



Power Sequencer with LDO

General Description

Silego SLG4AF41551 is a low power and small form device. The SoC is housed in a 2mm x 3mm STQFN package which is optimal for using with small devices.

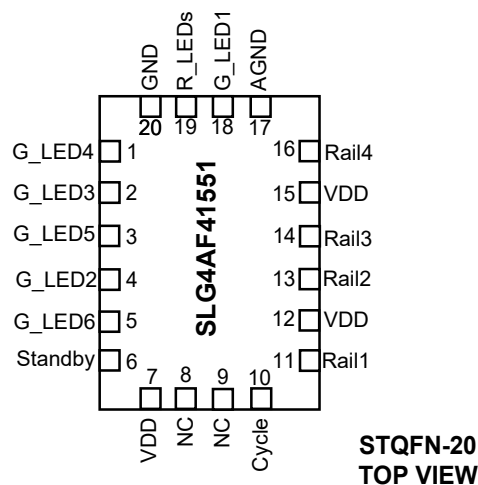
Features

- Low Power Consumption
- Pb-Free / RoHS Compliant
- Halogen-Free
- STQFN-20 Package

Output Summary

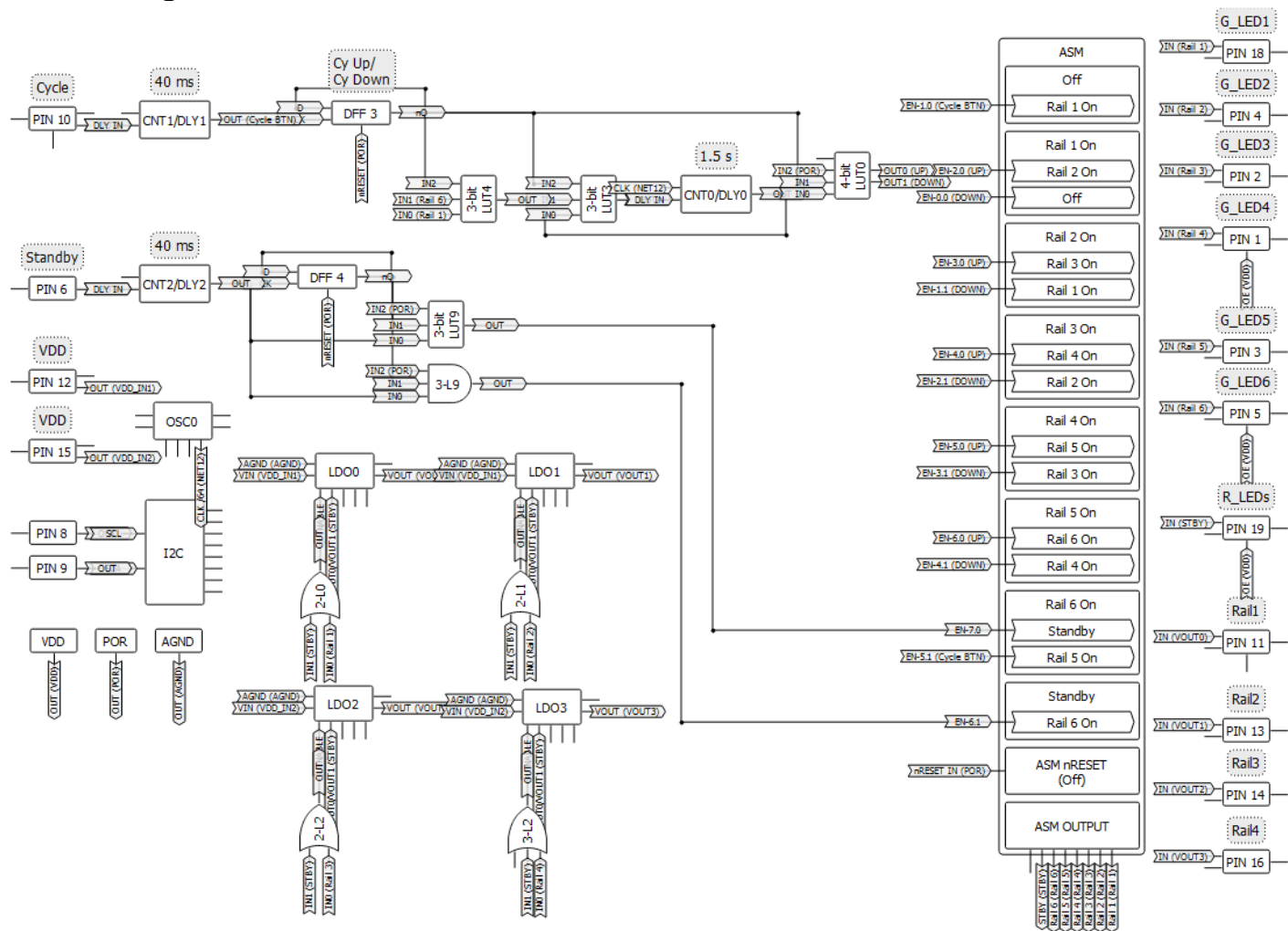
- 7 Outputs — Push Pull 2X

Pin Configuration





Block Diagram





Pin Configuration

Pin #	Pin Name	Type	Pin Description
1	G_LED4	Digital Output	Push Pull 2X
2	G_LED3	Digital Output	Push Pull 2X
3	G_LED5	Digital Output	Push Pull 2X
4	G_LED2	Digital Output	Push Pull 2X
5	G_LED6	Digital Output	Push Pull 2X
6	Standby	Digital Input	Digital Input with Schmitt trigger
7	VDD	PWR	Supply Voltage
8	NC	--	Keep Floating or Connect to GND
9	NC	--	Keep Floating or Connect to GND
10	Cycle	Digital Input	Digital Input with Schmitt trigger
11	Rail1	Analog Input/Output	Analog Input/Output
12	VDD	Analog Input/Output	Analog Input/Output
13	Rail2	Analog Input/Output	Analog Input/Output
14	Rail3	Analog Input/Output	Analog Input/Output
15	VDD	Analog Input/Output	Analog Input/Output
16	Rail4	Analog Input/Output	Analog Input/Output
17	AGND	GND	Analog Ground
18	G_LED1	Digital Output	Push Pull 2X
19	R_LEDs	Digital Output	Push Pull 2X
20	GND	GND	Ground

Ordering Information

Part Number	Package Type
SLG4AF41551V	V=STQFN-20
SLG4AF41551VTR	VTR=STQFN-20 – Tape and Reel (3k units)



Absolute Maximum Conditions

Parameter	Min.	Max.	Unit
V _{HIGH} to GND	-0.3	7	V
Voltage at input pins	-0.3	7	V
Current at input pin	-1.0	1.0	mA
Storage temperature range	-65	125	°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

(@ 25°C, unless otherwise stated)

