

GENERAL DESCRIPTION

The SGM3698A is a single SPST (single-pole/single-throw) analog switch with low distortion. It operates from a 2.3V to 5.5V single power supply. The SGM3698A allows a 0V to 18V wide range positive signal passing for 2.3V to 5.5V power supply range.

Other features include ultra-low on-resistance, low voltage and fast switching times. The high performances make it very suitable for multiple applications, such as portable equipment, battery-powered systems, etc.

The SGM3698A is available in a Green XTDFN-1.5×1.2-6L package. It operates over an operating temperature range of -40°C to +85°C.

FEATURES

- Single Supply Voltage Range: 2.3V to 5.5V
- On-Resistance: 60mΩ (TYP)
- 0V to 18V Low Distortion, Analog Signal Passing
- Fast Switching Times
- Low Input Leakage Current
- 1.2V, 1.8V Logic Compatible Control Pin
- -40°C to +85°C Operating Temperature Range
- Available in a Green XTDFN-1.5×1.2-6L Package

APPLICATIONS

Portable Equipment
Battery-Powered Systems

TYPICAL APPLICATION

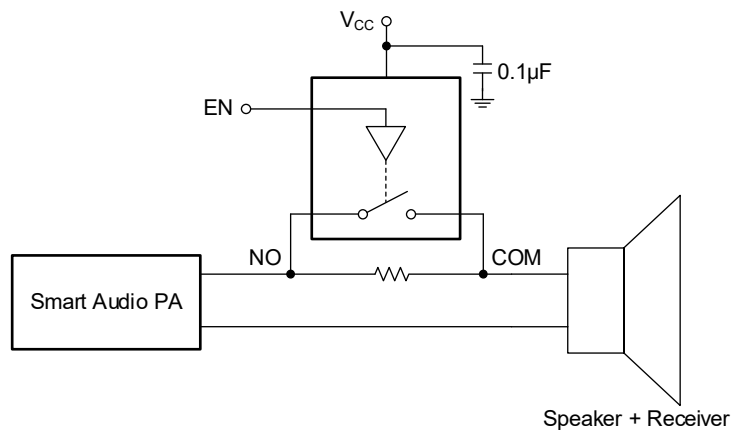


Figure 1. Typical Application Circuit

PACKAGE/ORDERING INFORMATION

MODEL	PACKAGE DESCRIPTION	SPECIFIED TEMPERATURE RANGE	ORDERING NUMBER	PACKAGE MARKING	PACKING OPTION
SGM3698A	XTDFN-1.5×1.2-6L	-40°C to +85°C	SGM3698AYXIM6G/TR	2YH XXX	Tape and Reel, 5000

MARKING INFORMATION

NOTE: XXX = Date Code and Trace Code.

Y Y Y — Serial Number
X X X


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

VCC to GND	-0.3V to 6V
EN to GND.....	-0.3V to 6V
Analog Voltage Range ⁽¹⁾	-7V to +20V
Analog Voltage Range ⁽²⁾	-9V to +20V
Continuous Current from COM to NO.....	±1.5A
Peak Current from COM to NO.....	±3A
I/O Clamp Current (V _I < 0V).....	-30mA
Package Thermal Resistance	
XTDFN-1.5×1.2-6L, θ _{JA}	117.3°C/W
XTDFN-1.5×1.2-6L, θ _{JB}	17.9°C/W
XTDFN-1.5×1.2-6L, θ _{JC}	53.8°C/W
Junction Temperature.....	+150°C
Storage Temperature Range	-65°C to +150°C
Lead Temperature (Soldering, 10s).....	+260°C
ESD Susceptibility ^{(3) (4)}	
HBM.....	±3000V
CDM	±1000V

NOTES:

1. Maximum negative voltage of -7V must be of limited duration (< 500ns) and duty cycle (≤ 20%).
2. Maximum negative voltage of -9V is measured at a signal frequency of 800kHz, pulse width of 400ns, with a 6.8μH series inductor (this value represents the typical equivalent inductance of a speaker).
3. For human body model (HBM), all pins comply with ANSI/ESDA/JEDEC JS-001 specifications.
4. For charged device model (CDM), all pins comply with ANSI/ESDA/JEDEC JS-002 specifications.

