



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: 8GHz at -3dB
- Excellent Dynamic Characteristics at 4GHz
 - ◆ Crosstalk = -30dB
 - ◆ Off Isolation = -19dB
 - ◆ Insertion Loss = -1.4dB
 - ◆ Return Loss = -12dB
- Available in a Green ULGA-3.5×9-42L Package

APPLICATIONS

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

代理商 威尔迈 www.visvie.com
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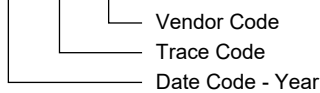
PACKAGE/ORDERING INFORMATION

| 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.

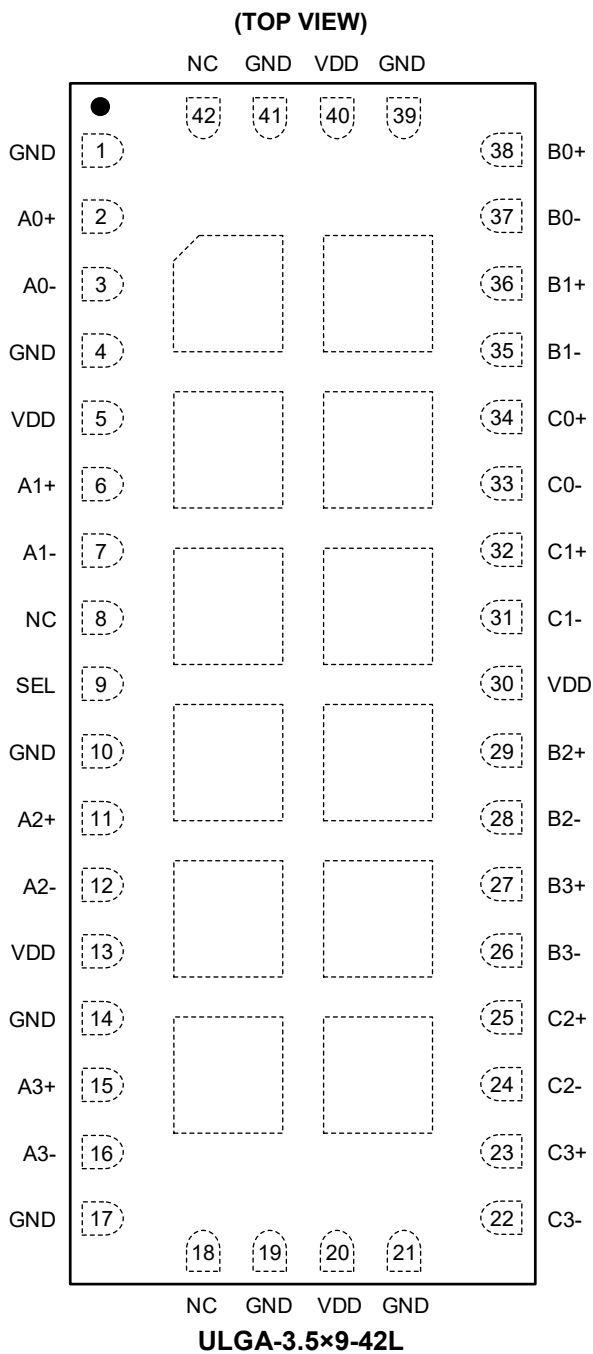
ESD SENSITIVITY CAUTION

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

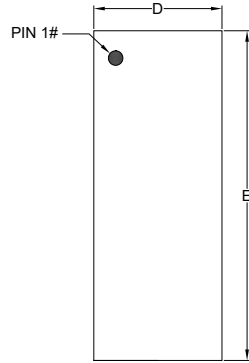


PIN DESCRIPTION

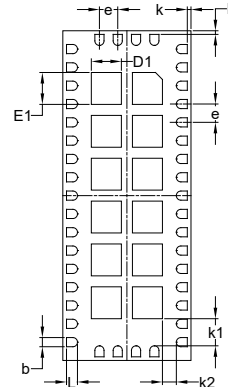
| PIN | NAME | TYPE | FUNCTION |
|-------------------------------------|------|-------|------------------------------|
| 2 | A0+ | I/O | Channel A0, Positive Signal. |
| 3 | A0- | I/O | Channel A0, Negative Signal. |
| 6 | A1+ | I/O | Channel A1, Positive Signal. |
| 7 | A1- | I/O | Channel A1, Negative 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

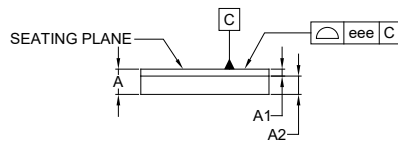
ULGA-3.5x9-42L



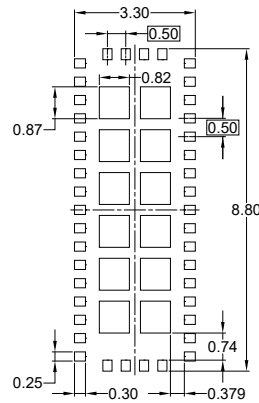
TOP VIEW



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 |

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 |
|-----------|-------------|------------|-------------|--------------|
| 13" | 386 | 280 | 370 | 5 |

DD0002

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