Symbol	Parameter	Condition/Note	Min.	Typ.	Max.	Unit
V _{DD}	Supply Voltage		4.5	5.0	5.5	V
T _A	Operating Temperature		0	25	45	°C
I _Q	Quiescent Current	Static inputs and floating outputs	--	TBD	--	μA
V _{IH}	HIGH-Level Input Voltage	Logic Input with Schmitt Trigger, at VDD=5.0V	--	V _{IH} + 400 mV	--	V
V _{IL}	LOW-Level Input Voltage	Logic Input with Schmitt Trigger, at VDD=5.0V	--	V _{IL} + 400 mV	--	V
V _{OH}	HIGH-Level Output Voltage	Push Pull, I _{OH} = 5mA, 2X Driver, at VDD=5.0 V	4.32	4.89	--	V
V _{OL}	LOW-Level Output Voltage	Push Pull, I _{OL} = 5mA, 2X Driver, at VDD=5.0 V	--	0.076	0.140	V
I _{OH}	HIGH-Level Output Current	Push Pull, V _{OH} = 2.4 V, 2X Driver, at VDD=5.0 V	41.76	68.08	--	mA
I _{OL}	LOW-Level Output Current	Push Pull, V _{OL} = 0.4 V, 2X Driver, at VDD=5.0 V	13.831	23.16	--	mA
R _{PULL_DOWN}	Internal Pull Down Resistance	Pull down on PINs 6, 10	TBD	TBD	TBD	kΩ
T _{DLY0}	Delay0 Time	At temperature 25°C	--	1.5	--	s
		At temperature 0°C +45°C (note 1)	--	1.5	--	
T _{DLY1}	Delay1 Time	At temperature 25°C	--	40	--	ms
		At temperature 0°C +45°C (note 1)	--	40	--	
T _{DLY3}	Delay3 Time	At temperature 25°C	--	40	--	ms
		At temperature 0°C +45°C (note 1)	--	40	--	
T _{SU}	Start up Time	From VDD rising past PON _{THR}	--	1.3	--	ms

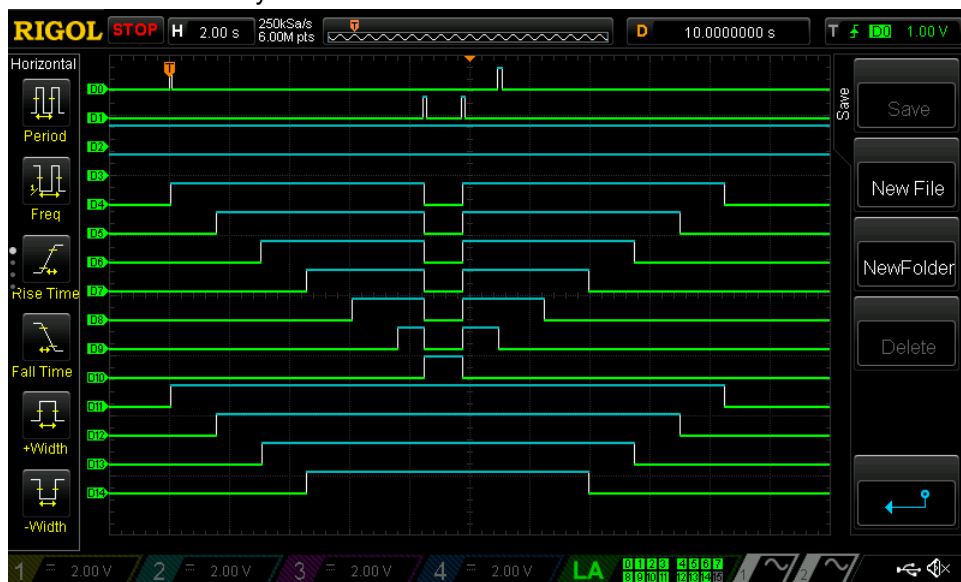
1. Guaranteed by Design.



Functionality Waveforms

- D0 – PIN#10 (Cycle)
- D1 – PIN#6 (Standby)
- D2 – PIN#12 (VDD)
- D3 – PIN#15 (VDD)
- D4 – PIN#18 (G_LED1)
- D5 – PIN#4 (G_LED2)
- D6 – PIN#2 (G_LED3)
- D7 – PIN#1 (G_LED4)
- D8 – PIN#3 (G_LED5)
- D9 – PIN#5 (G_LED6)
- D10 – PIN#19 (R_LEDs)
- D11 – PIN#11 (Rail1)
- D12 – PIN#13 (Rail2)
- D13 – PIN#14 (Rail3)
- D14 – PIN#16 (Rail4)

