SLG7NT4180

GreenPAK 2™

Logic Gates

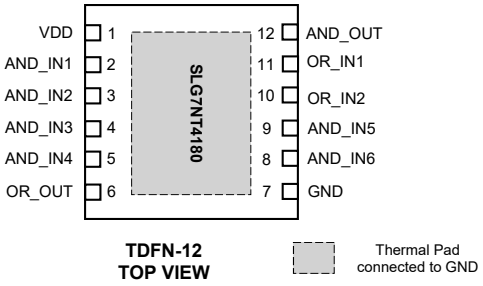
General Description

Renesas GreenPAK 2 SLG7NT4180 is a low power and small form device. The SoC is housed in a 2.5mm x 2.5mm TDFN package which is optimal for using with small devices.

Features

- Low Power Consumption
- 3.3V Supply Voltage
- RoHS Compliant / Halogen-Free
- Pb-Free TDFN-12 Package

Pin Configuration

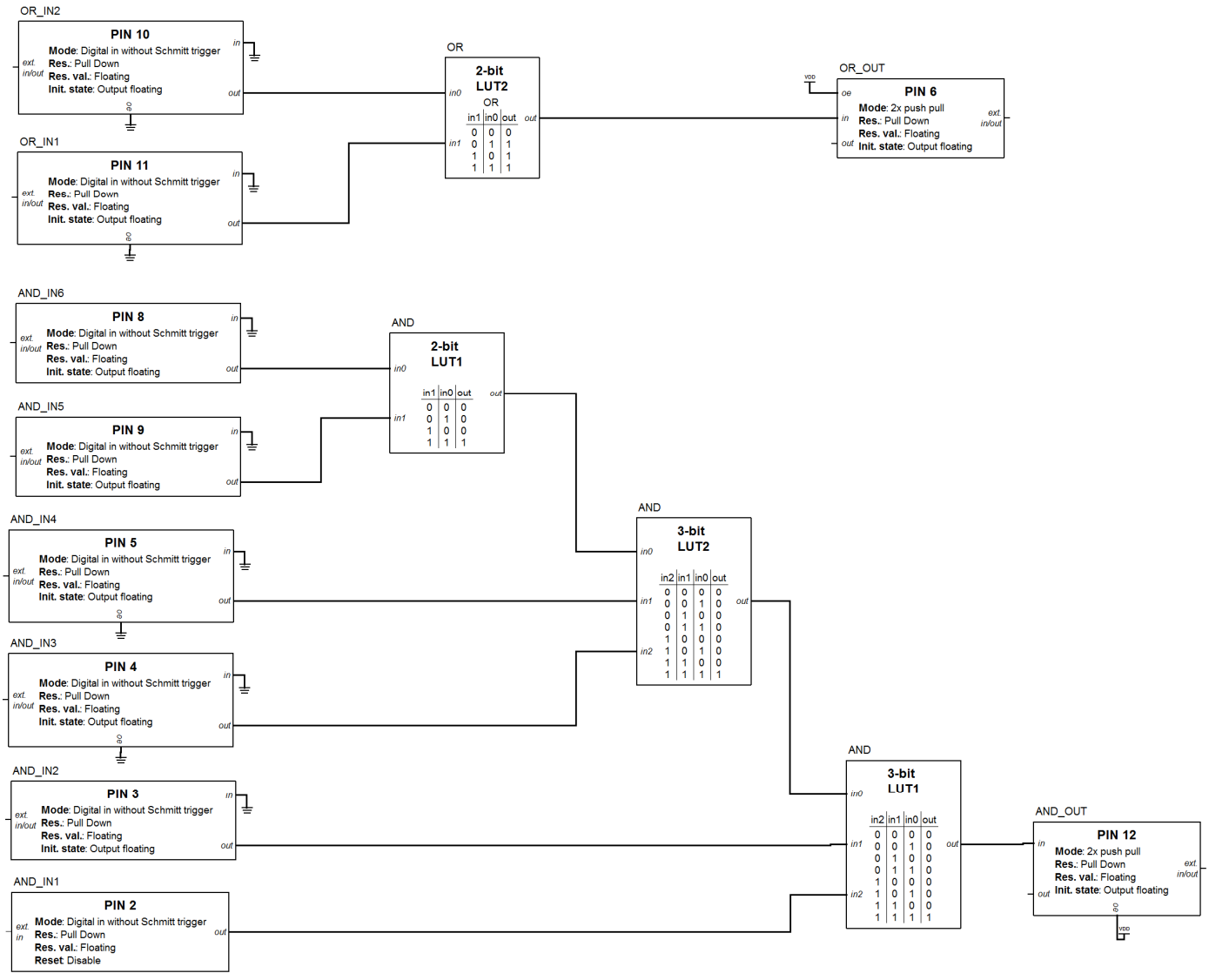


TDFN-12
TOP VIEW

Output Summary

- 2 Outputs - Push Pull

Block Diagram



Pin Configuration

Pin #	Pin Name	Type	Pin Description
1	VDD	PWR	Supply Voltage
2	AND_IN1	Input	Digital Input
3	AND_IN2	Input	Digital Input
4	AND_IN3	Input	Digital Input
5	AND_IN4	Input	Digital Input
6	OR_OUT	Output	Push Pull
7	GND	GND	Ground
8	AND_IN6	Input	Digital Input
9	AND_IN5	Input	Digital Input
10	OR_IN0	Input	Digital Input
11	OR_IN1	Input	Digital Input
12	AND_OUT	Output	Push Pull
Exposed Bottom Pad	Exposed Bottom Pad	GND	Ground

Ordering Information

Part Number	Package Type
