

GENERAL DESCRIPTION

The 74LVC2G08 is a dual 2-input AND gate that is designed for 1.65V to 5.5V V_{CC} operation. The device can be used as a down translator in a mixed 3.3V and 5.5V system environment. The device features the Boolean function $Y = A \times B$ or $Y = \overline{\overline{A} + \overline{B}}$.

This device is highly suitable for partial power-down applications using power-off leakage current (I_{OFF}) circuit. When the device is powered down, the current backflow will be prevented from passing through the device.

APPLICATIONS

- Wireless Basestation
- Networking
- Access Device
- Signal Process
- Notebook PC
- Mobile Phone

FUNCTION TABLE

INPUT		OUTPUT
nA	nB	nY
H	H	H
L	X	L
X	L	L

$Y = A \times B$ or $Y = \overline{\overline{A} + \overline{B}}$

H = High Voltage Level

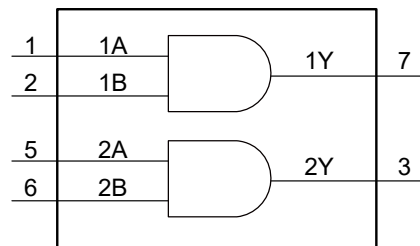
L = Low Voltage Level

X = Don't Care

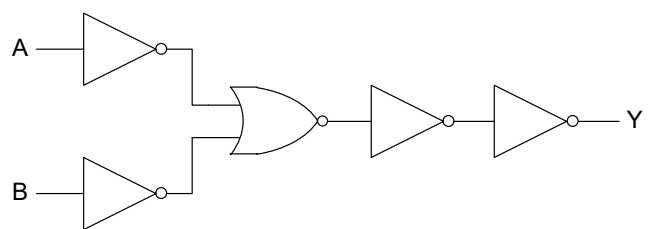
FEATURES

- **Wide Supply Voltage Range: 1.65V to 5.5V**
- **Inputs Accept Voltage up to 5.5V**
- **+24mA/-24mA Output Current at $V_{CC} = 3V$**
- **Low Power Dissipation**
- **Propagation Delay: 4ns (TYP) at 3.3V**
- **Support Live Insertion, Partial-Power-Down Mode and Back-Drive Protection**
- **-40°C to +125°C Operating Temperature Range**
- **Available in a Green VSSOP-8 Package**

LOGIC SYMBOL



LOGIC DIAGRAM

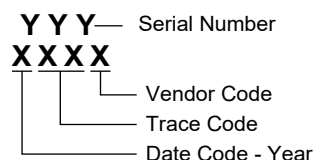


PACKAGE/ORDERING INFORMATION

MODEL	PACKAGE DESCRIPTION	SPECIFIED TEMPERATURE RANGE	ORDERING NUMBER	PACKAGE MARKING	PACKING OPTION
74LVC2G08	VSSOP-8	-40°C to +125°C	74LVC2G08XVS8G/TR	01P 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 ⁽¹⁾

Supply Voltage, V_{CC}	-0.5V to 6.5V
Input Voltage, V_I ⁽²⁾	-0.5V to 6.5V
Output Voltage, V_O ⁽²⁾⁽³⁾	
High-State or Low-State.....	-0.5V to $V_{CC} + 0.5V$
High-Impedance or Power-Off State.....	-0.5V to 6.5V
Input Clamping Current, I_{IK} ($V_I < 0V$).....	-50mA
Output Clamping Current, I_{OK} ($V_O < 0V$).....	-50mA
Output Current, I_O	$\pm 50mA$
Supply Current, I_{CC}	100mA
Ground Current, I_{GND}	-100mA
Junction Temperature ⁽⁴⁾	+150°C
Storage Temperature Range.....	-65°C to +150°C
Lead Temperature (Soldering, 10s).....	+260°C
ESD Susceptibility	
HBM.....	5000V
CDM.....	1000V

RECOMMENDED OPERATING CONDITIONS

Supply Voltage, V_{CC}	1.65V to 5.5V
Data Retention Only, V_{CC}	1.5V (MIN)
Input Voltage, V_I	0V to 5.5V
Output Voltage, V_O	0V to V_{CC}
High-Level Output Current, I_{OH}	
$V_{CC} = 1.65V$	-4mA (MAX)
$V_{CC} = 2.3V$	-8mA (MAX)
$V_{CC} = 3V$	-24mA (MAX)
$V_{CC} = 4.5V$	-32mA (MAX)
Low-Level Output Current, I_{OL}	
$V_{CC} = 1.65V$	4mA (MAX)
$V_{CC} = 2.3V$	8mA (MAX)
$V_{CC} = 3V$	24mA (MAX)
$V_{CC} = 4.5V$	32mA (MAX)
Input Transition Rise or Fall Rate, $\Delta t/\Delta V$	
$V_{CC} = 1.8V \pm 0.15V, 2.5V \pm 0.2V$	20ns/V (MAX)

$V_{CC} = 3.3V \pm 0.3V$	10ns/V (MAX)
$V_{CC} = 5V \pm 0.5V$	5ns/V (MAX)
Operating 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.
- The input and output voltage ratings may be exceeded if the input and output clamp current ratings are observed.
- When $V_{CC} = 0V$ (power-down mode), the output voltage can be 5.5V in normal operation.
- The performance capability of a high-performance integrated circuit in conjunction with its thermal environment can create junction temperatures which are detrimental to reliability.