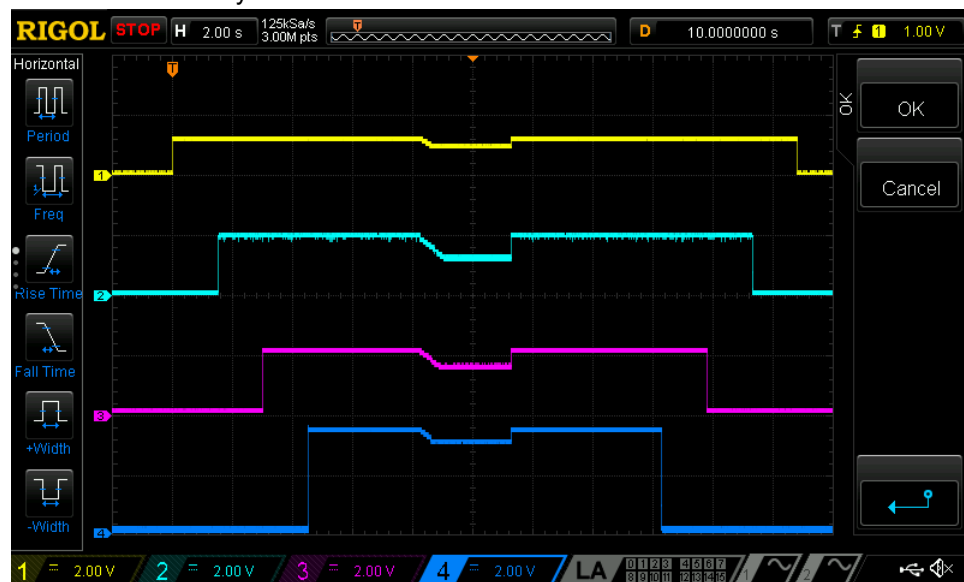
1. Device functionality





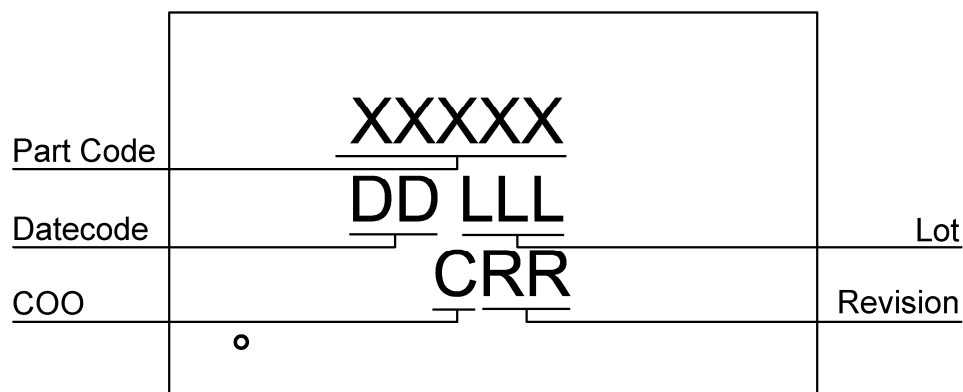
Channel 1 (yellow/top line) – PIN#11 (Rail1)
Channel 2 (light blue/2nd line) – PIN#13 (Rail2)
Channel 3 (magenta/3rd line) – PIN#14 (Rail3)
Channel 4 (blue/bottom line) – PIN#16 (Rail4)

2. Rails functionality





Package Top Marking



XXXXX – Part ID Field: identifies the specific device configuration
DD – Date Code Field: Coded date of manufacture
LLL – Lot Code: Designates Lot #
C – Assembly Site/COO: Specifies Assembly Site/Country of Origin
RR – Revision Code: Device Revision