SLG7NT4180V	V = TDFN-12
SLG7NT4180VTR	VTR = TDFN-12 - 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	150	°C
Junction temperature	--	150	°C

Electrical Characteristics

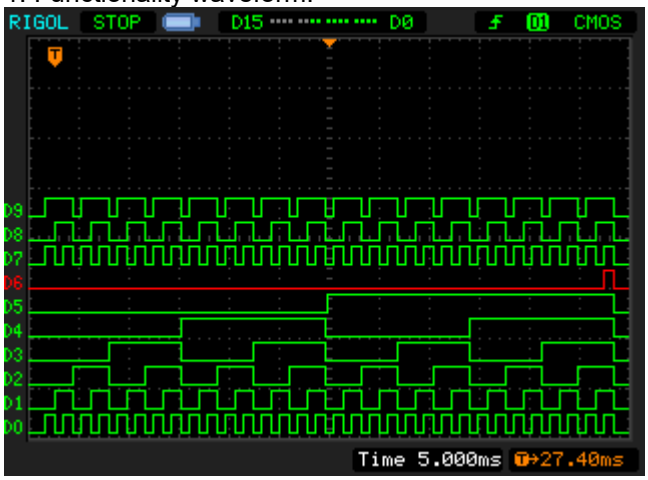
(@ 25°C, unless otherwise stated)

Symbol	Parameter	Condition/Note	Min.	Typ.	Max.	Unit
V_{DD}	Supply Voltage		3.0	3.3	3.6	V
I_Q	Quiescent Current	Static inputs and outputs	--	1	--	µA
T_A	Operating Temperature		-40	25	85	°C
I_L	Input Leakage Current	Leakage Current Inputs or outputs in High impedance state	-100	--	100	nA
V_{IH}	HIGH-Level Input Voltage	Logic Input	1.8	--	--	V
V_{IL}	LOW-Level Input Voltage	Logic Input	--	--	1.10	V
V_{OH}	HIGH-Level Output Voltage	Push-Pull, I_{OH} = 3mA	2.6	--	--	
V_{OL}	LOW-Level Output Voltage	Push-Pull, I_{OL} = 3mA	--	--	0.32	V
V_O	Maximal Voltage Applied to any PIN in High-Impedance State		--	--	VDD	V
I_{OL}	LOW-Level Output Current	Push-Pull, VOL = 0.4V, 1X Drive	3.6	--	--	mA
T_{SU}	Start up Time	After VDD reaches 1.6V level	--	7	--	ms

