SILEGO

SLG7NT4131

GreenPAK™

PCIE RTD3

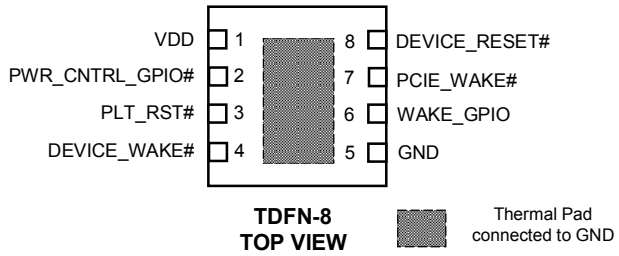
General Description

Silego GreenPAK SLG7NT4131 is a low power and small form device. The SoC is housed in a 2mm x 2mm TDFN package which is optimal for using with small devices.

Features

- Low Power Consumption
- 3.3V Supply
- Pb-Free / RoHS Compliant
- Halogen-Free
- TDFN-8 Package

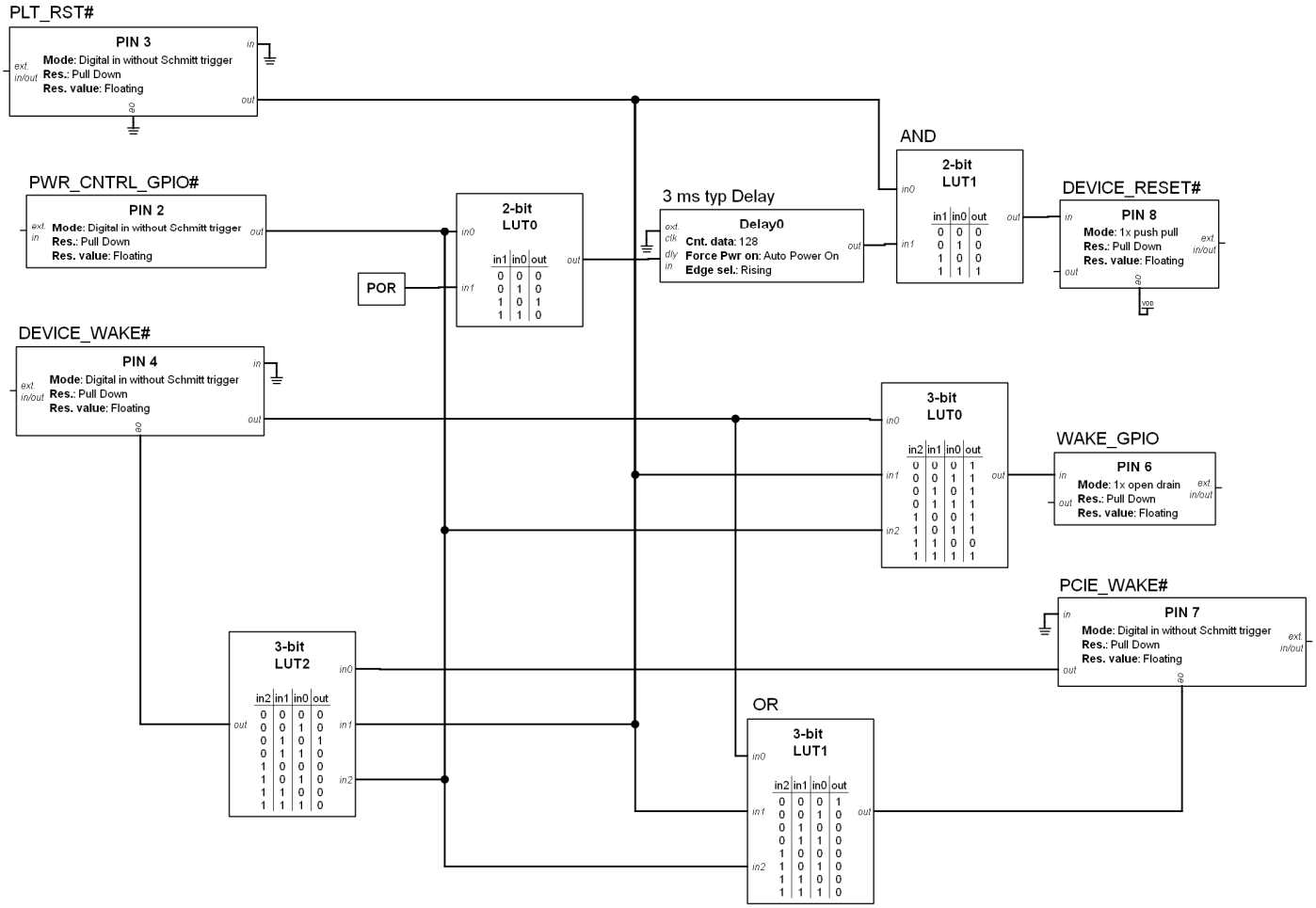
Pin Configuration



Output Summary

- 1 Output – Open Drain
- 1 Output – Push-Pull
- 1 Output – 3-State

Block Diagram



Pin Configuration

Pin #	Pin Name	Type	Pin Description
1	VDD	Power	3.3V Supply Voltage
