

4-Channel Programmable Voltage Monitor

General Description

Overview

Renesas SLG7SQ50533 is a low power and small form device. The mixed-signal IC is housed in a 1.6mm x 2.0mm STQFN package which is optimal for using with small devices.

This device can be further customized to meet your specific application requirements. Custom designs can be created using the free GUI-based Go Configure™ Software Hub, available for download at [renesas.com](https://www.renesas.com), where example projects are also included. Contact your local Renesas representative or email greenpak@renesas.com for support.

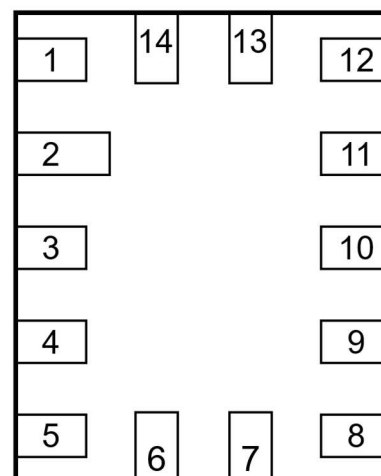
Features

- Low Power Consumption
- RoHS Compliant / Halogen-Free
- 14-pin STQFN: 1.6 mm x 2.0 mm x 0.55 mm, 0.4 mm Pitch

Output Summary

4 Outputs - Push Pull 1X

Pin Configuration



**STQFN-14
(Top View)**

Pin Name

Pin #	Pin name	Pin #	Pin name
1	VDD	8	GND
2	EN1	9	RESET
3	MR	10	IN1
4	NC	11	IN2
5	EN2	12	IN3
6	EN3	13	OUT3
7	OUT2	14	OUT1

4-Channel Programmable Voltage Monitor

Pin Configuration

Pin	Pin Name	Type	Pin Description	Internal Resistors
1	VDD	PWR	Supply Voltage	--
2	EN1	Digital Input	Digital Input without Schmitt trigger	1 MΩ pull-down
3	MR	Digital Input	Digital Input without Schmitt trigger	1 MΩ pull-down
4	NC	--	Keep Floating or connect to GND	--
5	EN2	Digital Input	Digital Input without Schmitt trigger	1 MΩ pull-down
6	EN3	Digital Input	Digital Input without Schmitt trigger	1 MΩ pull-down
7	OUT2	Digital Output	Push Pull 1X	floating
8	GND	GND	Ground	--
9	RESET	Digital Output	Push Pull 1X	floating
10	IN1	Analog Input/Output	Analog Input/Output	floating
11	IN2	Analog Input/Output	Analog Input/Output	floating
12	IN3	Analog Input/Output	Analog Input/Output	floating
13	OUT3	Digital Output	Push Pull 1X	floating
14	OUT1	Digital Output	Push Pull 1X	floating

Ordering Information

Part number	Package type
SLG7SQ50533V	14-pin STQFN - Tape and Reel (3k units)

4-Channel Programmable Voltage Monitor

Absolute Maximum Conditions

Parameter	Min	Max	Unit
Supply Voltage on V_{DD} relative to GND	-0.3	7	V
DC Input Voltage	GND - 0.5	$V_{DD} + 0.5$	V
Maximum Average or DC Current (Through V_{DD} or GND pin)	--	90	mA
Maximum Average or DC Current (Through pin)	Push-Pull 1x	11	mA
Current at Input Pin	-1.0	1.0	mA
Input Leakage Current (Absolute Value)	--	1000	nA
Storage Temperature Range	-65	150	°C
Junction Temperature	--	150	°C
ESD Protection (Human Body Model)	2000	--	V
ESD Protection (Charged Device Model)	1300	--	V
Moisture Sensitivity Level	1		