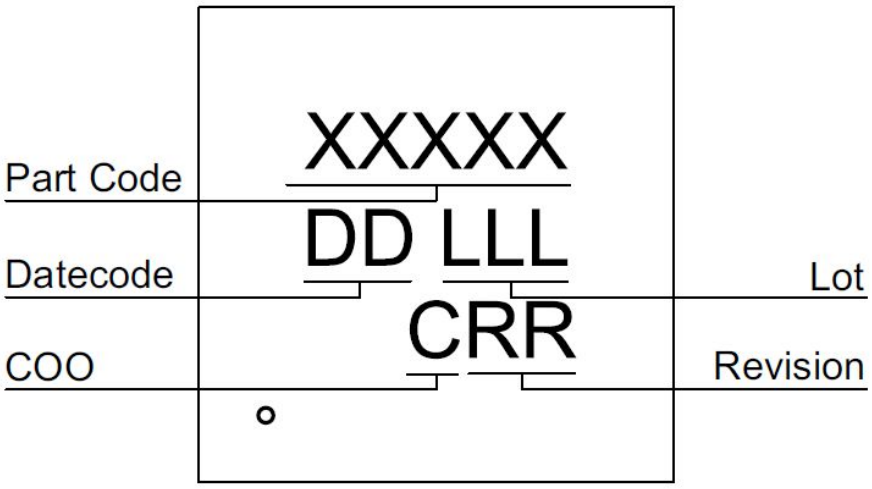
SLG7NT4180 Functionality Waveform

D0 – PIN2 (AND_IN1)
D1 – PIN3 (AND_IN2)
D2 – PIN4 (AND_IN3)
D3 – PIN5 (AND_IN4)
D4 – PIN9 (AND_IN5)
D5 – PIN8 (AND_IN6)
D6 – PIN12 (AND_OUT)
D7 – PIN10 (OR_IN2)
D8 – PIN11 (OR_IN1)
D9 – PIN6 (OR_OUT)

1. Functionality waveform.



Package Top Marking

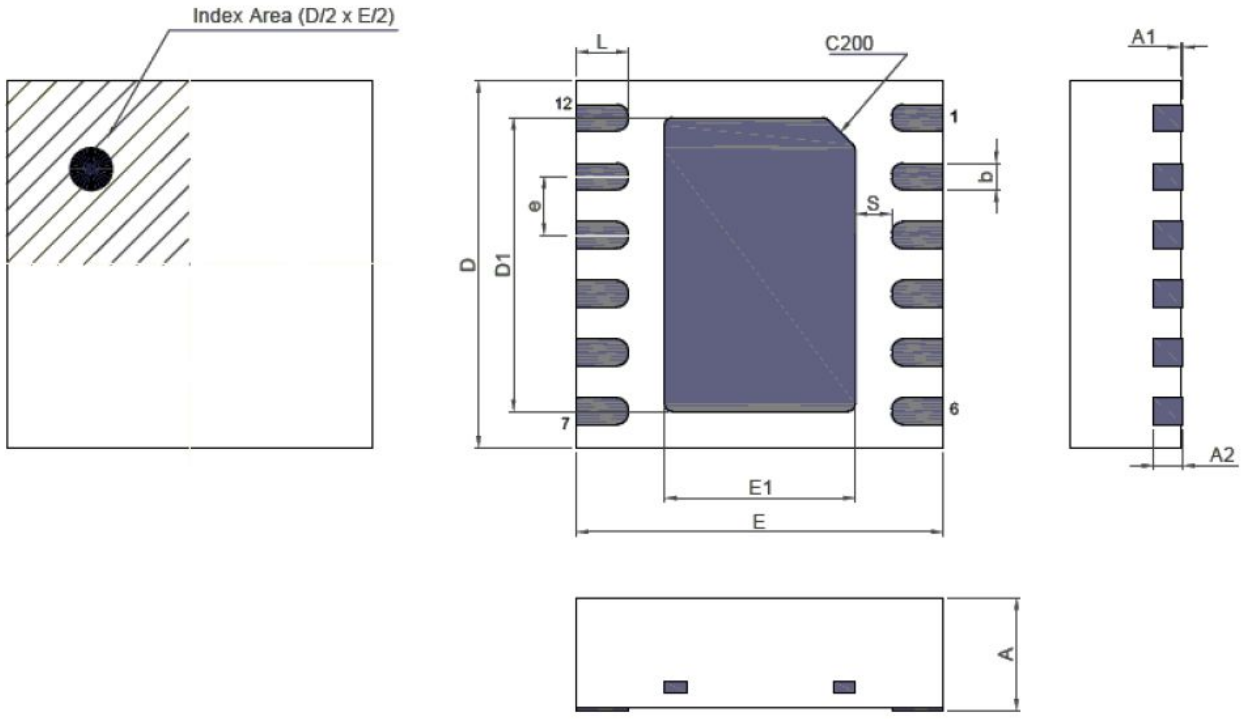


XXXXX – Part ID Field: identifies the specific device configuration
DD – Date Code Field: Coded date of manufacture
LLL – Lot Code: Designates Lot #
C – COO: Specifies Country of Origin
RR – Revision Code: Device Revision

