

GENERAL DESCRIPTION

The SGM48763Q is a CMOS-type analog switch integrating two separate 2:1 signal channels. Powered by a single supply ranging from 1.65V to 5.5V, it delivers low on-resistance and resistance matching. This component is well-suited for transmitting high-precision analog and digital signals.

The device is AEC-Q100 qualified (Automotive Electronics Council (AEC) standard Q100 Grade 1) and it is suitable for automotive applications.

The SGM48763Q is available in a Green MSOP-10 package. It operates over an operating temperature range of -40°C to +125°C.

FEATURES

- AEC-Q100 Qualified for Automotive Applications
Device Temperature Grade 1
 $T_A = -40^{\circ}\text{C}$ to $+125^{\circ}\text{C}$
- 1.65V to 5.5V Single-Supply Operation
- Control Inputs are 5.5V Tolerant
- On-Resistance: 8.5Ω (TYP) at 4.5V Supply
- Specified Break-Before-Make Switching
- Low Charge Injection
- Excellent On-Resistance Matching
- -40°C to +125°C Operating Temperature Range
- Available in a Green MSOP-10 Package

APPLICATIONS

Battery Management Systems
Analog Input Modules
Data Acquisition Systems
Digital Signal Switching

TYPICAL APPLICATION

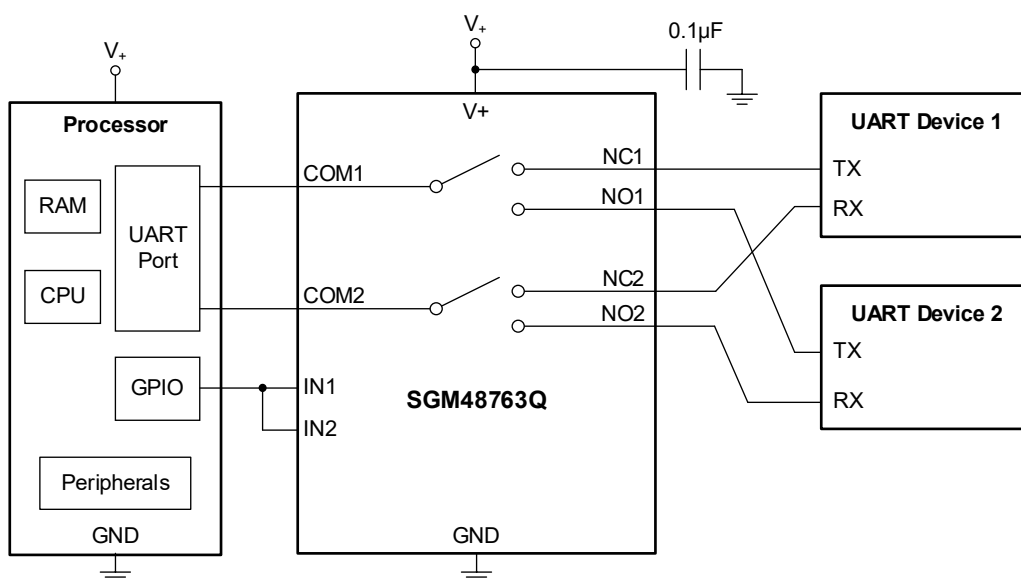


Figure 1. Typical Application Circuit

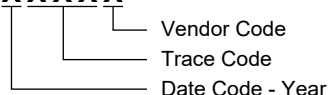
PACKAGE/ORDERING INFORMATION

MODEL	PACKAGE DESCRIPTION	SPECIFIED TEMPERATURE RANGE	ORDERING NUMBER	PACKAGE TOP MARKING	PACKING OPTION
SGM48763Q	MSOP-10	-40°C to +125°C	SGM48763QMS10G/TR	368MS10 XXXXX	Tape and Reel, 4000

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_+ ⁽¹⁾	-0.5V to 6.5V
Analog Voltage Range, V_{NC} , V_{NO} , V_{COM} ^{(1) (2) (3)}	-0.5V to ($V_+ + 0.5V$)
Digital Input Voltage Range, V_{IN} ^{(1) (2)}	-0.5V to 6.5V
Analog Port Diode Current, $I_{I/O}$	
V_{NC} , V_{NO} , $V_{COM} < 0V$ or V_{NC} , V_{NO} , $V_{COM} > V_+$	±50mA
On-State Switch Current, I_{NC} , I_{NO} , I_{COM}	
V_{NC} , V_{NO} , $V_{COM} = 0V$ to V_+	±50mA
Digital Input Clamp Current, I_{IK} ($V_{IN} < 0V$)	-50mA
Continuous Current through V_+ or GND	±100mA
Package Thermal Resistance	
MSOP-10, θ_{JA}	153.7°C/W
MSOP-10, θ_{JB}	99.4°C/W
MSOP-10, θ_{JC}	67.3°C/W
Junction Temperature	+150°C
Storage Temperature Range	-65°C to +150°C
Lead Temperature (Soldering, 10s)	+260°C
ESD Susceptibility ^{(4) (5)}	
HBM	±4000V
CDM	±1000V

NOTES:

1. All voltages are with respect to ground, unless otherwise specified.
2. The input and output voltage ratings may be exceeded if the input and output clamp-current ratings are observed.
3. This value is limited to 5.5V maximum.
4. For human body model (HBM), all pins comply with AEC-Q100-002 specification.
5. For charged device model (CDM), all pins comply with AEC-Q100-011 specification.