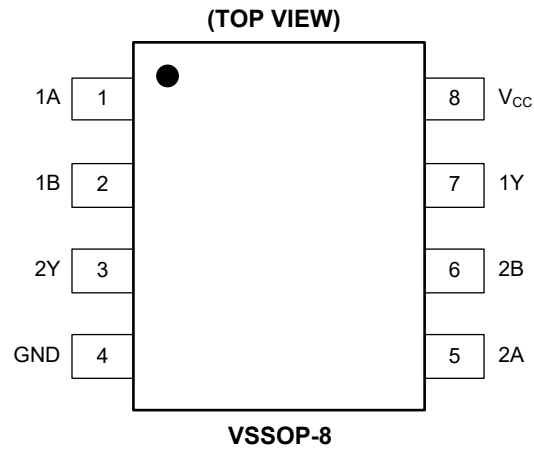
ESD SENSITIVITY CAUTION

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

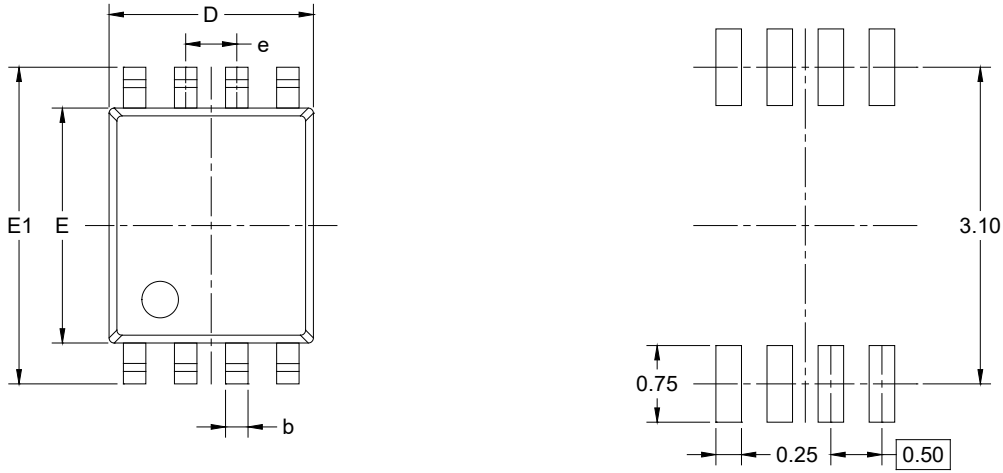


PIN DESCRIPTION

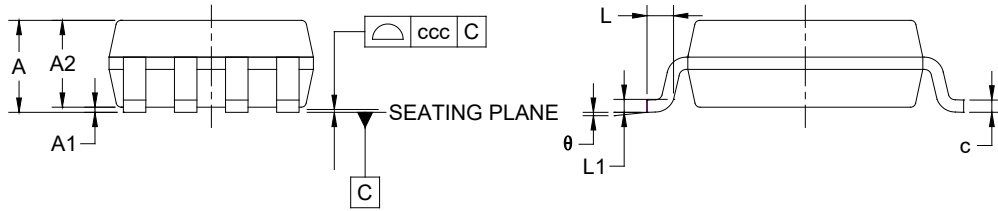
NAME	PIN	FUNCTION
1A, 2A	1, 5	Data Inputs.
1B, 2B	2, 6	Data Inputs.
1Y, 2Y	7, 3	Data Outputs.
GND	4	Ground.
V _{CC}	8	Supply Voltage.

PACKAGE OUTLINE DIMENSIONS

VSSOP-8



RECOMMENDED LAND PATTERN (Unit: mm)



Symbol	Dimensions In Millimeters		
	MIN	MOD	MAX
A	-	-	1.000
A1	0.000	-	0.150
A2	0.600	-	0.850
b	0.170	-	0.270
c	0.080	-	0.230
D	1.900	-	2.100
E	2.200	-	2.400
E1	3.000	-	3.200
e	0.500 BSC		
L	0.150	-	0.400
L1	0.120 BSC		
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-187 CA.

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
VSSOP-8	7"	9.5	2.25	3.35	1.05	4.0	4.0	2.0	8.0	Q3

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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
7" (Option)	368	227	224	8
7"	442	410	224	18

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