Datasheet Revision	Programming Code Number	Part Code	Revision	Date
1.01	02	4180V	AA	02/25/2022

Package Drawing and Dimensions

12 Lead TDFN Package
JEDEC MO-252, Variation 2525E



Unit: mm

Symbol	Min	Nom.	Max	Symbol	Min	Nom.	Max
A	0.70	0.75	0.80	D1	1.95	2.00	2.05
A1	0.005	-	0.060	E1	1.25	1.30	1.35
A2	0.15	0.20	0.25	e	0.40 BSC		
b	0.13	0.18	0.23	L	0.30	0.35	0.40
D	2.45	2.50	2.55	S	0.18	-	-
E	2.45	2.50	2.55				

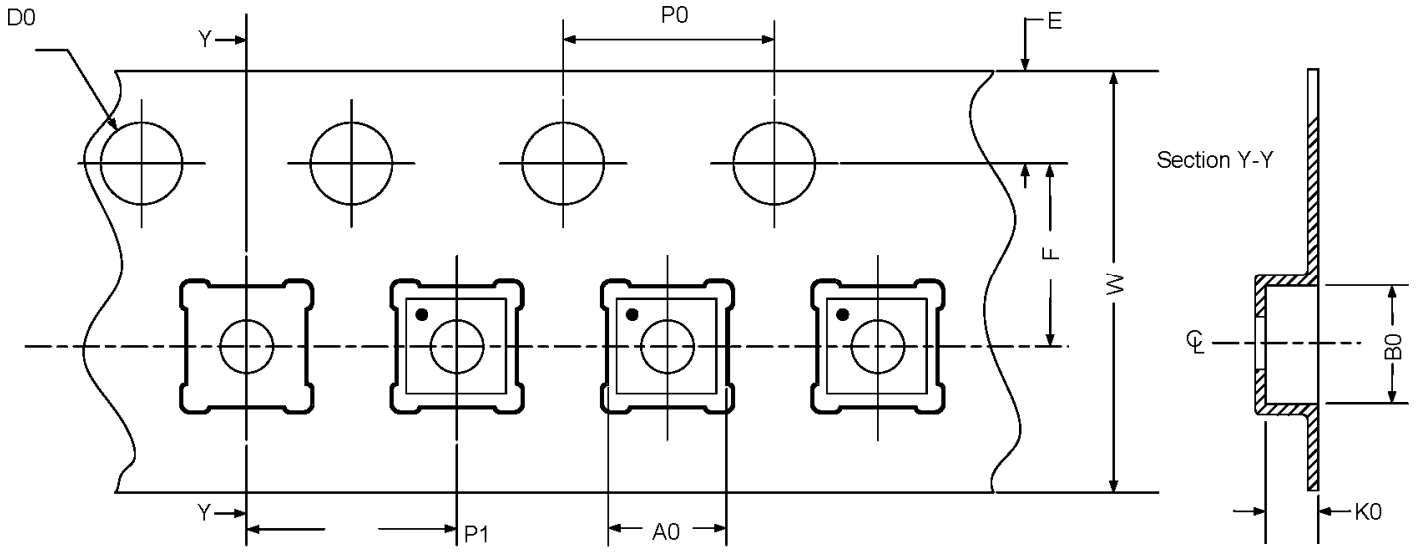
Tape and Reel Specification

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
TDFN 12L 2.5x2.5mm 0.4P Green	12	2.5x2.5x0.75	3000	3000	178/60	42	168	42	168	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
TDFN 12L 2.5x2.5mm 0.4P Green	2.75	2.75	1.05	4	4	1.55	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 4.6875 mm^3 (nominal). More information can be found at www.jedec.org.

Datasheet Revision History

Date	Version	Change
04/15/2013	0.10	New design
04/16/2013	0.11	OR Gate is added
05/06/2013	0.12	Updated Device Revision Table
06/05/2013	1.0	Production release
02/25/2022	1.01	Updated Company name and logo

Silego Website & Support

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