Electrical Characteristics

Symbol	Parameter	Condition	Min	Typ	Max	Unit
V_{DD}	Supply Voltage		3.90	3.90	5.50	V
T_A	Operating Temperature		-40	25	85	°C
C_{VDD}	Capacitor Value at V_{DD}		0.1	--	--	μF
C_{IN}	Input Capacitance		--	4	--	pF
I_Q	Quiescent Current	$V_{DD}=5.5V$; inputs LOW; floating outputs	--	80	--	μA
V_O	Maximal Voltage Applied to any PIN in High-Impedance State		--	--	$V_{DD}+0.3$	V
V_{IH}	HIGH-Level Input Voltage	Logic Input without Schmitt trigger (Note 1)	$0.7 \times V_{DD}$	--	$V_{DD}+0.3$	V
V_{IL}	LOW-Level Input Voltage	Logic Input without Schmitt trigger (Note 1)	GND-0.3	--	$0.3 \times V_{DD}$	V
V_{OH}	HIGH-Level Output Pulse Voltage	Push-Pull 1X, $V_{DD} = 3.3 V \pm 10\%$, $I_{OH} = 3 mA$	2.70	--	--	V
		Push-Pull 1X, $V_{DD} = 5 V \pm 10\%$, $I_{OH} = 5 mA$	4.16	--	--	V
V_{OL}	LOW-Level Output Pulse Voltage	Push-Pull 1X, $V_{DD} = 3.3 V \pm 10\%$, $I_{OL} = 3 mA$	--	--	0.218	V
		Push-Pull 1X, $V_{DD} = 5 V \pm 10\%$, $I_{OL} = 5 mA$	--	--	0.270	V
I_{OH}	HIGH-Level Output Pulse Current (Note 2)	Push-Pull 1X, $V_{DD} = 3.3 V \pm 10\%$, $V_{OH} = 2.4 V$	5.61	--	--	mA
		Push-Pull 1X, $V_{DD} = 5 V \pm 10\%$, $V_{OH} = 2.4 V$	20.42	--	--	mA
I_{OL}	LOW-Level Output Pulse Current (Note 2)	Push-Pull 1X, $V_{DD} = 3.3 V \pm 10\%$, $V_{OL} = 0.4 V$	5.42	--	--	mA

4-Channel Programmable Voltage Monitor

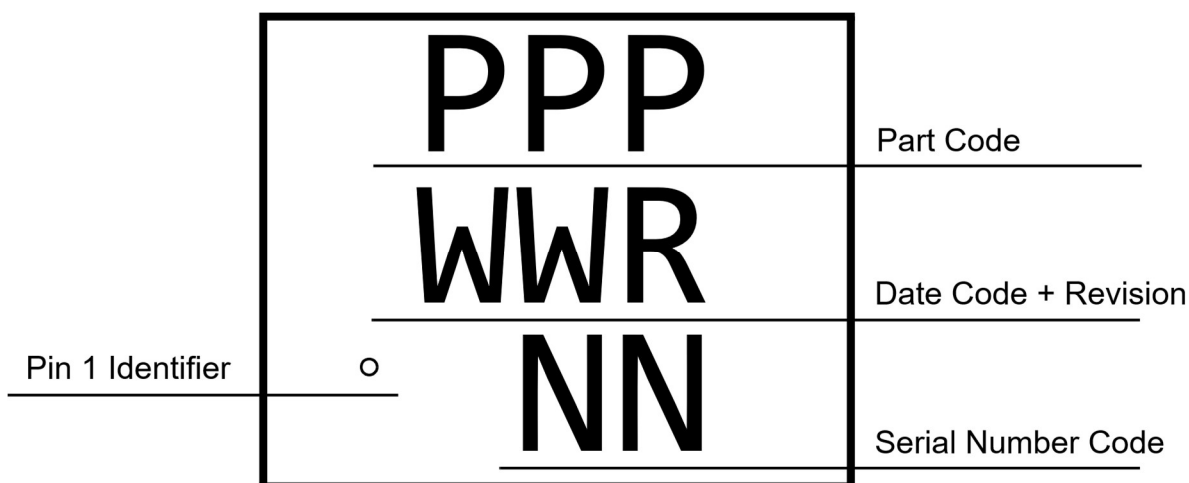
		Push-Pull 1X, $V_{DD} = 5\text{ V} \pm 10\%$, $V_{OL} = 0.4\text{ V}$	7.36	--	--	mA
R_{PULL_DOWN}	Internal Pull-Down Resistance	Pull-down on PINs 2, 3, 5, 6	--	1	--	MΩ
T_{DLY0}	Delay Time	At temperature +25 °C	187.58	190.67	195.54	ms
		At temperature -40 +85 °C (Note 3)	186.4	190.67	207.1	ms
T_{DLY1}	Delay Time	At temperature +25 °C	29	30.5	34	us
		At temperature -40 +85 °C (Note 3)	29	30.5	37	us
T_{DLY2}	Delay Time	At temperature +25 °C	14	15.38	18	us
		At temperature -40 +85 °C (Note 3)	14	15.38	21	us
T_{DLY3}	Delay Time	At temperature +25 °C	29	30.5	34	us
		At temperature -40 +85 °C (Note 3)	29	30.5	37	us
T_{DLY4}	Delay Time	At temperature +25 °C	14	15.38	18	us
		At temperature -40 +85 °C (Note 3)	14	15.38	21	us
T_{DLY5}	Delay Time	At temperature +25 °C	29	30.5	34	us
		At temperature -40 +85 °C (Note 3)	29	30.5	37	us
T_{DLY6}	Delay Time	At temperature +25 °C	14	15.38	18	us
		At temperature -40 +85 °C (Note 3)	14	15.38	21	us
T_{DLY7}	Delay Time	At temperature +25 °C	34	35.4	39	us
		At temperature -40 +85 °C (Note 3)	34	35.4	42	us
V_{ACMP0H}	Analog Comparator Threshold Voltage	Low to High transition, at temperature +25 °C	2614	--	2745	mV
		Low to High transition, at temperature -40 +85 °C (Note 3)	2601	--	2751	mV
		High to Low transition, at temperature +25 °C	2489	--	2614	mV
		High to Low transition, at temperature -40 +85 °C (Note 3)	2475	--	2621	mV
V_{ACMP1H}	Analog Comparator Threshold Voltage	Low to High transition, at temperature +25 °C	3222	--	3404	mV
		Low to High transition, at temperature -40 +85 °C (Note 3)	3206	--	3414	mV
		High to Low transition, at temperature +25 °C	3222	--	3404	mV
		High to Low transition, at temperature -40 +85 °C (Note 3)	3206	--	3414	mV
V_{ACMP2L}	Analog Comparator Threshold Voltage	Low to High transition, at temperature +25 °C	2463	--	2636	mV
		Low to High transition, at temperature -40 +85 °C (Note 3)	2443	--	2647	mV
		High to Low transition, at temperature +25 °C	2463	--	2636	mV
		High to Low transition, at temperature -40 +85 °C (Note 3)	2443	--	2647	mV

