

MSKSEMI 美森科

SEMICONDUCTOR



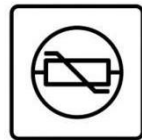
ESD



TVS



TSS



MOV



GDT



PLED

SN74LVC1G09xxxx-MS

Product specification

Description

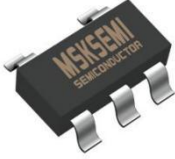
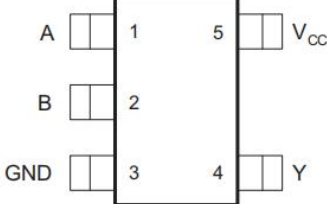
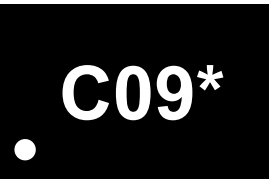
The SN74LVC1G09xxxx-MS is designed for 1.65-V to 5.5- V VCC operation.


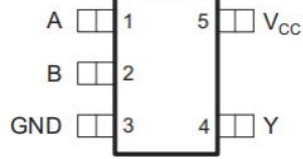
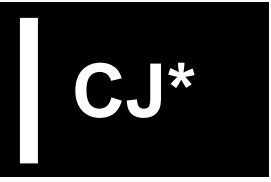
is a single 2-input AND gate with open-drain output . It performs the Boolean function $Y=A \cdot B$ or $Y = \overline{\overline{A} + \overline{B}}$ in positive logic . For digital operation this device must have an external pull-up resistor to establish a logic HIGH-level.

Features

- Supports 5-V VCC Operation
- Inputs and Open-Drain Output accept voltages to 5.5V
- Low Power Consumption, 10- μ A Max ICC
- ± 24 mA output drive(VCC=3.3V)
- Ioff supports partial-power-down mode

Connection Diagrams and Pin Description

SOT-23-5	PIN DESCRIPTION	MARKING
		

SC70-5	PIN DESCRIPTION	MARKING
		

PIN No.	NAME	I/O	FUNCTION
DBV/DCK			
1	A	I	Input
2	B	I	Input
3	GND		Ground
4	Y	O	Output
5	VCC		Supply Voltage

ORDER INFORMATION

ORDERING NUMBER	PACKAGE	PACKING OPTION
SN74LVC1G09DBVR-MS	SOT23-5	3000PCS
SN74LVC1G09DCKR-MS	SC70-5	3000PCS

Logic Diagram

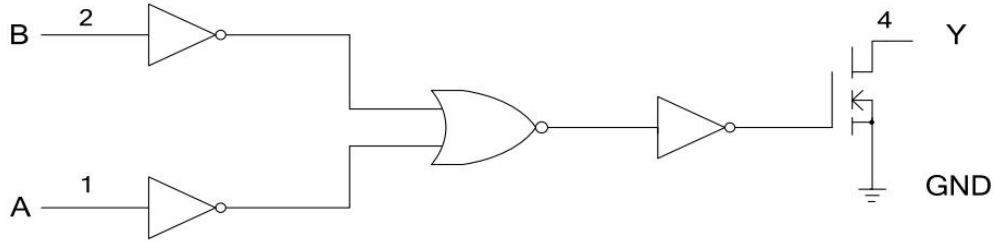


Figure 3.1: SN74LVC1G09xxxx-MS Logic Diagram

Function Table

Input		Output
A	B	Y
0	1	0
0	0	0
1	0	0
1	1	1

X = don't care, 1=High State, 0=Low State,Z=High Impedance

Absolute Maximum Ratings

Symbol	Parameter	MIN	MAX	Unit
V _{CC}	Supply Voltage	-0.5	6.5	V
V _I	Input Voltage Range	-0.5	6.5	V
V _O	Voltage Range(applied to any output in the high-impedance or power-off state) ⁽¹⁾	-0.5	6.5	V
	Voltage Range(applied to any output in the high or low state)	-0.5	V _{CC} + 0.5	V
I _O	Continuous Output Current		±50	mA
T _J	Junction Temperature		125	°C
T _{OP}	Operating Temperature	0	70	°C

Absolute maximum ratings are those values beyond which the device could be permanently damaged, These are stress ratings only, which do not imply functional operation of the device at these or any other conditions beyond those indicated under normal operating conditions.

