



SGM7304

6.1GHz, 2-Channel, SPDT Switch with Power-Off-Isolation

GENERAL DESCRIPTION

The SGM7304 is a 2-channel, single-pole double throw switch (SPDT) and supports bidirectional high-speed signal transmission in the range from GND to V_{CC} . The device can be applied flexibly in differential and single ended signal transmission.

The SGM7304 has wide bandwidth (6.1GHz), low crosstalk and low on-resistance (R_{ON}). The device can also be configured to enter low power mode by pulling the nEN pin high. Besides, it has a power-off-isolation feature. All above features can make the SGM7304 apply to smartphones, PC, and other electronics, etc.

The SGM7304 is available in a Green UTQFN-2×1.5-10L package. It operates over an operating temperature range of -40°C to +125°C.

FEATURES

- **Supply Voltage Range: 2.3V to 5.5V**
- **Low On-Resistance: 3.2Ω (TYP)**
- **Low C_{ON} : 3pF (TYP)**
- **Ethernet Interfaces**
- **Differential -3dB Bandwidth: 6.1GHz**
- **Current Consumption: 36μA (TYP)**
- **I_{OFF} Protection Prevents Current Leakage in Powered-Down State**
- **1.2V and 1.8V Compatible Control Inputs (SEL, nEN)**
- **-40°C to +125°C Operating Temperature Range**
- **Available in a Green UTQFN-2×1.5-10L Package**

APPLICATIONS

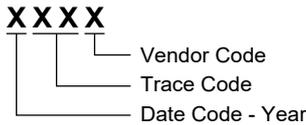
Smartphone
Computing: Server, PC and Notebook PC
Ethernet
Medical Equipment

PACKAGE/ORDERING INFORMATION

MODEL	PACKAGE DESCRIPTION	SPECIFIED TEMPERATURE RANGE	ORDERING NUMBER	PACKAGE MARKING	PACKING OPTION
SGM7304	UTQFN-2x1.5-10L	-40°C to +125°C	SGM7304XURA10G/TR	7304 XXXX	Tape and Reel, 3000

MARKING INFORMATION

NOTE: XXXX = 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

Supply Voltage, V_{CC}	-0.3V to 6.0V
Input-Output DC Voltage, $V_{I/O}$	-0.3V to 5.5V
Digital Input Voltage (SEL, nEN), V_{SEL} , V_{nEN}	-0.3V to 6.0V
Junction Temperature.....	+150°C
Storage Temperature Range.....	-65°C to +150°C
Lead Temperature (Soldering, 10s).....	+260°C
ESD Susceptibility ⁽¹⁾⁽²⁾	
HBM.....	±2000V
CDM.....	±1000V

NOTES:

1. For human body model (HBM), all pins comply with ANSI/ESDA/JEDEC JS-001 specifications.
2. For charged device model (CDM), all pins comply with ANSI/ESDA/JEDEC JS-002 specifications.

RECOMMENDED OPERATING CONDITIONS

Supply Voltage, V_{CC}	2.3V to 5.5V
Analog Voltage, $V_{I/O}$	0V to 3.6V
Digital Input Voltage (SEL, nEN), V_{SEL} , V_{nEN}	0V to V_{CC}
Continuous Current through I/O Signal Path (COM1, COM2, A1, A2, B1, B2), $I_{I/O}$	±20mA (MAX)
Operating Ambient Temperature Range.....	-40°C to +125°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.

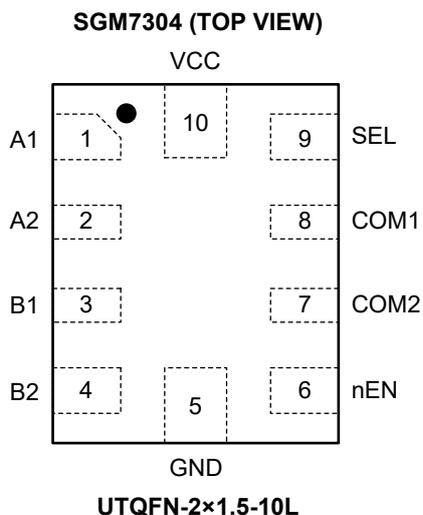
ESD SENSITIVITY CAUTION

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	I/O	FUNCTION
1	A1	I/O	Signal Path A1.
2	A2	I/O	Signal Path A2.
3	B1	I/O	Signal Path B1.
4	B2	I/O	Signal Path B2.
5	GND	—	Ground.
6	nEN	I	Enable (Active Low). It is pulled to low by an internal 1MΩ resistor.
7	COM2	I/O	Common Signal Path 2.
8	COM1	I/O	Common Signal Path 1.
9	SEL	I	Switch Select (Logic Low = COM to A Port, Logic High = COM to B Port). It is pulled to low by an internal 1MΩ resistor.
10	VCC	—	Supply Voltage.