RECOMMENDED OPERATING CONDITIONS

Supply Voltage Range	2.3V to 5.5V
Operating Ambient Temperature Range.....	-40°C to +85°C

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.

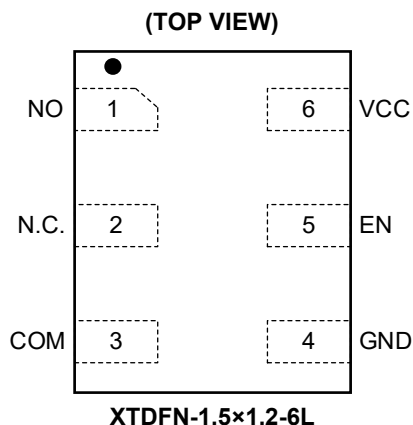
ESD SENSITIVITY CAUTION

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 CONFIGURATION



PIN DESCRIPTION

PIN	NAME	FUNCTION
1	NO	Normally-Open Terminal.
2	N.C.	No Connection.
3	COM	Common Terminal.
4	GND	Ground.
5	EN	Enable Control Pin. When EN is active-low, the SGM3698A will be in the shutdown state. When EN is active-high, the SGM3698A will be in working state, the COM and NO will be connected.
6	VCC	Positive Power Supply Pin. It is recommended to use a 100nF or larger ceramic capacitor from VCC pin to ground to get good power supply decoupling.

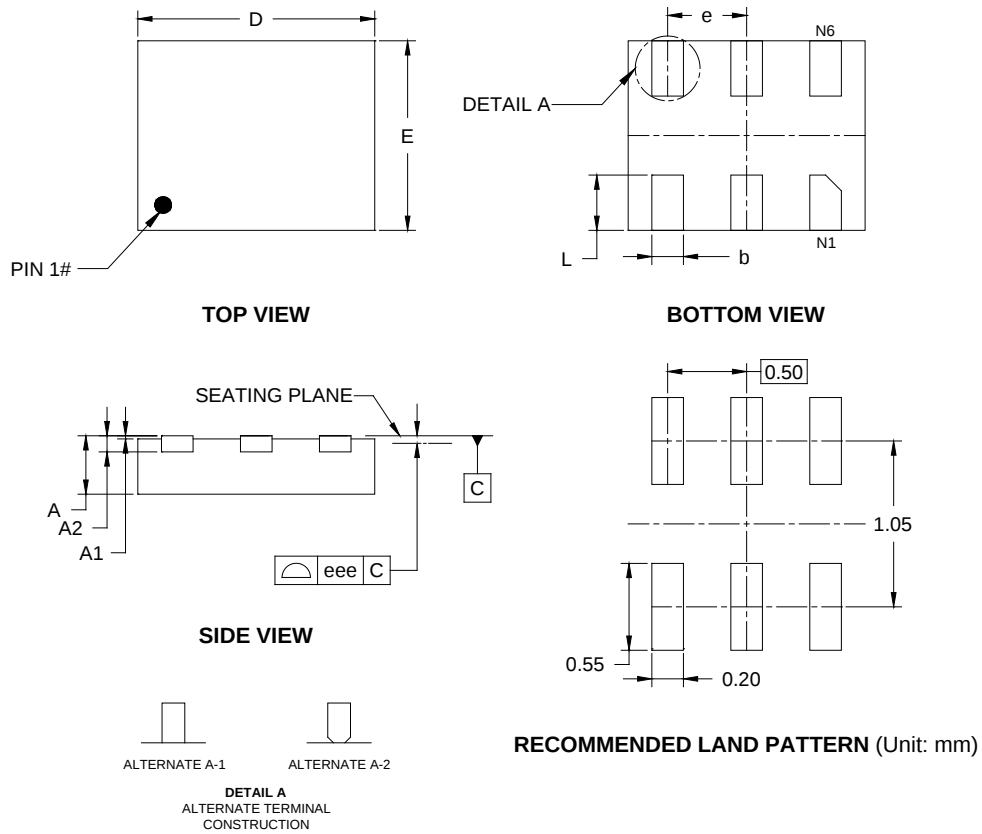
FUNCTION TABLE

Table 1. Function Table of Switch

EN	COM and NO
0	Disconnected
1	Connected (COM = NO)