2	PWR_CNTRL_GPIO#	Input	Digital Input
3	PLT_RST#	Input	Digital Input
4	DEVICE_WAKE#	Input/Output	3-State
5	GND	GND	Ground
6	WAKE_GPIO	Output	Open Drain
7	PCIE_WAKE#	Input/Output	3-State
8	DEVICE_RESET#	Output	Push-Pull
Exposed Bottom Pad	GND	GND	Ground

Ordering Options & Configuration

Part Number	Package Type
SLG7NT4131V	V = TDFN-8
SLG7NT4131VTR	VTR = TDFN-8 – Tape and Reel (3k units)

Absolute Maximum Ratings

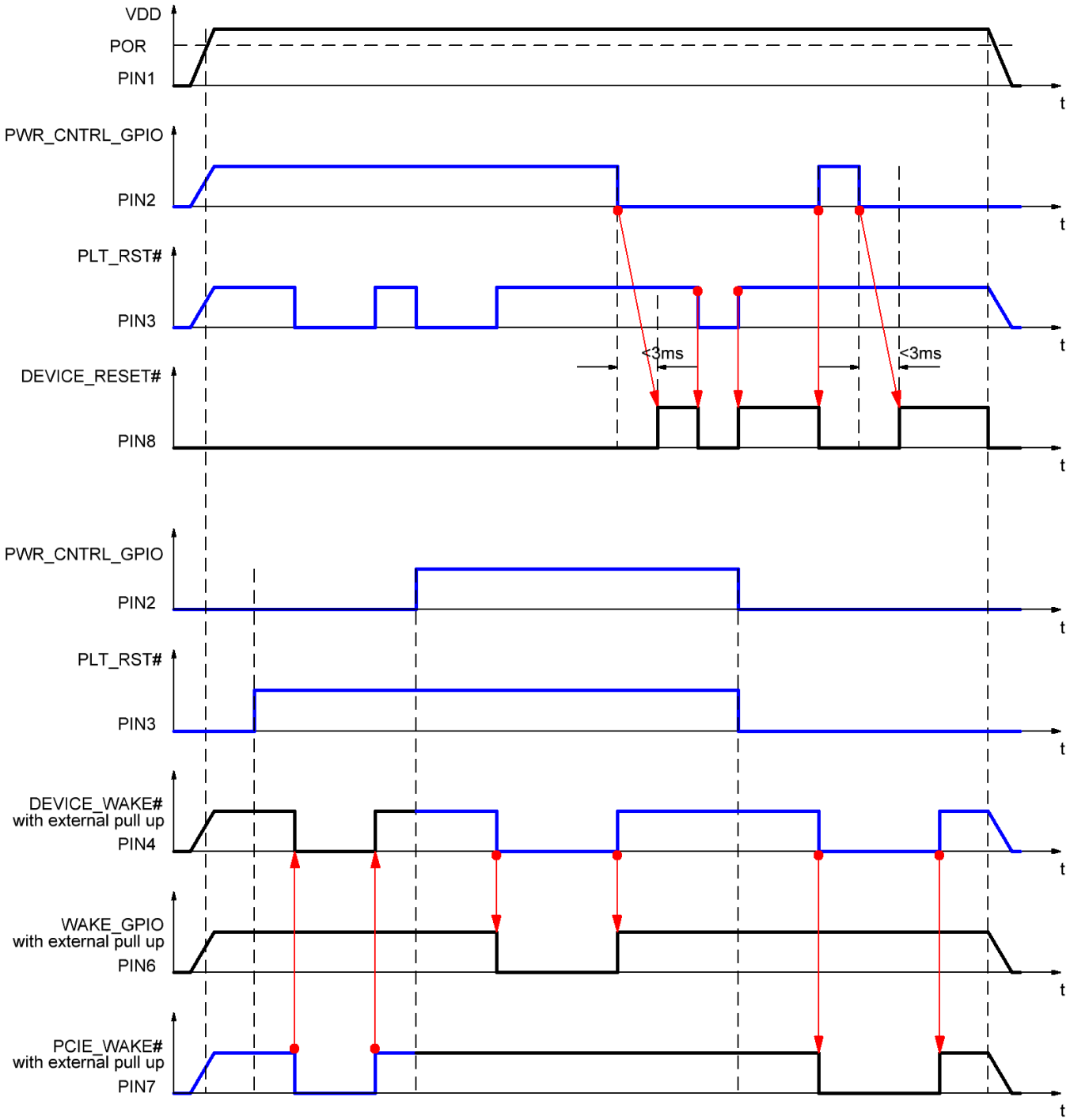
Parameter	Min.	Max.	Unit
V_{DD} to GND	-0.3	4.6	V
Voltage at input pins	-0.3	4.6	V
Current at input pin	-1.0	1.0	mA
Storage temperature range	-65	150	°C
Junction temperature	--	150	°C