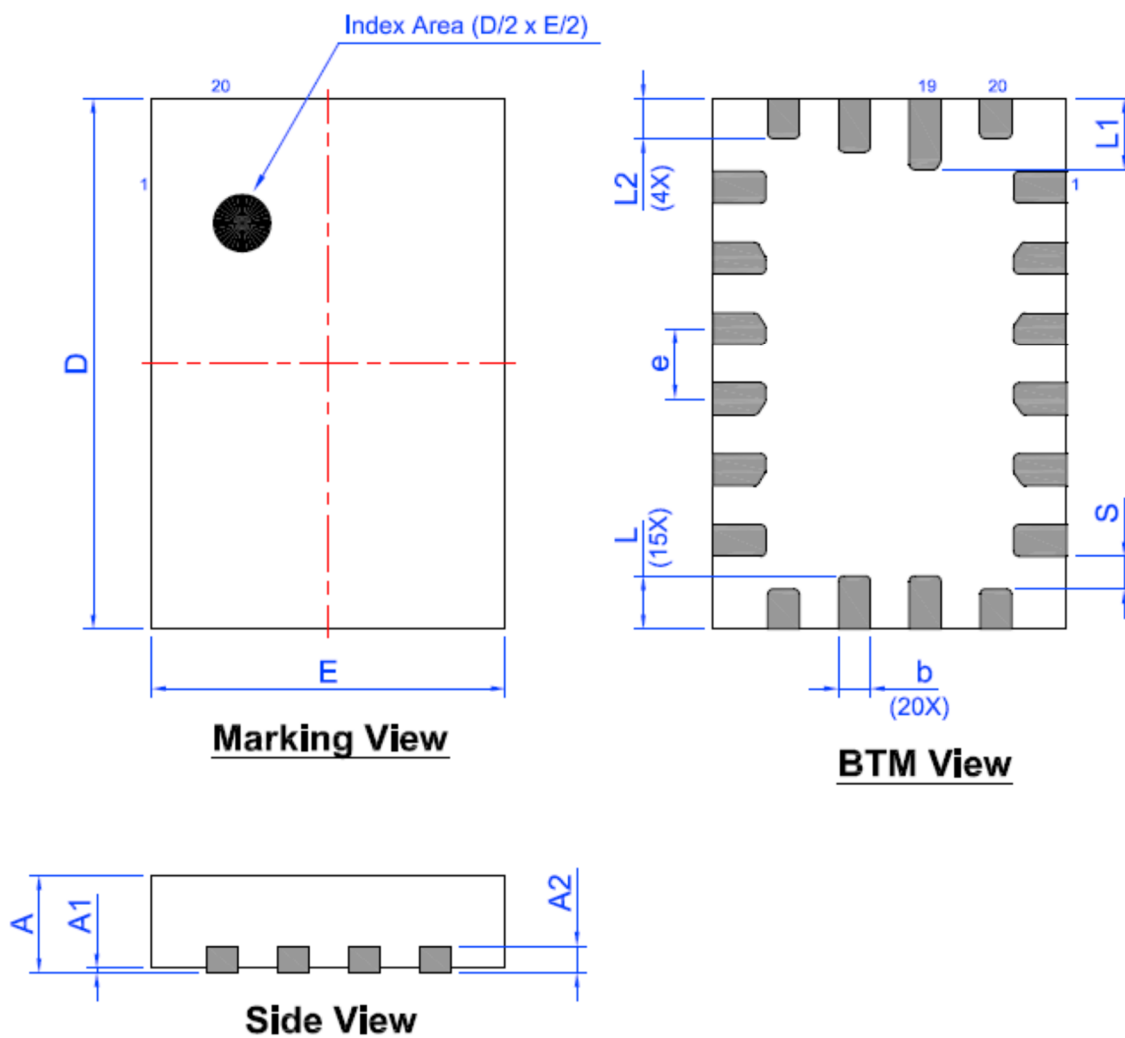
Datasheet Revision	Programming Code Number	Locked Status	Part Code	Revision	Date
0.10	007	U			06/07/2017

The IC security bit is locked/set for code security for production unless otherwise specified. Revision number is not changed for bit locking.