PACKAGE OUTLINE DIMENSIONS

XTDFN-1.5×1.2-6L

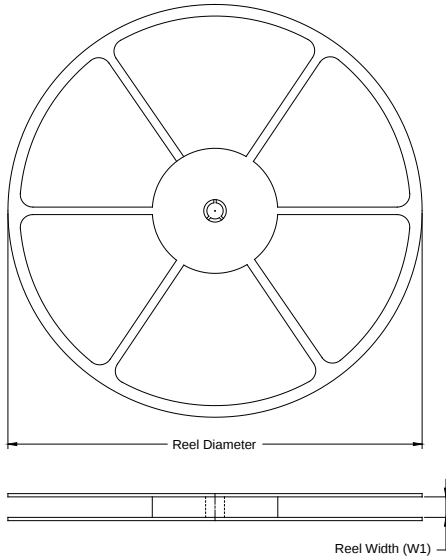


Symbol	Dimensions In Millimeters		
	MIN	NOM	MAX
A	0.320	-	0.400
A1	0.000	-	0.050
A2	0.102 REF		
b	0.150	-	0.250
D	1.400	-	1.600
E	1.100	-	1.300
e	0.500 BSC		
L	0.250	-	0.450
eee	0.050		

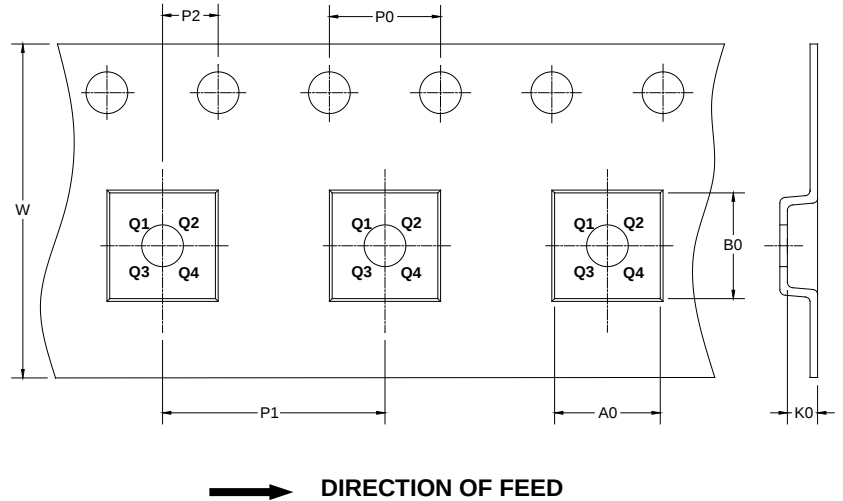
NOTE: This drawing is subject to change without notice.

TAPE AND REEL INFORMATION

REEL DIMENSIONS



TAPE DIMENSIONS



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

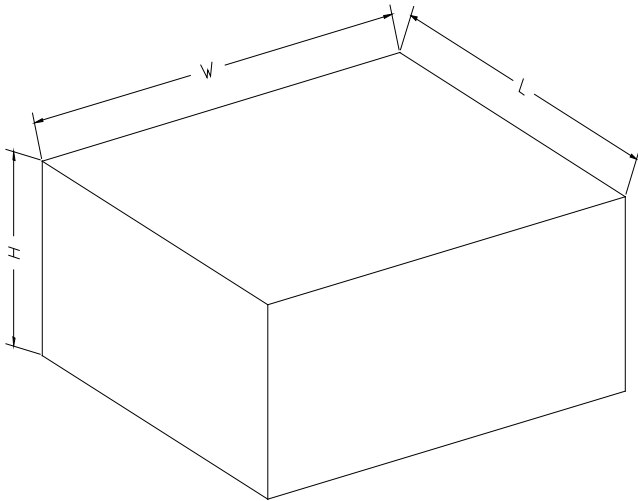
KEY PARAMETER LIST OF TAPE AND REEL

Package Type	Reel Diameter	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P0 (mm)	P1 (mm)	P2 (mm)	W (mm)	Pin1 Quadrant
XTDFN-1.5×1.2-6L	7"	9.5	1.40	1.85	0.50	4.0	4.0	2.0	8.0	Q1

DD00001

PACKAGE INFORMATION

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

DD0002