



SGM7301

4-Channel High-Performance Differential Switch

GENERAL DESCRIPTION

The SGM7301 is a differential 4-channel high-speed switch. The product can switch dual differential signals to 1 of 2 locations. With a special design technique used, it minimizes the impedance of the switch so that the attenuation observed through the switch can be ignored and minimizes the inter-channel skew and inter-channel crosstalk required for high-speed serial interface.

The SGM7301 can achieve extremely low power consumption by extending existing high-speed ports. In order to achieve high ESD tolerance, the ESD protection circuits are integrated into ICs.

No external blocking capacitors are required on the RF paths as long as no external DC voltage is applied, which can save PCB area and cost.

The SGM7301 is available in a Green ULGA-3.5×9-42L package.

FEATURES

- ◆ Supports XAUI and SGMII
- ◆ High Bandwidth: 9.1GHz at -3dB
- ◆ Excellent Dynamic Characteristics at 4GHz
 - ◆ Crosstalk = -47dB
 - ◆ Off Isolation = -23dB
 - ◆ Insertion Loss = -0.76dB
 - ◆ Return Loss = -27dB
- ◆ Available in a Green ULGA-3.5×9-42L Package

APPLICATIONS

PCI Express Backplanes
Desktop and Notebook Computer
Shared I/O Ports

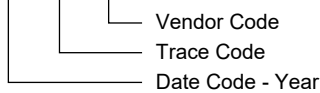
PACKAGE/ORDERING INFORMATION

MODEL	PACKAGE DESCRIPTION	SPECIFIED TEMPERATURE RANGE	ORDERING NUMBER	PACKAGE MARKING	PACKING OPTION
SGM7301	ULGA-3.5×9-42L	-40°C to +85°C	SGM7301YULO42G/TR	SGM7301 YULO42 XXXXX	Tape and Reel, 5000

MARKING INFORMATION

NOTE: XXXXX = Date Code, Trace Code and Vendor Code.

XXXXX



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_{DD} -0.5V to 3.7V
- Voltage
 - Differential I/O..... -0.5V to 3.0V
 - Control Pin, SEL -0.5V to 3.7V
- Junction Temperature.....+150°C
- Storage Temperature Range -55°C to +150°C
- Lead Temperature (Soldering, 10s).....+260°C
- ESD Susceptibility
 - HBM..... 900V
 - CDM 2000V

RECOMMENDED OPERATING CONDITIONS

- Operating Temperature Range..... -40°C to +85°C
- Supply Voltage, V_{DD}3.0V to 3.6V
- SEL Pin Input High Voltage, V_{IH} 2V to V_{DD}
- SEL Pin Input Low Voltage, V_{IL} -0.1V to 0.4V
- Differential Voltage (VPP), V_{I/O_DIFF} 0V to 1.8V
- Common Voltage, V_{I/O_CM}0V to 2V

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.

