



General Description

Silego 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



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)

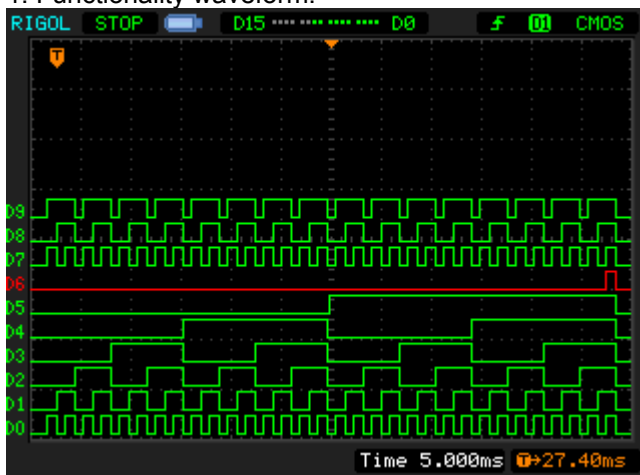
| Symbol | Parameter | Condition/Note | Min. | Typ. | Max. | Unit |
|-----------------|--|---|------|------|------|------|
| V _{DD} | Supply Voltage | | 3.0 | 3.3 | 3.6 | V |
| I _Q | Quiescent Current | Static inputs and outputs | -- | 1 | -- | μA |
| T _A | Operating Temperature | | -40 | 25 | 85 | °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, V _{OL} = 0.4V, 1X Drive | 3.6 | -- | -- | mA |
| T _{SU} | Start up Time | After VDD reaches 1.6V level | -- | 7 | -- | ms |



SLG7NT4180 Functionality Waveform

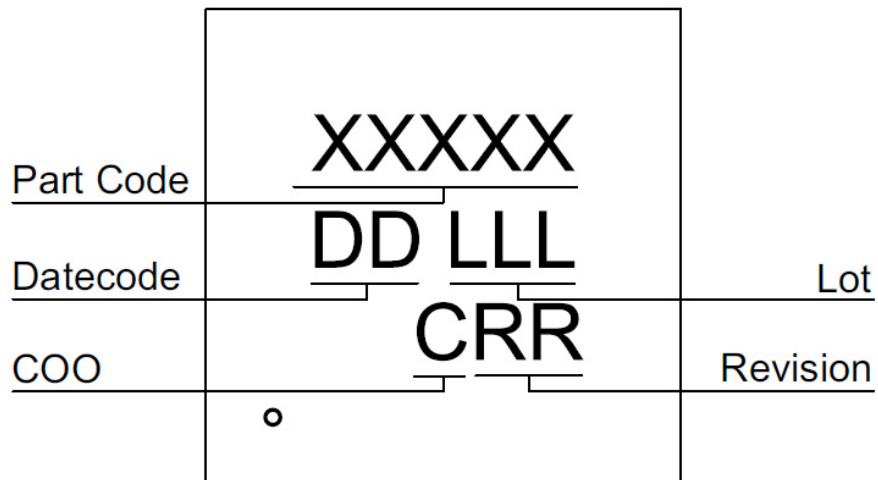
D0 – PIN2 (AND_IN1)
D1 – PIN3 (AND_IN2)
D2 – PIN4 (AND_IN3)
D3 – PIN5 (AND_IN4)
D4 – PIN9 (AND_IN5)
D5 – PIN8 (AND_IN6)
D6 – PIN12 (AND_OUT)
D7 – PIN10 (OR_IN2)
D8 – PIN11 (OR_IN1)
D9 – PIN6 (OR_OUT)