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	--	0.5	--	µA
T_A	Operating Temperature		-40	25	85	°C
V_{IH}	HIGH-Level Input Voltage	Logic Input	1.7	--	--	V
V_{IL}	LOW-Level Input Voltage	Logic Input	--	--	0.95	V
I_{IH}	HIGH-Level Input Leakage Current	Logic Input Pins; V_{IN}=3.3V	-100	--	100	nA
I_{IL}	LOW-Level Input Leakage Current	Logic Input Pins; V_{IN}=0V	-100	--	100	nA
T_{DLY0}	Delay0 Time		2.1	3	3.9	ms
V_{OH}	HIGH-Level Output Voltage	Push Pull/3-State OE=1 Output Logic High Output Level, I_{OH}=8mA	2.4	--	--	V
V_{OL}	Output Voltage Low	Push Pull/3-State OE=1 Output Logic Low Output Level, I_{OL}=8mA	--	--	0.4	V
		Open Drain, I_{OL} = 20mA	--	--	0.4	
V_O	Maximal Voltage Applied to any PIN in High-Impedance State		--	--	VDD	V
I_{OH}	HIGH-Level Output Current	Push Pull/3-State OE=1 Output Current, V_{OH}=2.4V	--	--	8	mA
I_{OL}	LOW-Level Output Current	Push Pull/3-State OE=1 Output Current, V_{OL}=0.4V	8	--	--	mA
		Open Drain, V_{OL} = 0.4V	20	--	--	
T_{StUp}	Start Up Time	After VDD reaches 1.4V level	--	7	--	ms

Timing diagram



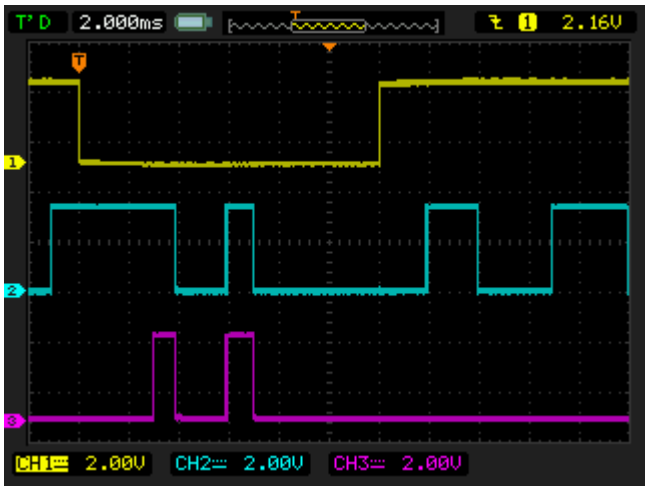
SLG7NT4131 Functionality Waveform

Channel 1 (yellow/top line) – PIN2 (PWR_CNTRL_GPIO#)

Channel 2 (blue/2nd line) – PIN3 (PLT_RST#)