NOTE: I = input, I/O = input/output.

FUNCTIONAL BLOCK DIAGRAM

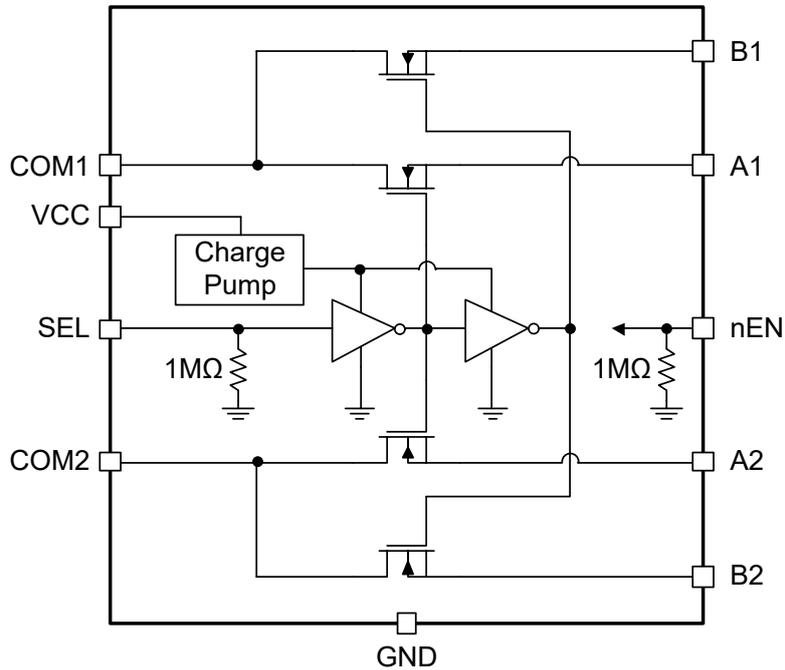


Figure 1. Block Diagram

FUNCTION TABLE

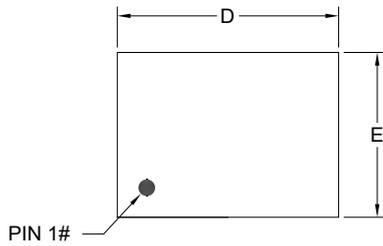
SEL	nEN	SWITCH STATUS
X	H	Both A Port and B Port Switches in High-Z
L	L	COM to A Port
H	L	COM to B Port

NOTE: X = Don't care.