- (1) The input and output negative-voltage ratings may be exceeded if the input and output current ratings are observed.

Electrical Characteristics

DC Specifications

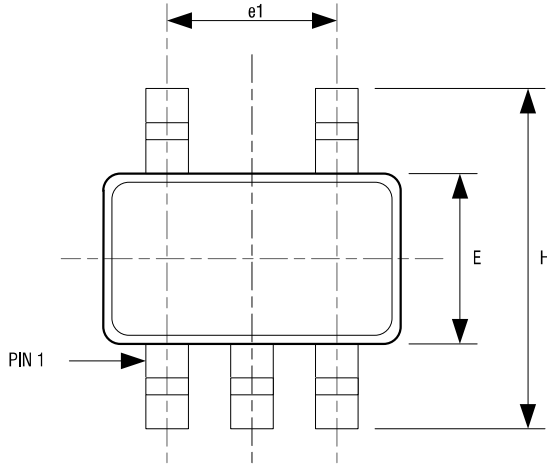
(T_a=25°C, voltages are referenced to GND (ground=0V), unless otherwise specified)

Symbol	Parameter	Test Condition	MIN	TYP	MAX	Unit
V _{IH}	High Level Input Voltage	V _{CC} =1.65V to 1.95V	0.65V _{CC}	--	--	V
		V _{CC} =2.3V to 2.7V	1.7	--	--	V
		V _{CC} =3V to 5.5V	0.7V _{CC}	--	--	V
V _{IL}	Low Level Input Voltage	V _{CC} =1.65V to 1.95V	--	--	0.35V _{CC}	V
		V _{CC} =2.3V to 2.7V	--	--	0.7	V
		V _{CC} =3V to 3.6V	--	--	0.8	V
		V _{CC} =4.5V to 5.5V	--	--	0.3V _{CC}	V
I _{OL}	Low Level Output Current	V _{CC} =1.65V	--	--	4	mA
		V _{CC} =2.3V	--	--	8	mA
		V _{CC} =3V	--	--	16	mA
			--	--	24	mA
		V _{CC} =4.5V	--	--	32	mA

Symbol	Parameter	Test Condition	MIN	TYP	MAX	Unit
V _{OL}	Low Level Output Voltage	V _{CC} =1.65V to 5.5V, I _{OH} =100uA	--	--	0.1	V
		V _{CC} =1.65V, I _O =4mA	--	0.09	--	V
		V _{CC} =2.3V, I _O =8mA	--	0.10	--	V
		V _{CC} =3V, I _O =16mA	--	0.15	--	V
		V _{CC} =3V, I _O =24mA	--	0.25	--	V
		V _{CC} =4.5V, I _O =32mA	--	0.25	--	V
I _I	A or B Inputs Leakage Current	V _{CC} =0 to 5.5V, V _I =V _{CC} or GND	--	0	±1	uA
I _{off}	Power Off Leakage Current	V _{CC} =0V, V _I or V _O =5.5V	--	0	±10	uA
I _{oz}	3-State Output OFF-State Current	V _{CC} =3.6V, V _O = 0 to 5.5V	--	0	10	uA
I _{CC}	Quiescent Supply Current	V _{CC} =1.65V to 5.5V, V _I =V _{CC} or GND, I _O =0	--	0	10	uA
ΔI _{CC}	Additional Quiescent Supply Current Per Input Pin	V _{CC} =3V to 5.5V, one input at V _{CC} -0.6V, Other inputs at V _{CC} or GND	--	--	500	uA

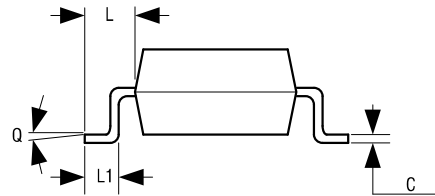
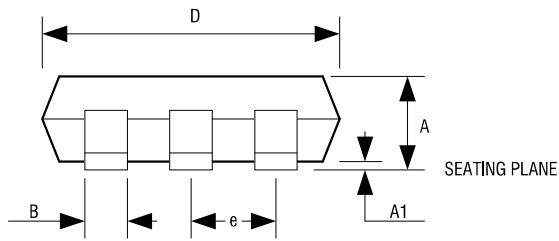
PACKAGE DESCRIPTION