4-Channel Programmable Voltage Monitor

V_{ACMP3L}	Analog Comparator Threshold Voltage	Low to High transition, at temperature +25 °C	1707	--	1828	mV
		Low to High transition, at temperature -40 +85 °C (Note 3)	1629	--	1915	mV
		High to Low transition, at temperature +25 °C	1707	--	1828	mV
		High to Low transition, at temperature -40 +85 °C (Note 3)	1629	--	1915	mV
V_{HYST}	Analog Comparator Hysteresis Voltage (Note 3)	ACMP 0 at temperature +25 °C	--	128	--	mV
		ACMP 0 at temperature -40 +85 °C	--	128	--	mV
T_{SU}	Startup Time	From V_{DD} rising past PON_{THR}	--	1	2	ms
PON_{THR}	Power-On Threshold	V_{DD} Level Required to Start Up the Chip	1.6	1.85	2.05	V
$POFF_{THR}$	Power-Off Threshold	V_{DD} Level Required to Switch Off the Chip	0.85	1.25	1.5	V
Note 1 No hysteresis. Note 2 DC or average current through any pin should not exceed value given in Absolute Maximum Conditions. Note 3 Guaranteed by Design.						

4-Channel Programmable Voltage Monitor

Package Top Marking



Datasheet revision	Programming Code Number	Lock Status	Checksum	Part Code	Revision	Date
1.00	002	U	0xFA9B8859	1X8	A	08/07/2026

Memory Lock Options

Option	Status
Registers	Unlocked

The IC security bit is locked/set for code security for production unless otherwise specified. The Programming Code Number is not changed based on the choice of locked vs. unlocked status.

