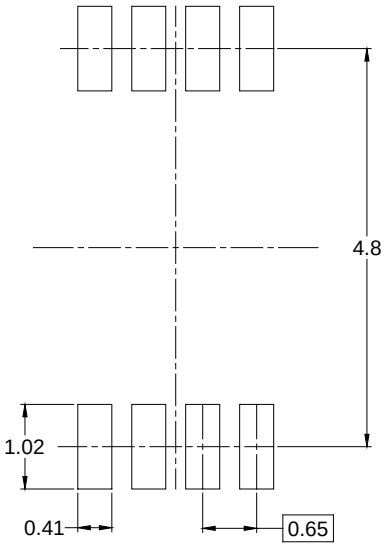
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MIN	MAX	MIN	MAX
A	0.700	0.800	0.028	0.031
A1	0.000	0.050	0.000	0.002
A2	0.203 REF		0.008 REF	
D	1.900	2.100	0.075	0.083
D1	1.100	1.300	0.043	0.051
E	1.900	2.100	0.075	0.083
E1	0.500	0.700	0.020	0.028
k	0.200 MIN		0.008 MIN	
b	0.180	0.300	0.007	0.012
e	0.500 TYP		0.020 TYP	
L	0.250	0.450	0.010	0.018

NOTE: This drawing is subject to change without notice.

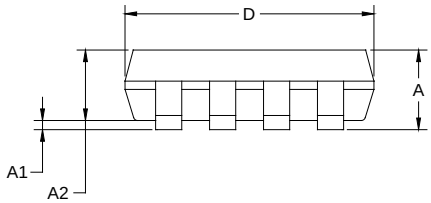
PACKAGE OUTLINE DIMENSIONS

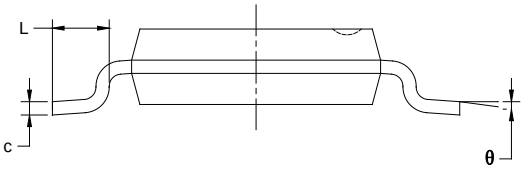
MSOP-8





RECOMMENDED LAND PATTERN (Unit: mm)



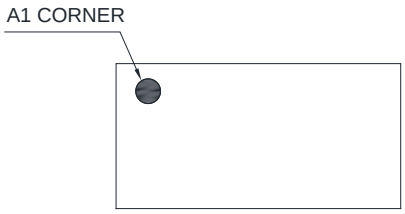


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MIN	MAX	MIN	MAX
A	0.820	1.100	0.032	0.043
A1	0.020	0.150	0.001	0.006
A2	0.750	0.950	0.030	0.037
b	0.250	0.380	0.010	0.015
c	0.090	0.230	0.004	0.009
D	2.900	3.100	0.114	0.122
E	2.900	3.100	0.114	0.122
E1	4.750	5.050	0.187	0.199
e	0.650 BSC		0.026 BSC	
L	0.400	0.800	0.016	0.031
θ	0°	6°	0°	6°

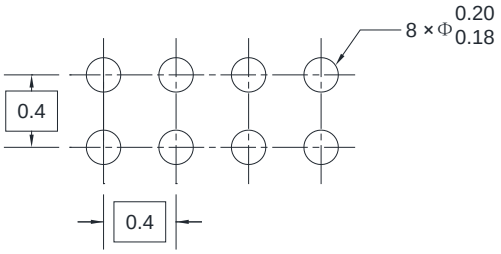
NOTES:
1. Body dimensions do not include mode flash or protrusion.
2. This drawing is subject to change without notice.

