

# MSKSEMI 美森科

SEMICONDUCTOR



ESD



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MOV



GDT



PLED

## SN74LVC1G66xxxx-MS

Product specification

## Description

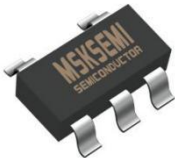
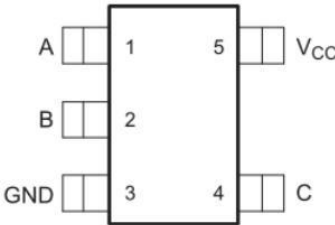

This single analog switch is designed for 1.65-V to 5.5-V VCC operation.


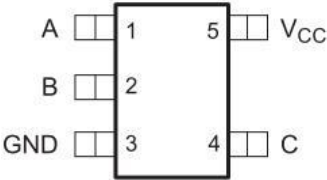

The SN74LVC1G66xxxx-MS device can handle analog and digital signals. The device permits bidirectional transmission of signals with amplitudes of up to 5.5 V(peak).

## Features

- 1.65-V to 5.5-V VCC Operation
- Inputs Accept Voltages to 5.5 V
- High On-Off Output Voltage Ratio
- High Degree of Linearity
- Low ON-State Resistance, Typically : 2.5  $\Omega$  (VCC= 4.5 V)

## Connection Diagrams and Pin Description

SOT-23-5	PIN DESCRIPTION	MARKING
		

SC70-5	PIN DESCRIPTION	MARKING
		

PIN No. DBV/DCK	NAME	I/O	FUNCTION
1	A	I/O	Bidirectional signal to be switched
2	B	I/O	Bidirectional signal to be switched
3	GND	-	Ground pin
4	C	I	Controls the switch (L = OFF, H = ON)
5	VCC	-	Supply Voltage

**ORDER INFORMATION**

ORDERING NUMBER	PACKAGE	PACKING OPTION
SN74LVC1G66DBVR-MS	SOT23-5	3000PCS
SN74LVC1G66DCKR-MS	SC70-5	3000PCS

**Logic Diagram**

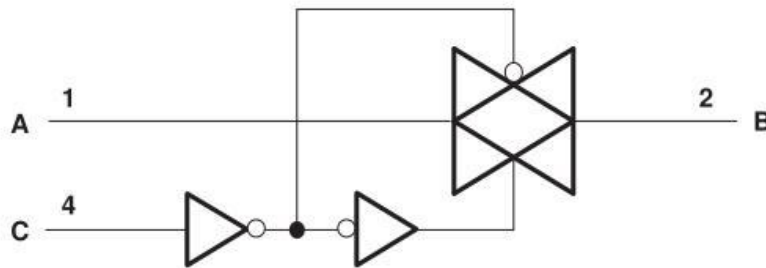


Figure 3.1: SN74LVC1G66xxxx-MS Logic Diagram

**Absolute Maximum Ratings**

over operating free-air temperature range (unless otherwise noted)(1)

Symbol	Parameter	MIN	MAX	Unit
V <sub>CC</sub>	Supply Voltage	-0.5	6.5	V
V <sub>I</sub>	Input Voltage Range	-0.5	6.5	V
V <sub>I/O</sub>	Switch I/O voltage(2)(3)(4)	-0.5	V <sub>CC</sub> + 0.5	V
I <sub>IK</sub>	Continuous Output Current V <sub>I</sub> < 0		-50	mA
T <sub>J</sub>	Junction Temperature		125	°C
T <sub>OP</sub>	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) Stresses beyond those listed under Absolute Maximum Ratings may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under Recommended Operating Conditions is not implied. Exposure to absolute- maximum-rated conditions for extended periods may affect device reliability.

(2) All voltages are with respect to ground, unless otherwise specified.

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

(4) This value is limited to 5.5 V maximum.

## Recommended Operating Conditions

Symbol	Parameter	MIN	MAX	Unit
V <sub>CC</sub>	Supply Voltage	1.65	5.5	V
V <sub>I/O</sub>	Switch I/O voltage	0	V <sub>CC</sub>	V
V <sub>IH</sub>	High-level input voltage, control input	V <sub>CC</sub> = 1.65 V to 1.95 V	V <sub>CC</sub> × 0.65	V
		V <sub>CC</sub> = 2.3 V to 2.7 V	V <sub>CC</sub> × 0.7	
		V <sub>CC</sub> = 3 V to 3.6 V	V <sub>CC</sub> × 0.7	
		V <sub>CC</sub> = 4.5 V to 5.5 V	V <sub>CC</sub> × 0.7	
V <sub>IL</sub>	Low-level input voltage, control input	V <sub>CC</sub> = 1.65 V to 1.95 V	V <sub>CC</sub> × 0.35	V
		V <sub>CC</sub> = 2.3 V to 2.7 V	V <sub>CC</sub> × 0.3	
		V <sub>CC</sub> = 3 V to 3.6 V	V <sub>CC</sub> × 0.3	
		V <sub>CC</sub> = 4.5 V to 5.5 V	V <sub>CC</sub> × 0.3	
V <sub>I</sub>	Control input voltage	0	5.5	V