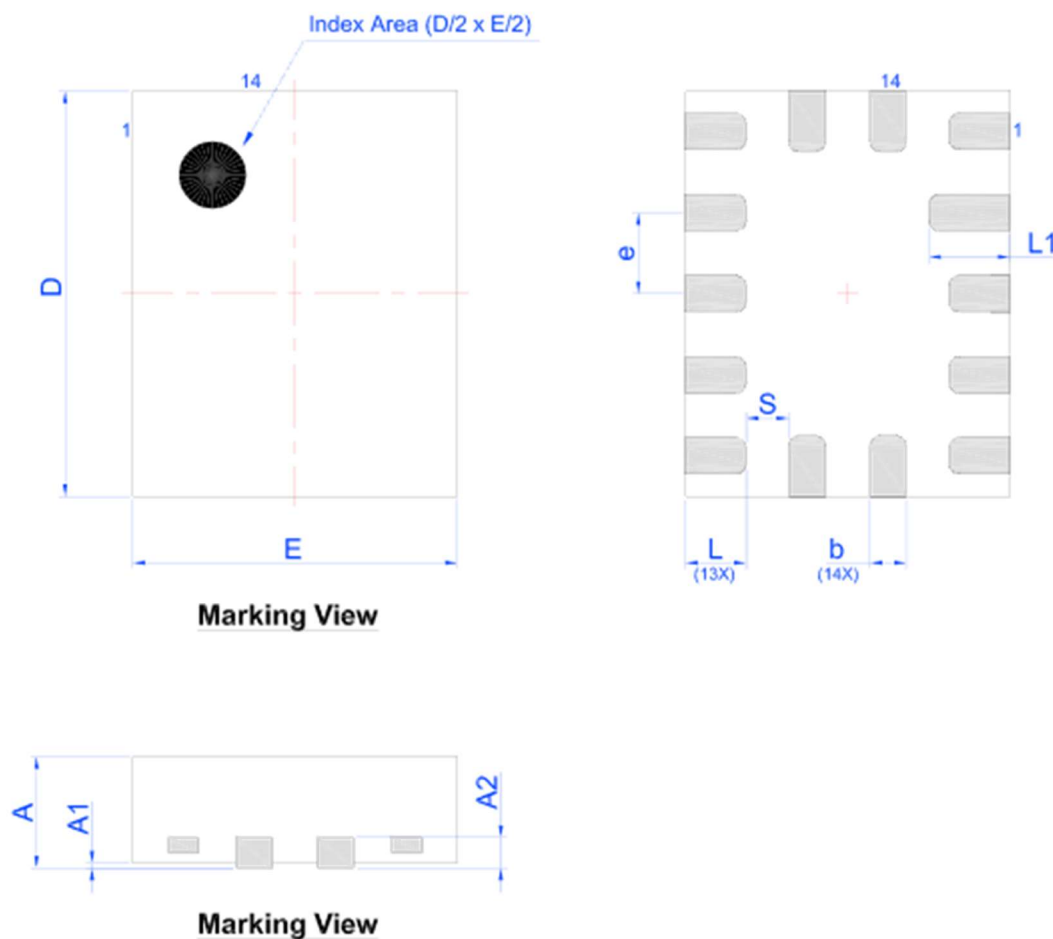
4-Channel Programmable Voltage Monitor

Package Drawing and Dimensions

Package Outlines for STQFN 14L 1.6 mm x 2.0 mm x 0.55 mm 0.4P FC Package

JEDEC MO-220

IC Net Weight: 0.0045 g



Unit: mm

Symbol	Min	Nom.	Max	Symbol	Min	Nom.	Max
A	0.50	0.55	0.60	D	1.95	2.00	2.05
A1	0.005	-	0.050	E	1.55	1.60	1.65
A2	0.10	0.15	0.20	L	0.25	0.30	0.35
b	0.13	0.18	0.23	L1	0.35	0.40	0.45
e	0.40 BSC			S	0.21 REF		