Package Drawing and Dimensions

20 Lead STQFN Package
JEDEC MO-220, Variation WECE



Unit: mm

Symbol	Min	Nom.	Max	Symbol	Min	Nom.	Max
A	0.50	0.55	0.60	D	2.95	3.00	3.05
A1	0.005	-	0.050	E	1.95	2.00	2.05
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			L2	0.175	0.225	0.275
S	0.185 TYP						



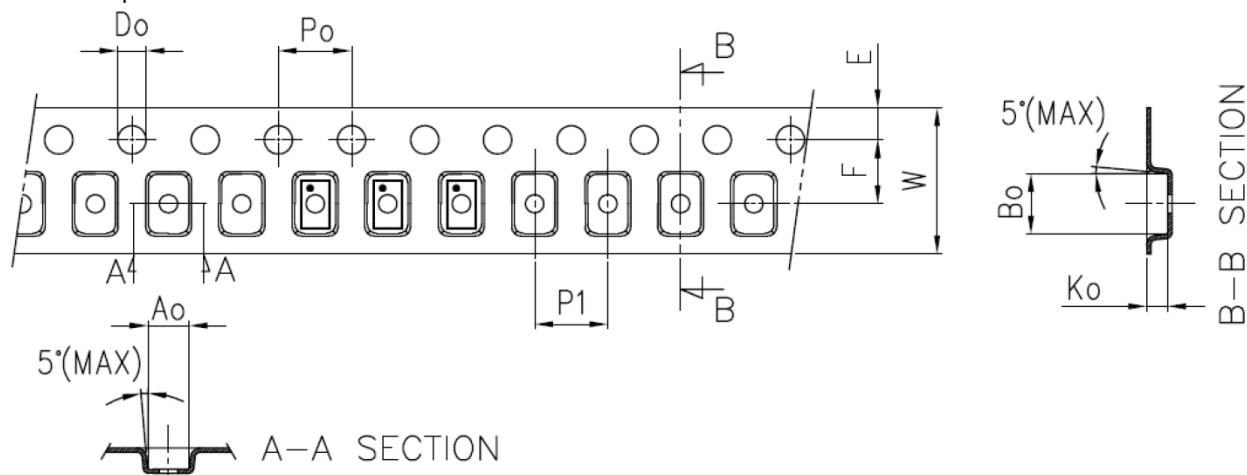
Tape and Reel Specification

Package Type	# of Pins	Nominal Package Size (mm)	Max Units		Reel & Hub Size (mm)	Trailer A		Leader B		Pocket (mm)	
			per reel	per box		Pockets	Length (mm)	Pockets	Length (mm)	Width	Pitch
STQFN 20L 2x3mm 0.4P Green	20	2x3x0.55	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 20L 2x3mm 0.4P Green	2.2	3.15	0.76	4	4	1.5	1.75	3.5	8

Refer to EIA-481 Specifications



Recommended Reflow Soldering Profile

Please see IPC/JEDEC J-STD-020: latest revision for reflow profile based on package volume of 3.3 mm³ (nominal). More information can be found at www.jedec.org.



Datasheet Revision History

Date	Version	Change
06/07/2017	0.10	New design for SLG46580 chip



SILEGO

SLG4AF41551

Power Sequencer with LDO

Silego Website & Support

Silego Technology Website

Silego Technology provides online support via our website at <http://www.silego.com/>. This website is used as a means to make files and information easily available to customers.

For more information regarding Silego Green products, please visit our website.

Our Green product lines feature:

GreenPAK1 / GreenPAK2 / GreenPAK3/ GreenPAK 4 / GreenPAK 5: Programmable Mixed Signal Matrix products
GreenFET1 / GreenFET3: MOSFET Drivers and ultra-small, low RDSon Load Switches
GreenCLK1 / GreenCLK2 / GreenCLK3: Crystal replacement technology

Products are also available for purchase directly from Silego at the Silego Online Store at <http://www.silego.com/buy/>.

Silego Technical Support

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