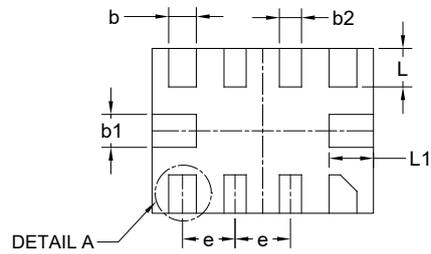
PACKAGE INFORMATION

PACKAGE OUTLINE DIMENSIONS

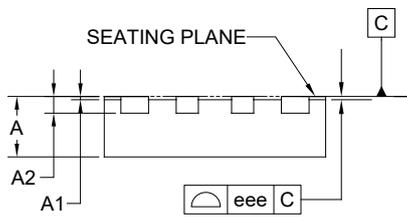
UTQFN-2×1.5-10L



TOP VIEW



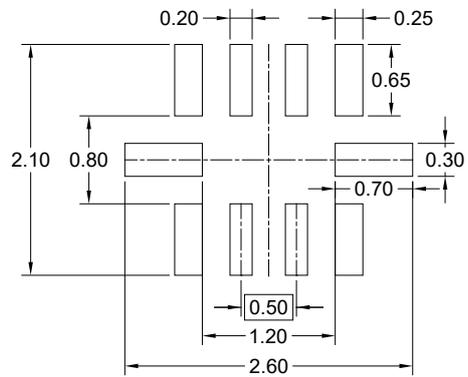
BOTTOM VIEW



SIDE VIEW



DETAIL A
ALTERNATE TERMINAL
CONSTRUCTION



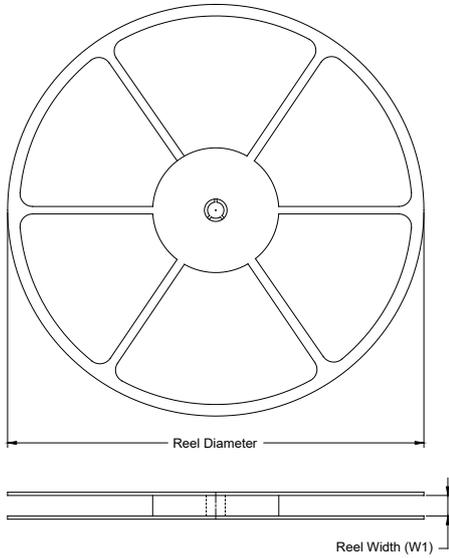
RECOMMENDED LAND PATTERN (Unit: mm)

Symbol	Dimensions In Millimeters		
	MIN	NOM	MAX
A	0.500	0.550	0.600
A1	0.000	-	0.050
A2	0.152 REF		
b	0.200	0.250	0.300
b1	0.250	0.300	0.350
b2	0.150	0.200	0.250
D	1.900	2.000	2.100
E	1.400	1.500	1.600
L	0.250	0.350	0.450
L1	0.300	0.400	0.500
e	0.500 BSC		
eee	0.050		

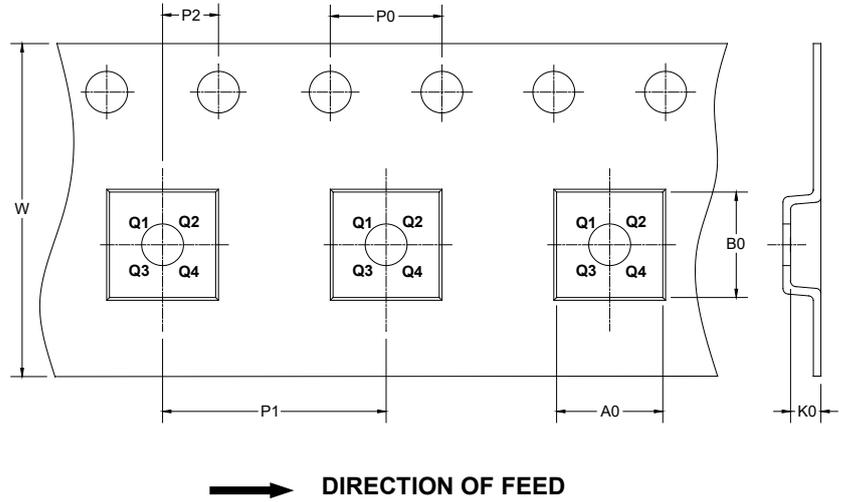
NOTE: This drawing is subject to change without notice.

TAPE AND REEL INFORMATION

REEL DIMENSIONS



TAPE DIMENSIONS



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

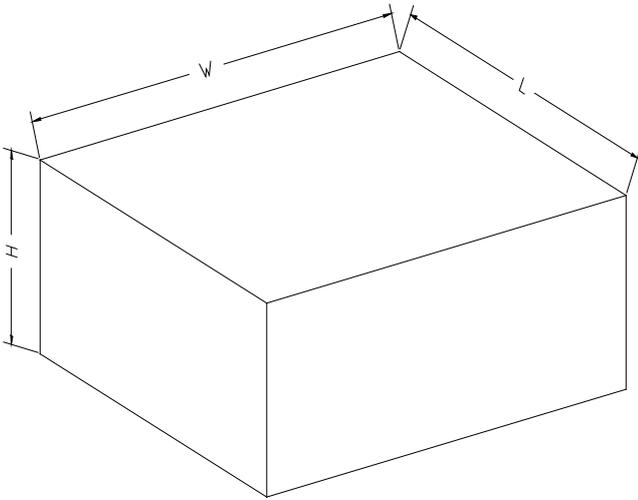
KEY PARAMETER LIST OF TAPE AND REEL

Package Type	Reel Diameter	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P0 (mm)	P1 (mm)	P2 (mm)	W (mm)	Pin1 Quadrant
UTQFN-2×1.5-10L	7"	9.5	2.20	1.70	0.75	4.0	4.0	2.0	8.0	Q3

DD0001

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

D00002