SGM4518SH
36V High Voltage, CMOS Analog Multiplexer

GENERAL DESCRIPTION

The SGM4518SH is an 8-channel, TTL/CMOS compatible analog multiplexer. It operates from +3.2V to +36V single power supply or ±3.2V to ±18V dual power supplies.

The SGM4518SH features high voltage, low on-resistance and low distortion. The high performances make it very suitable for multiple applications, such as battery-operated equipment, audio and video signal routing, etc.

TTL/CMOS logic compatibility can be guaranteed when using a single +5V or dual ±5V power supplies, because the logic thresholds of all digital inputs are between 0.8V and 2.4V.

The SGM4518SH is available in a Green TSSOP-16 package. It operates over an operating temperature range of -40℃ to +125℃.

FEATURES

- **Single-Supply Voltage Range: +3.2V to +36V**
- **Dual-Supply Voltage Range: ±3.2V to ±18V**
- **High Off-Isolation: -75dB (R_L = 50Ω, f = 1MHz)**
- **On-Resistance:**
  26Ω (TYP) with Single 36V Supply
- **Low On-Resistance Flatness**
- **Low Off-Leakage Current: 0.02μA (TYP) at +25℃**
- **Low On-Leakage Current: 0.15μA (TYP) at +25℃**
- **Low Distortion: 0.001% (R_L = 600Ω, f = 1kHz)**
- **Low Crosstalk: -75dB (TYP) (R_L = 50Ω, f = 1MHz)**
- **Rail-to-Rail Input and Output Operation**
- **TTL/CMOS-Logic Compatible**
- **-40℃ to +125℃ Operating Temperature Range**
- **Available in a Green TSSOP-16 Package**

APPLICATIONS

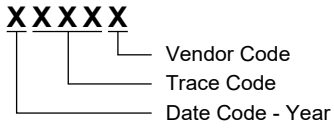
Portable Equipment
Sample-and-Hold Circuits
Battery-Powered Systems
Audio and Video Signal Routing

PACKAGE/ORDERING INFORMATION

MODEL	PACKAGE DESCRIPTION	SPECIFIED TEMPERATURE RANGE	ORDERING NUMBER	PACKAGE MARKING	PACKING OPTION
SGM4518SH	TSSOP-16	-40℃ to +125℃	SGM4518SHXTS16G/TR	09C XTS16 XXXXX	Tape and Reel, 4000

MARKING INFORMATION

NOTE: XXXXX = Date Code, Trace 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

Voltages Referenced to V_{EE}

V_{CC} ..... -0.3V to 40V

GND ..... -0.3V to 40V

Analog Switch I/O Voltage, V_{IS} ..... (V_{EE} - 0.3V) to (V_{CC} + 0.3V)

Digital Control Voltage ..... (GND - 0.3V) to (V_{CC} + 0.3V)

Continuous Current into Analog Switch I/O, X_ [(1)] or X ... ±40mA

Latch-up Current

V_S = 16V, T_A = +125℃ ..... ±100mA

V_S = 20V, T_A = +25℃ ..... ±150mA

Junction Temperature ..... +150℃

Storage Temperature Range ..... -65℃ to +150℃

Lead Temperature (Soldering, 10s) ..... +260℃

ESD Susceptibility

HBM 8000V

CDM 1000V

RECOMMENDED OPERATING CONDITIONS

Operating Temperature Range ..... -40℃ to +125℃

NOTE:

1. X_: Analog Switch Inputs X0-X7.

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

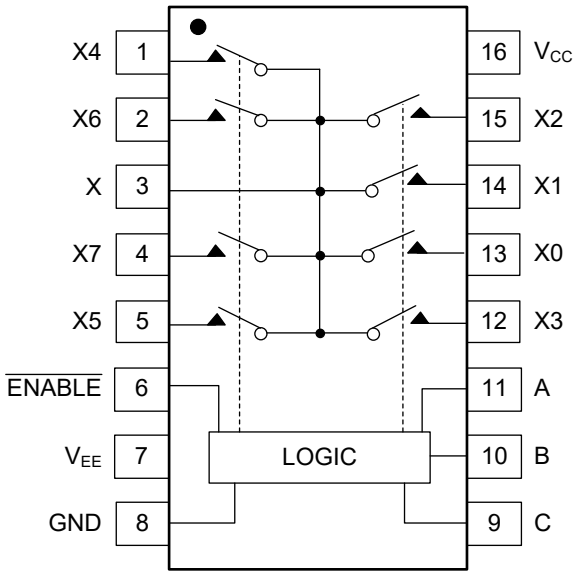
This integrated circuit can be damaged if ESD protections are not considered carefully. SGMICRO recommends that all integrated circuits be handled with appropriate precautions. Failure to observe proper handling and installation procedures can cause damage. ESD damage can range from subtle performance 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

(TOP VIEW)



TSSOP-16

PIN DESCRIPTION

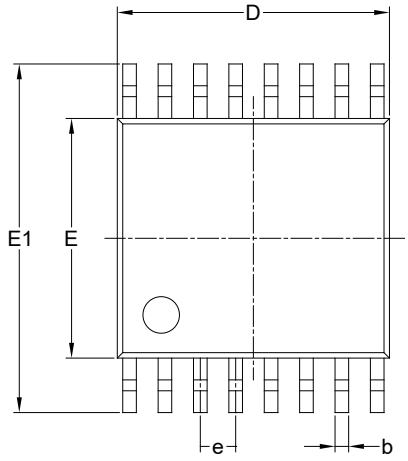
PIN	NAME	FUNCTION
13, 14, 15, 12, 1, 5, 2, 4	X0-X7	Analog Switch Input Pins.
3	X	Analog Switch Output Pin.
6	$\overline{\text{ENABLE}}$	Digital Enable Control Pin. Normally connected to GND.
7	V_{EE}	Negative Analog Supply Voltage Input Pin. Connect to GND for single-supply operation.
8	GND	Ground.
9	C	Digital Address "C" Input Pin.
10	B	Digital Address "B" Input Pin.
11	A	Digital Address "A" Input Pin.
16	V_{CC}	Positive Analog and Digital Supply Voltage Input Pin.

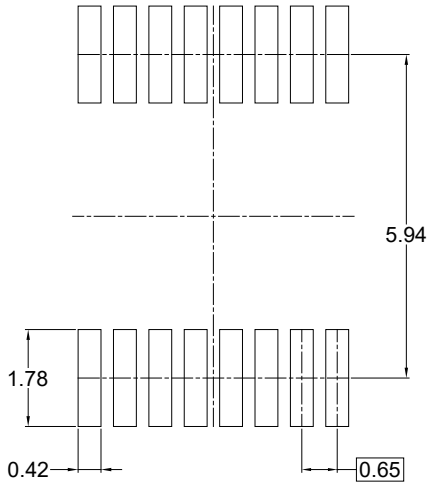
NOTE:

1. Any input pin can be used as an output pin and vice versa. Signal transmission is equally good in both directions.

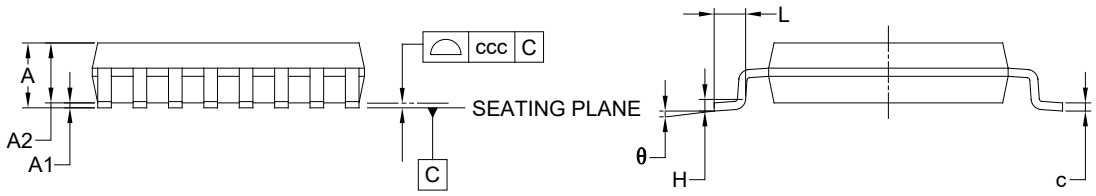
PACKAGE OUTLINE DIMENSIONS

TSSOP-16





RECOMMENDED LAND PATTERN (Unit: mm)