PACKAGE OUTLINE DIMENSIONS

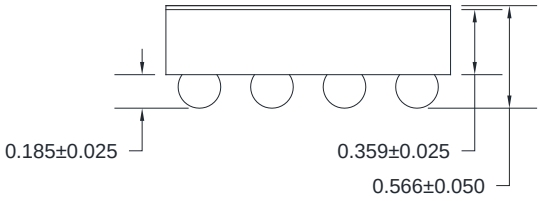
WLCSP-1.57×0.80-8B



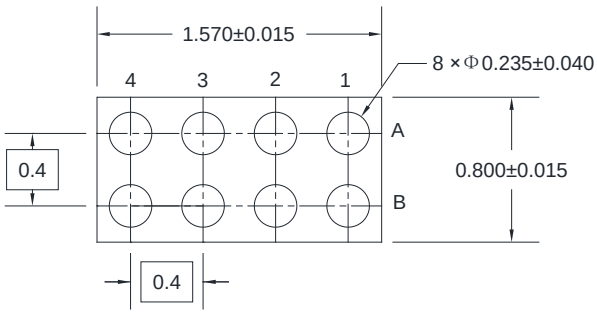
TOP VIEW



RECOMMENDED LAND PATTERN



SIDE VIEW

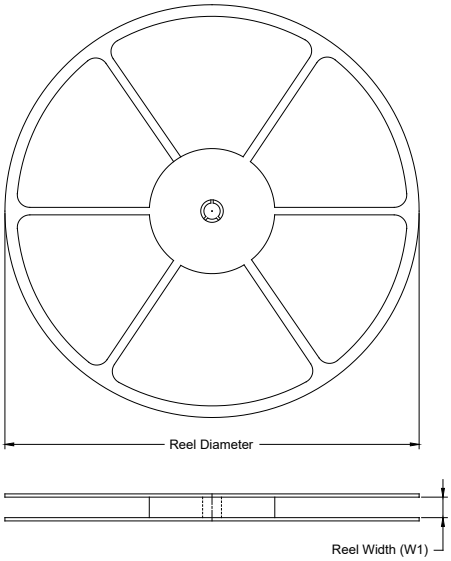


BOTTOM VIEW

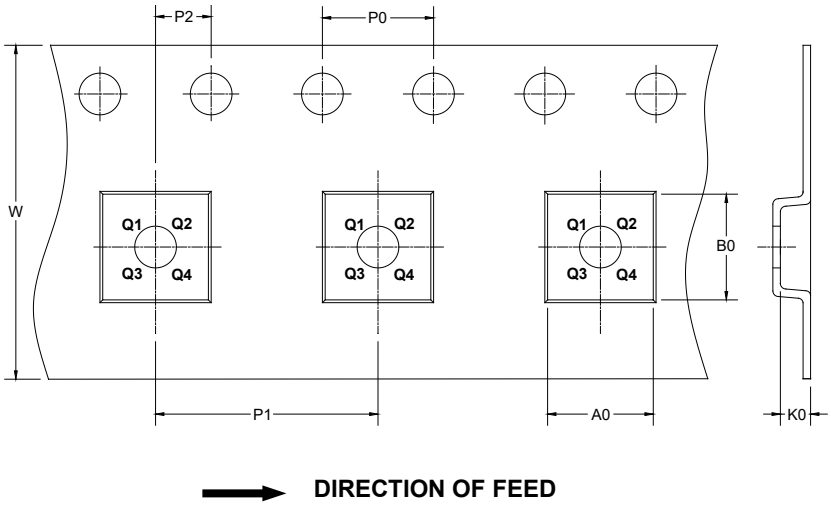
NOTES:
1. All linear dimensions are in millimeters.
2. This drawing is subject to change without notice.

TAPE AND REEL INFORMATION

REEL DIMENSIONS



TAPE DIMENSIONS



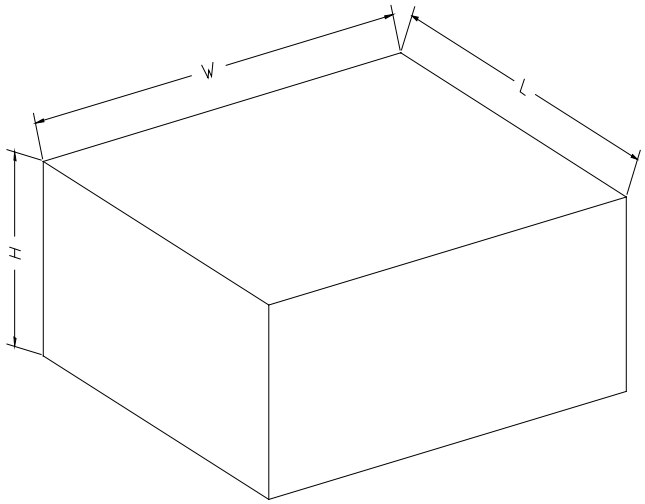
NOTE: The picture is only for reference. Please make the object as the standard.

KEY PARAMETER LIST OF TAPE AND REEL

Package Type	Reel Diameter	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P0 (mm)	P1 (mm)	P2 (mm)	W (mm)	Pin1 Quadrant
TDFN-2×2-8L	7″	9.5	2.30	2.30	1.10	4.0	4.0	2.0	8.0	Q1
MSOP-8	13″	12.4	5.20	3.30	1.50	4.0	8.0	2.0	12.0	Q1
WLCSP-1.57×0.80-8B	7″	9.5	1.00	1.80	0.70	4.0	4.0	2.0	8.0	Q2

DD0001

CARTON BOX DIMENSIONS



NOTE: The picture is only for reference. Please make the object as the standard.

KEY PARAMETER LIST OF CARTON BOX

Reel Type	Length (mm)	Width (mm)	Height (mm)	Pizza/Carton
7″ (Option)	368	227	224	8
7″	442	410	224	18
13″	386	280	370	5

DD0002