RECOMMENDED OPERATING CONDITIONS

Operating Ambient 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.

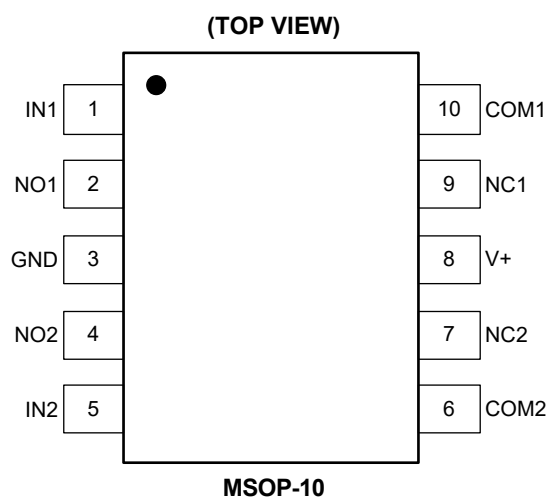
ESD SENSITIVITY CAUTION

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
1	IN1	I	Digital Control to Connect COM1 to NO1 or NC1.
2	NO1	I/O	Normally Open Pin 1.
3	GND	G	Ground.
4	NO2	I/O	Normally Open Pin 2.
5	IN2	I	Digital Control to Connect COM2 to NO2 or NC2.
6	COM2	I/O	Common Pin 2.
7	NC2	I/O	Normally Closed Pin 2.
8	V+	P	Power Supply.
9	NC1	I/O	Normally Closed Pin 1.
10	COM1	I/O	Common Pin 1.

NOTE: I = input, I/O = input/output, P = power, G = ground.

FUNCTIONAL BLOCK DIAGRAM

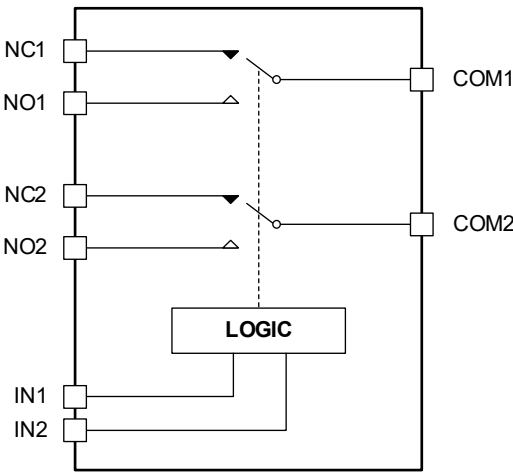


Figure 2. Block Diagram

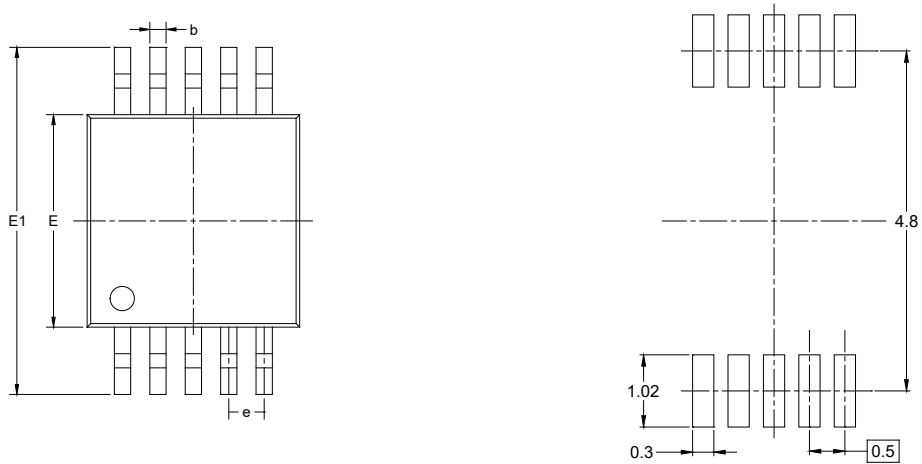
FUNCTION TABLE

LOGIC	NO	NC
0	OFF	ON
1	ON	OFF

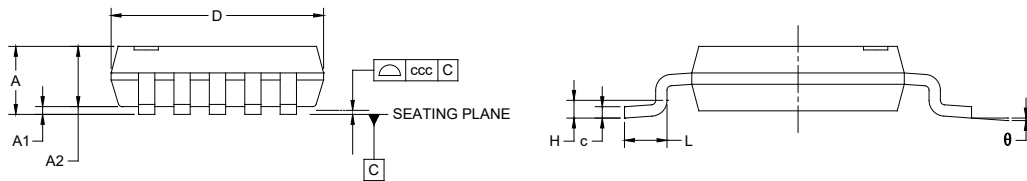
NOTE: Switches shown for logic “0” input.