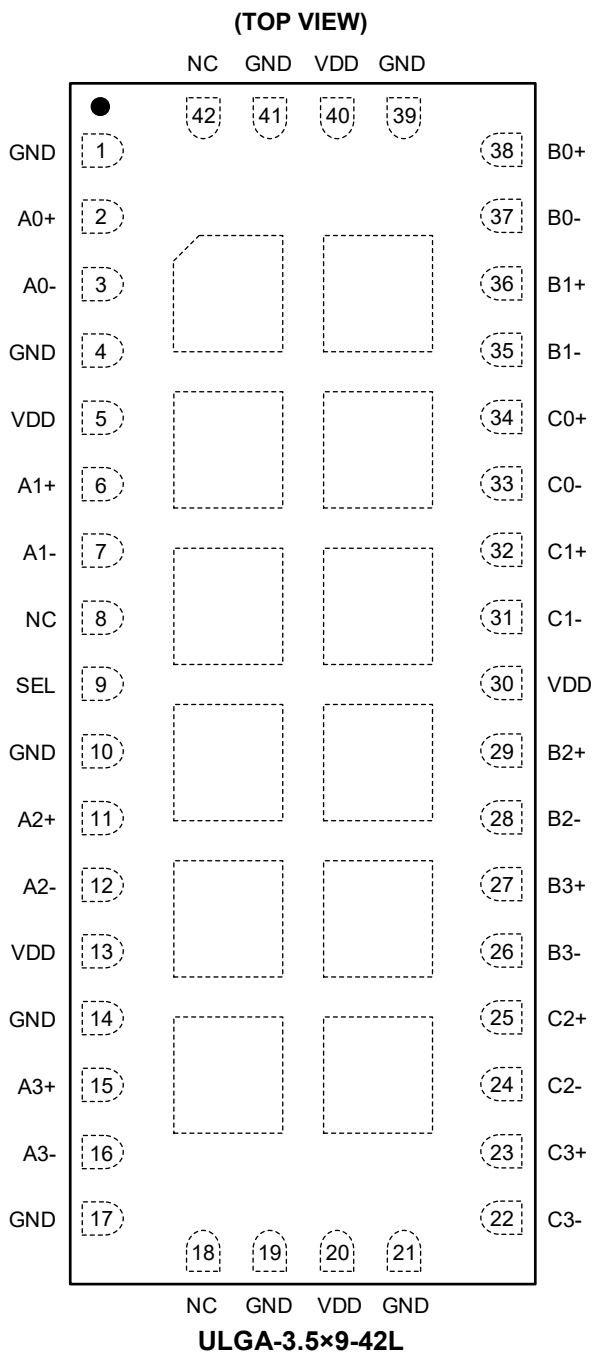
ESD SENSITIVITY CAUTION

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

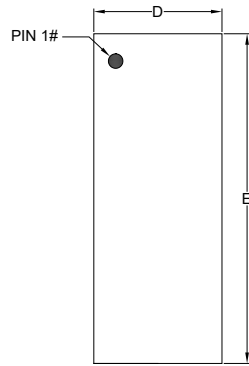


PIN DESCRIPTION

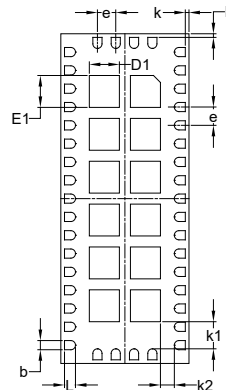
PIN	NAME	TYPE	FUNCTION
2	A0+	I/O	Channel A0, Positive Signal.
3	A0-	I/O	Channel A0, Negative Signal.
6	A1+	I/O	Channel A1, Positive Signal.
7	A1-	I/O	Channel A1, Negative Signal.
11	A2+	I/O	Channel A2, Positive Signal.
12	A2-	I/O	Channel A2, Negative Signal.
15	A3+	I/O	Channel A3, Positive Signal.
16	A3-	I/O	Channel A3, Negative Signal.
38	B0+	I/O	Channel B0, Positive Signal.
37	B0-	I/O	Channel B0, Negative Signal.
36	B1+	I/O	Channel B1, Positive Signal.
35	B1-	I/O	Channel B1, Negative Signal.
29	B2+	I/O	Channel B2, Positive Signal.
28	B2-	I/O	Channel B2, Negative Signal.
27	B3+	I/O	Channel B3, Positive Signal.
26	B3-	I/O	Channel B3, Negative Signal.
34	C0+	I/O	Channel C0, Positive Signal.
33	C0-	I/O	Channel C0, Negative Signal.
32	C1+	I/O	Channel C1, Positive Signal.
31	C1-	I/O	Channel C1, Negative Signal.
25	C2+	I/O	Channel C2, Positive Signal.
24	C2-	I/O	Channel C2, Negative Signal.
23	C3+	I/O	Channel C3, Positive Signal.
22	C3-	I/O	Channel C3, Negative Signal.
8, 18, 42	NC	NC	No Connection.
1, 4, 10, 14, 17, 19, 21, 39, 41	GND	Power	Ground.
9	SEL	I	Channel Select.
5, 13, 20, 30, 40	VDD	Power	Power Supply Voltage.

PACKAGE OUTLINE DIMENSIONS

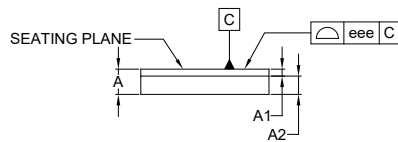
ULGA-3.5×9-42L



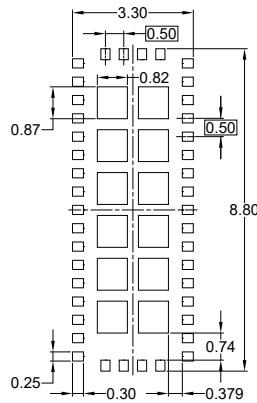
TOP VIEW



BOTTOM VIEW



SIDE VIEW



RECOMMENDED LAND PATTERN (Unit: mm)

Symbol	Dimensions In Millimeters		
	MIN	MOD	MAX
A	0.630	0.690	0.750
A1	0.160	0.190	0.220
A2	0.500 BSC		
b	0.200	0.250	0.300
D	3.400	3.500	3.600
E	8.900	9.000	9.100
D1	0.770	0.820	0.870
E1	0.820	0.870	0.920
e	0.500 BSC		
L	0.250	0.300	0.350
k	0.100 REF		
k1	0.740 REF		
k2	0.379 REF		
eee	0.100		

NOTE: This drawing is subject to change without notice.

PACKAGE INFORMATION

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
ULGA-3.5×9-42L	13"	24.4	3.80	9.30	1.05	4.0	8.0	2.0	24.0	Q1

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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
13"	386	280	370	5

DD0002