1. Functionality waveform.





Package Top Marking



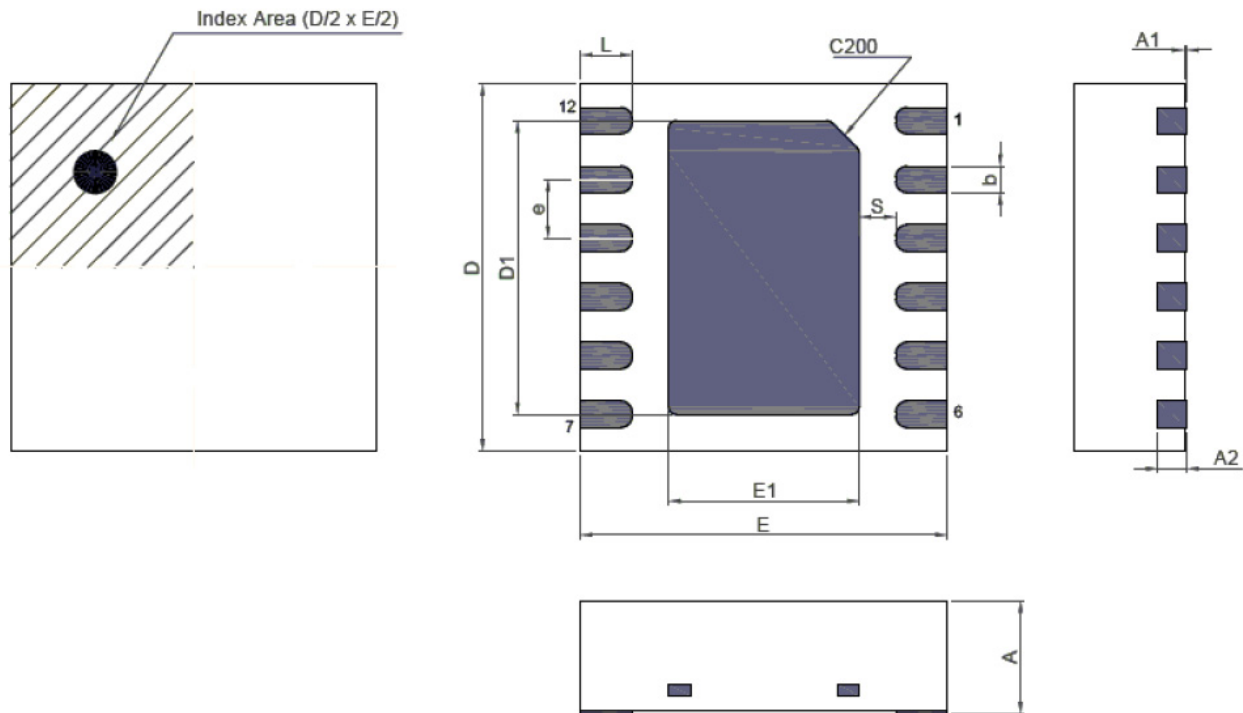
- XXXXXX – Part ID Field: identifies the specific device configuration
- DD – Date Code Field: Coded date of manufacture
- LLL – Lot Code: Designates Lot #
- C – COO: Specifies Country of Origin
- RR – Revision Code: Device Revision

| Datasheet Revision | Programming Code Number | Part Code | Revision | Date |
|--------------------|-------------------------|-----------|----------|------------|
| 1.0 | 02 | 4180V | AA | 06/05/2013 |



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 | | | | |



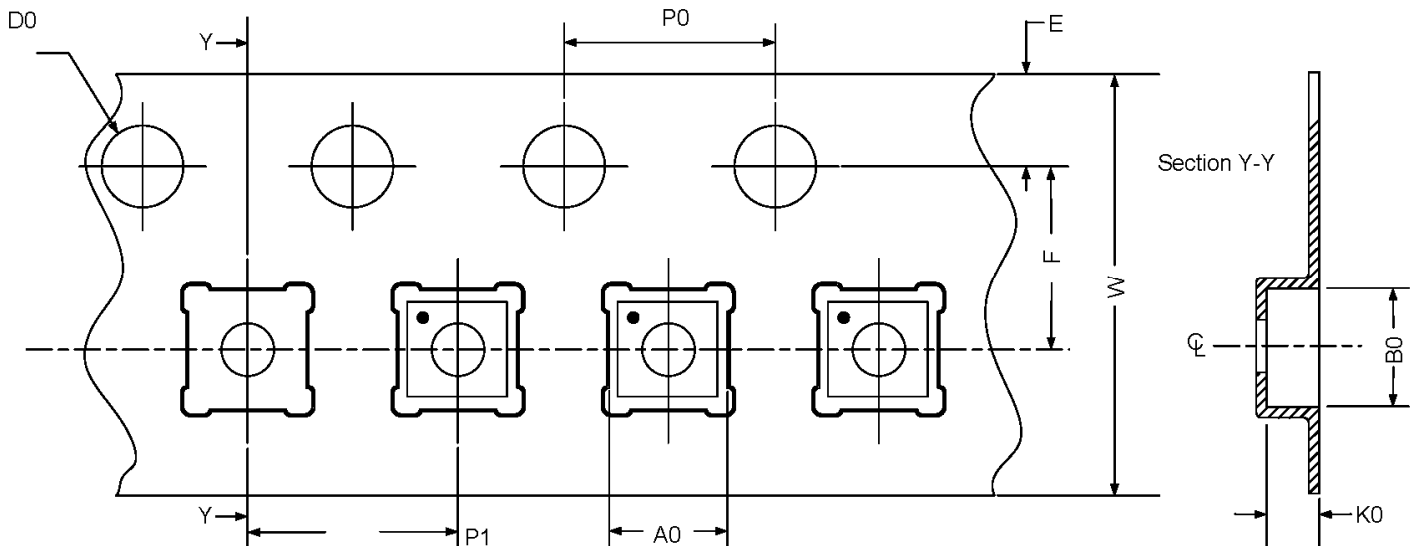
Tape and Reel Specification

| 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 mm³ (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 |



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:

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<http://greenpak2.silego.com/>
<http://greenfet.silego.com/>
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Products are also available for purchase directly from Silego at the Silego Online Store at <http://store.silego.com/>.

Silego Technical Support

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For specific GreenPAK design or applications questions and support please send email requests to GreenPAK@silego.com

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