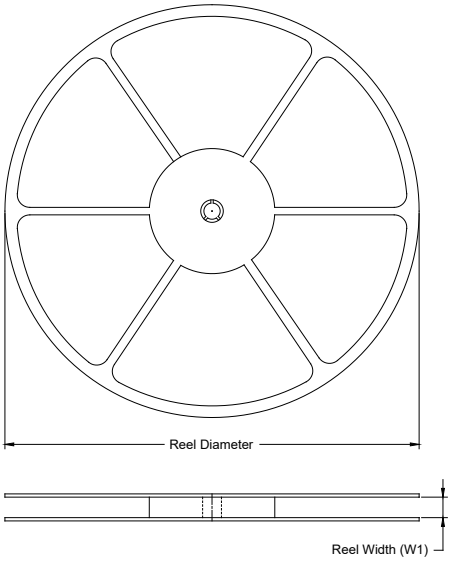


Symbol	Dimensions In Millimeters		
	MIN	MOD	MAX
A	-	-	1.200
A1	0.050	-	0.150
A2	0.800	-	1.050
b	0.190	-	0.300
c	0.090	-	0.200
D	4.860	-	5.100
E	4.300	-	4.500
E1	6.200	-	6.600
e	0.650 BSC		
L	0.450	-	0.750
H	0.250 TYP		
θ	0°	-	8°
ccc	0.100		

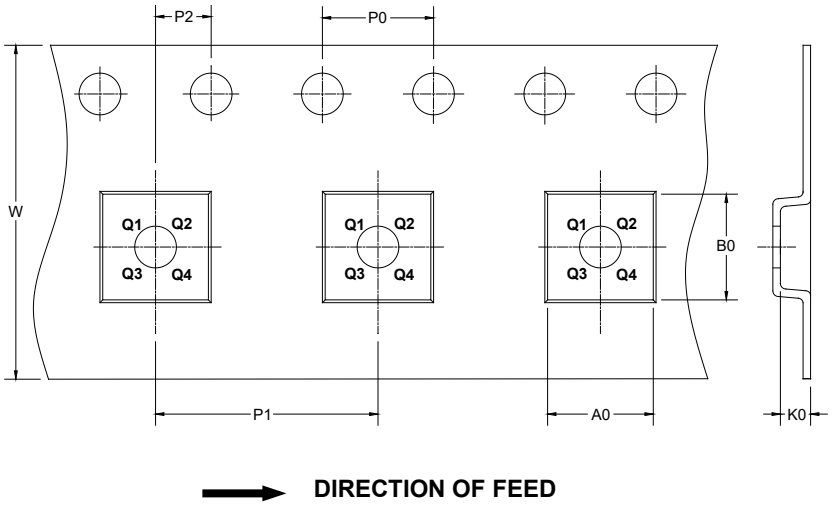
NOTES:
1. This drawing is subject to change without notice.
2. The dimensions do not include mold flashes, protrusions or gate burrs.
3. Reference JEDEC MO-153.

TAPE AND REEL INFORMATION

REEL DIMENSIONS



TAPE DIMENSIONS



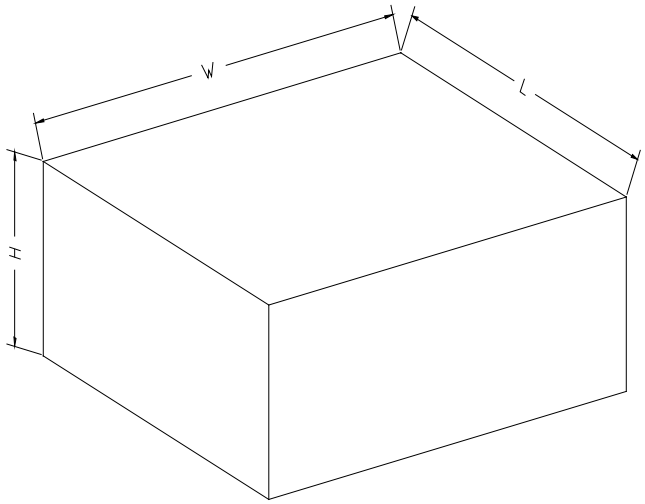
NOTE: The picture is only for reference. Please make the object as the standard.

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
TSSOP-16	13″	12.4	6.80	5.40	1.50	4.0	8.0	2.0	12.0	Q1

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
13″	386	280	370	5

DD0002