PACKAGE OUTLINE DIMENSIONS

MSOP-10



RECOMMENDED LAND PATTERN (Unit: mm)



Symbol	Dimensions In Millimeters		
	MIN	NOM	MAX
A	-	-	1.100
A1	0.000	-	0.150
A2	0.750	-	0.950
b	0.170	-	0.330
c	0.080	-	0.230
D	2.900	-	3.100
E	2.900	-	3.100
E1	4.750	-	5.050
e	0.500 BSC		
H	0.250 TYP		
L	0.400	-	0.800
θ	0°	-	8°
ccc	0.100		

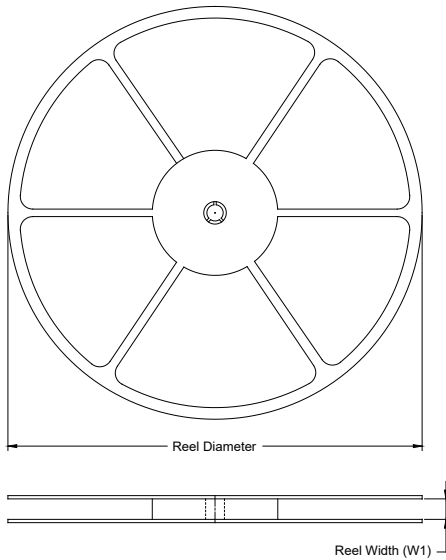
NOTES:

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.

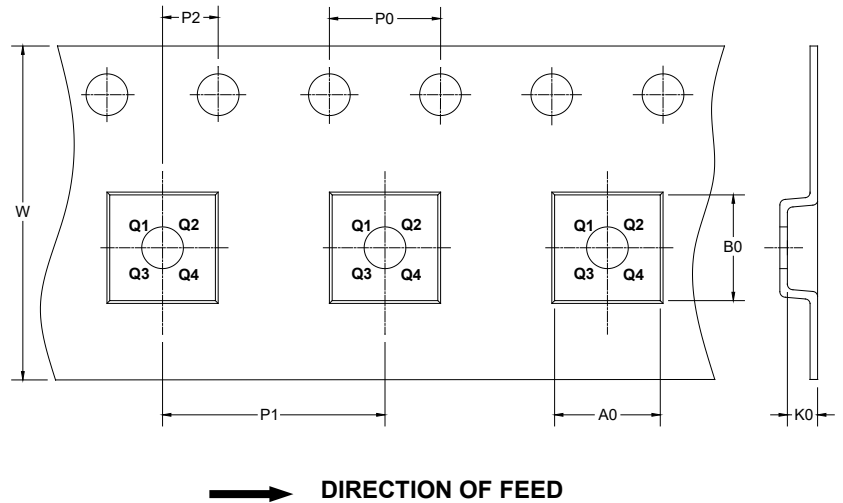
PACKAGE INFORMATION

TAPE AND REEL INFORMATION

REEL DIMENSIONS



TAPE DIMENSIONS



NOTE: The picture is only for reference. Please make the object as the standard.

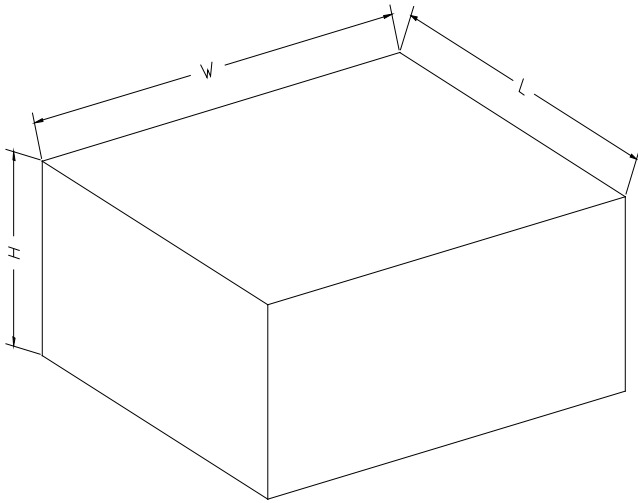
KEY PARAMETER LIST OF TAPE AND REEL

Package Type	Reel Diameter	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P0 (mm)	P1 (mm)	P2 (mm)	W (mm)	Pin1 Quadrant
MSOP-10	13"	12.4	5.20	3.30	1.50	4.0	8.0	2.0	12.0	Q1

DD00001

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