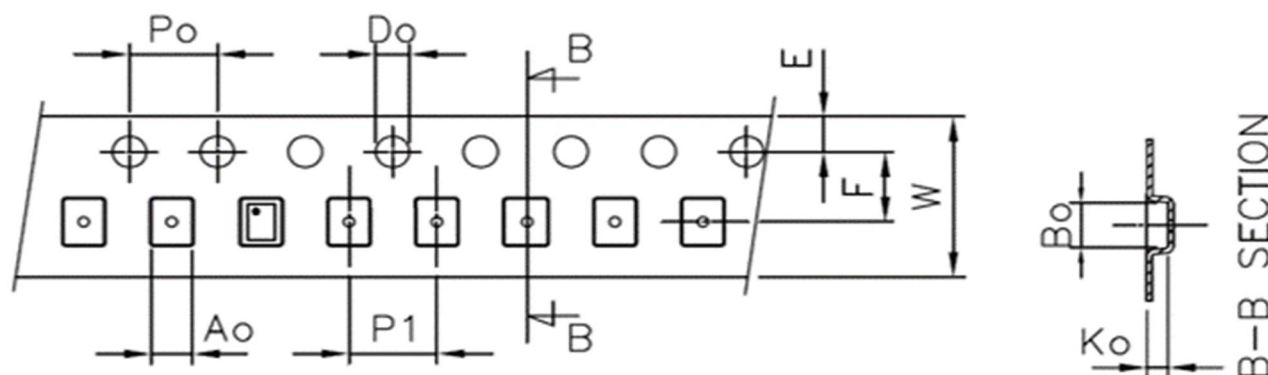
4-Channel Programmable Voltage Monitor

Tape and Reel Specifications

Package Type	# of Pins	Nominal Package Size (mm)	Max Units		Reel & Hub Size (mm)	Leader (min)		Trailer (min)		Tape Width (mm)	Part Pitch (mm)
			per Reel	per Box		Pockets	Length (mm)	Pockets	Length (mm)		
STQFN 14L 1.6 mm x 2 mm 0.4P FC Green	14	1.6x2.0x0.55	3000	3000	178/60	100	400	100	400	8	4

Carrier Tape Drawing and Dimensions

Package Type	Pocket BTM length (mm)	Pocket BTM Width (mm)	Pocket Depth (mm)	Index Hole Pitch (mm)	Pocket Pitch (mm)	Index Hole Diameter (mm)	Index Hole to Tape Edge (mm)	Index Hole to Pocket Center (mm)	Tape Width (mm)
	A0	B0	K0	P0	P1	D0	E	F	W
STQFN 14L 1.6 mm x 2 mm 0.4P FC Green	1.8 ± 0.05	2.2 ± 0.05	0.76	4	4	1.5	1.75	3.5	8

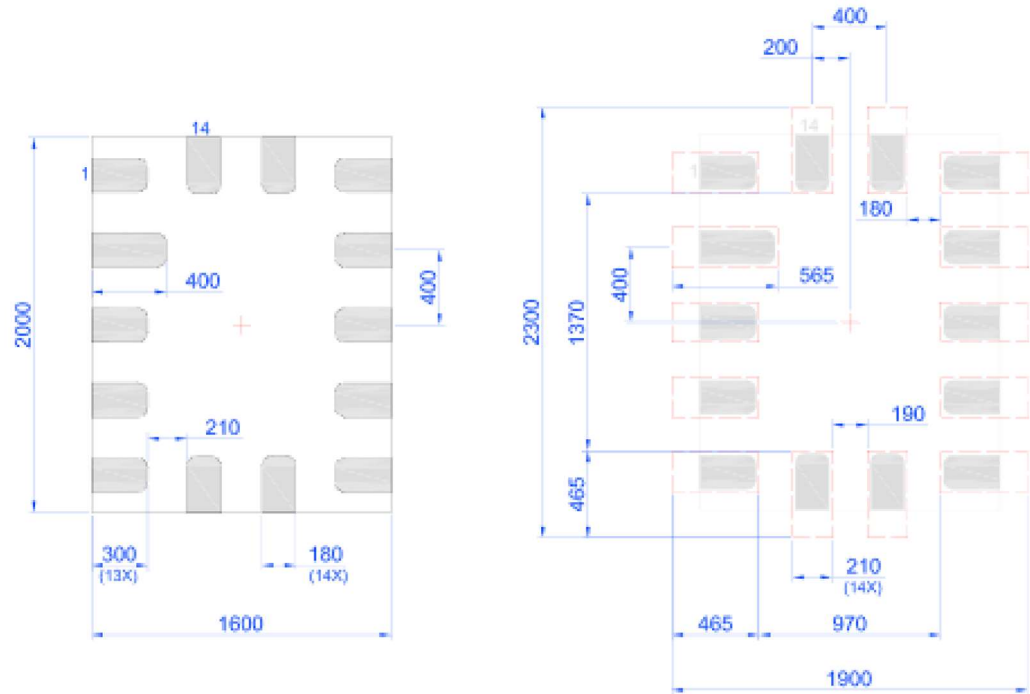


Recommended Reflow Soldering Profile

Please see IPC/JEDEC J-STD-020: latest revision for reflow profile based on package volume of 2.64 mm³ (nominal) for STQFN 14L Package. More information can be found at www.jedec.org.

4-Channel Programmable Voltage Monitor

Recommended Land Pattern



Unit: μm

4-Channel Programmable Voltage Monitor

Datasheet Revision History

Date	Version	Change
07/24/2026	0.10	New Design
07/28/2026	0.11	Updated VDD range
08/06/2026	0.12	Updated Device Revision Table
08/07/2026	1.00	Production Release