## Electrical Characteristics

### DC Specifications

(T<sub>a</sub>=25°C, voltages are referenced to GND (ground=0V), unless otherwise specified)

Symbol	Parameter	Test Condition	V <sub>CC</sub>	MIN	TYP	MAX	Unit	
r <sub>on</sub>	ON-state switch resistance	V <sub>I</sub> = V <sub>CC</sub> or GND, V <sub>C</sub> = V <sub>IH</sub>	IS = 4 mA	1.65 V	--	10	--	Ω
			IS = 8mA	2.3 V	--	5	--	
			IS = 24 mA	3V	--	4	--	
			IS = 32mA	4.5V	--	3	--	
r <sub>on(p)</sub>	Peak on resistance	V <sub>I</sub> = V <sub>CC</sub> or GND, V <sub>C</sub> = V <sub>IH</sub>	IS = 4 mA	1.65 V	--	--	300	Ω
			IS = 8mA	2.3 V	--	--	100	
			IS = 24 mA	3V	--	--	50	
			IS = 32mA	4.5V	--	--	25	
IS(off)	OFF-state switch leakage current	V <sub>I</sub> = V <sub>CC</sub> and V <sub>O</sub> = GND or V <sub>I</sub> = GND and V <sub>O</sub> = V <sub>CC</sub> , V <sub>C</sub> = V <sub>IL</sub>	5.5V	--	--	±1	μA	
IS(on)	ON-state switch leakage current	V <sub>I</sub> = V <sub>CC</sub> or GND, V <sub>C</sub> = V <sub>IH</sub> , V <sub>O</sub> = Open	5.5V	--	--	±1	μA	
I <sub>I</sub>	Control input current	V <sub>C</sub> = V <sub>CC</sub> or GND	5.5 V	--	--	±1	uA	
I <sub>CC</sub>	Supply current	V <sub>C</sub> = V <sub>CC</sub> or GND	5.5 V	--	--	10	uA	
ΔI <sub>CC</sub>	Supply current change	V <sub>C</sub> = V <sub>CC</sub> – 0.6 V	5.5 V	--	--	500	uA	

### Application Information

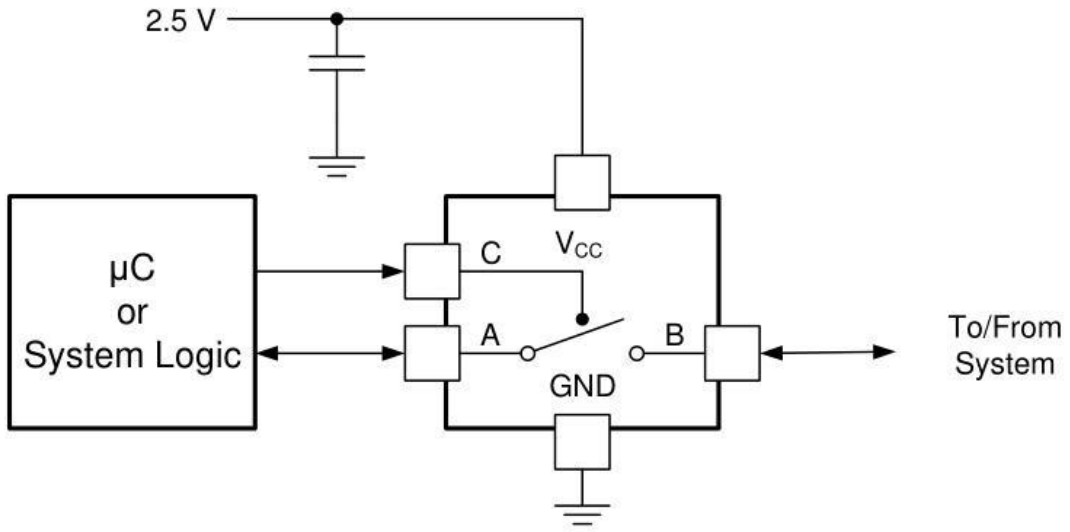
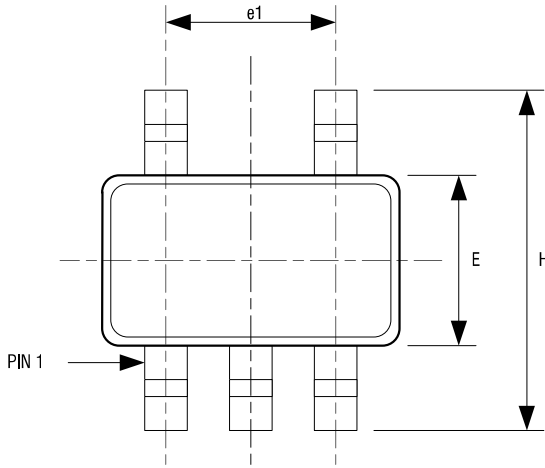