SOT-23-5



5LD SOT-23 PACKAGE OUTLINE DIMENSIONS

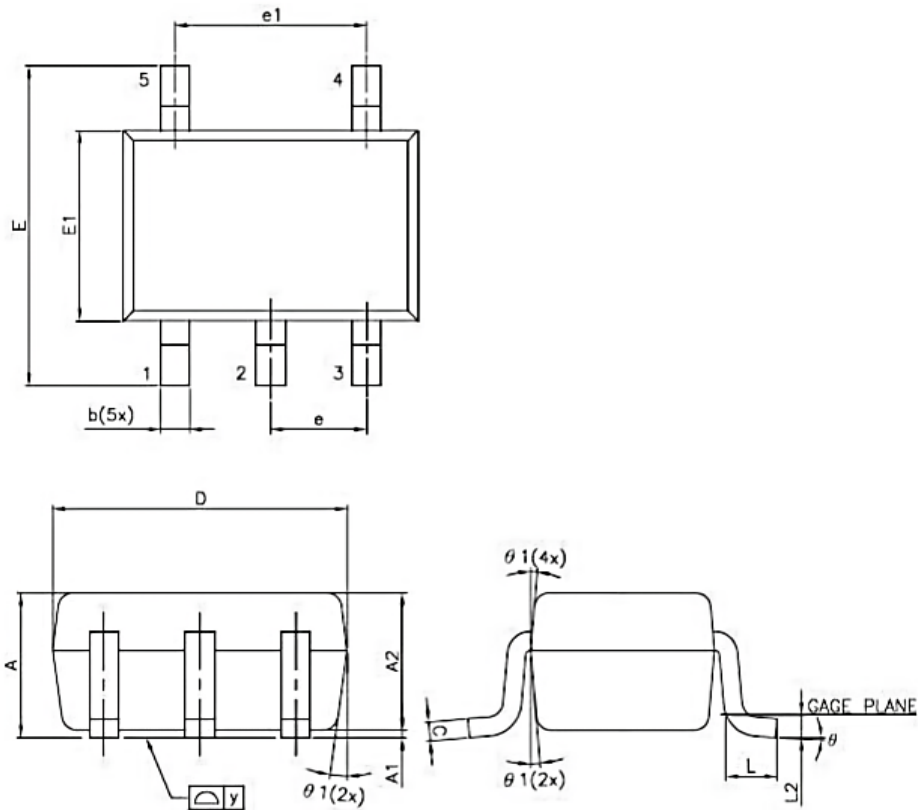
Dimension	Min.	Max.
A	1.05	1.35
A1	0.04	.15
B	0.3	0.5
C	0.09	0.2
D	2.8	3.0
H	2.5	3.1
E	1.5	1.7
e	0.95 REF.	
e1	1.90 REF.	
L1	0.2	0.55
L	0.35	0.8
Q	0°	10°



NOTE:

1. DIMENSIONS ARE IN MILLIMETERS
2. DRAWING NOT TO SCALE
3. DIMENSIONS ARE INCLUSIVE OF PLATING
4. DIMENSIONS ARE EXCLUSIVE OF MOLD FLASH AND METAL BURR

SC70-5



Symbol	Dim in mm		
	MIN	TYP	MAX
A	0.90	1.00	1.10
A1	0.00	0.05	0.10
A2	0.90	0.95	1.00
b	0.15	0.25	0.35
C	0.10	0.12	0.15
D	1.80	2.00	2.20
E	2.15	2.25	2.35
E1	1.15	1.25	1.35
e	0.650TYP.		
e1	1.20	1.30	1.40
L	0.25	0.30	0.40
L2	0.15TYP.		
Y	0.00	0.05	0.10
theta	4°	8°	12°

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