Figure 5.1: Application Schematic

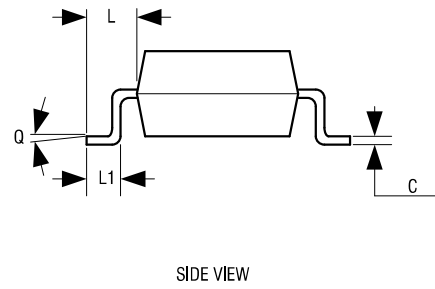
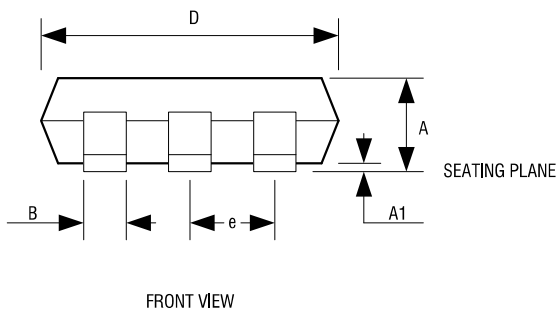
**PACKAGE DESCRIPTION**

**SOT-23-5**



5LD SOT-23 PACKAGE OUTLINE DIMENSIONS

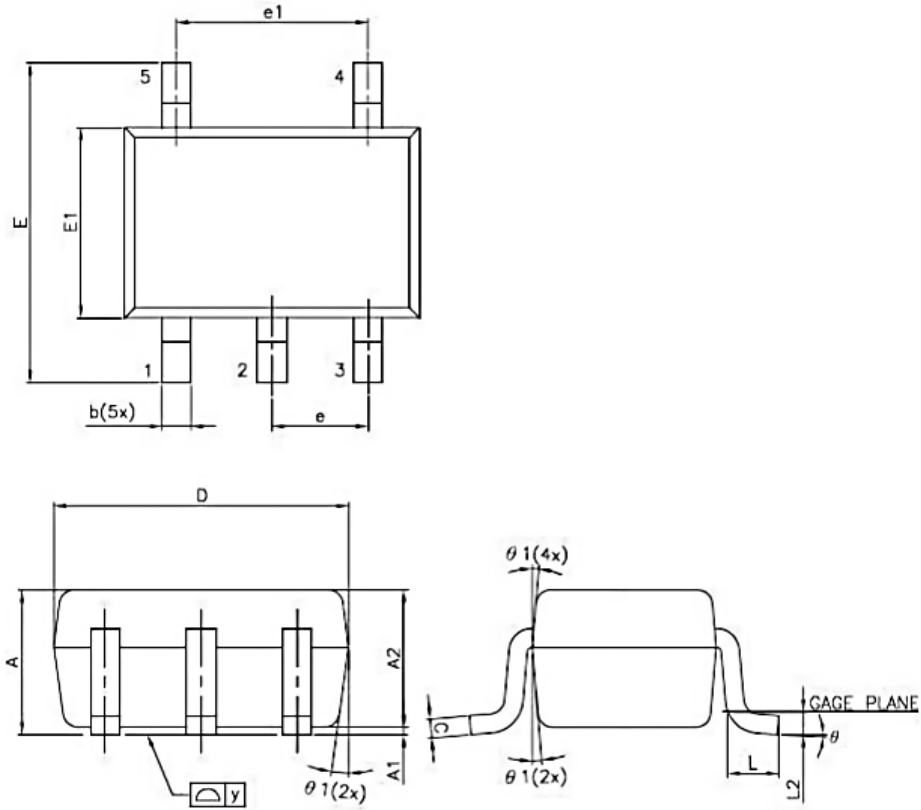
Dimension	Min.	Max.
A	1.05	1.35
A1	0.04	.15
B	0.3	0.5
C	0.09	0.2
D	2.8	3.0
H	2.5	3.1
E	1.5	1.7
e	0.95 REF.	
e1	1.90 REF.	
L1	0.2	0.55
L	0.35	0.8
Q	0°	10°



**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
θ	4°	8°	12°

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