Channel 3 (magenta / bottom line) – PIN8 (DEVICE_RESET#)

1. DEVICE_RESET# operation



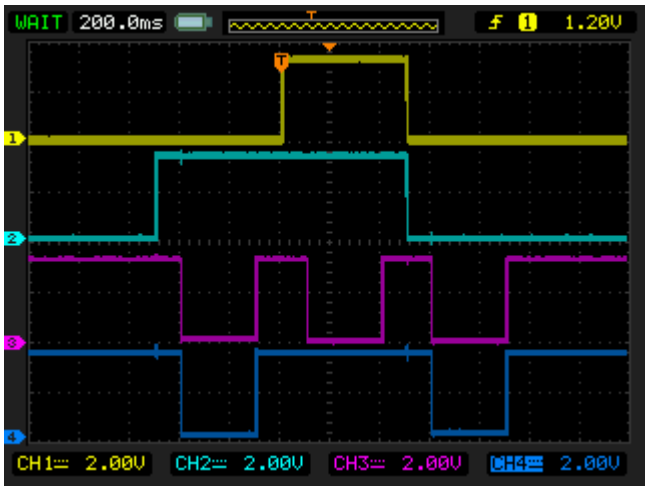
Channel 1 (yellow/top line) – PIN2 (PWR_CNTRL_GPIO#)

Channel 2 (light blue /2nd line) – PIN3 (PLT_RST#)

Channel 3 (magenta/3nd line) – PIN4 (DEVICE_WAKE#) with external 10kΩ pull up resistors

Channel 3 (blue/bottom line) – PIN3 (PCIE_WAKE#) with external 10kΩ pull up resistors

2. Bi-Directional function



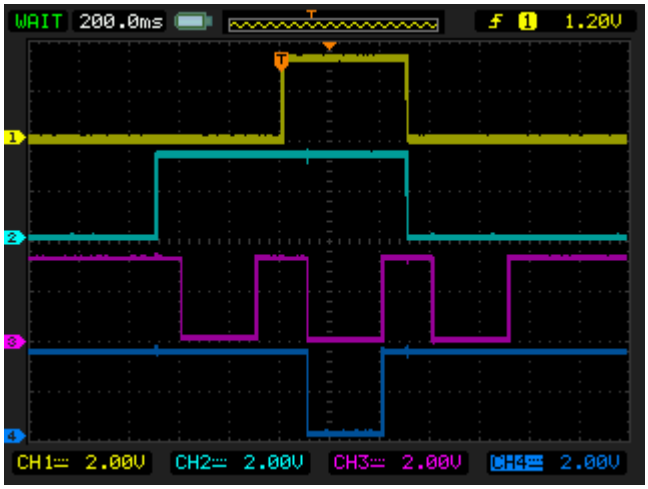
Channel 1 (yellow/top line) – PIN2 (PWR_CNTRL_GPIO#)

Channel 2 (light blue /2nd line) – PIN3 (PLT_RST#)

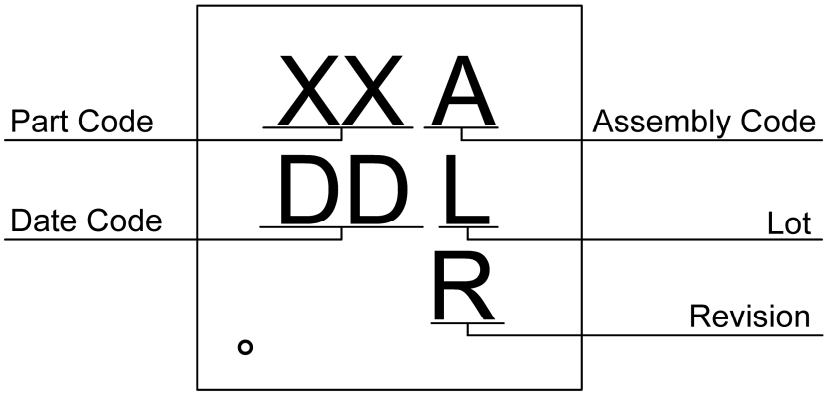
Channel 3 (magenta/3nd line) – PIN4 (DEVICE_WAKE#) with external 10kΩ pull up resistors

Channel 3 (blue/bottom line) – PIN9 (WAKE_GPIO) with external 10kΩ pull up resistors

3. MUX function



Package Top Marking



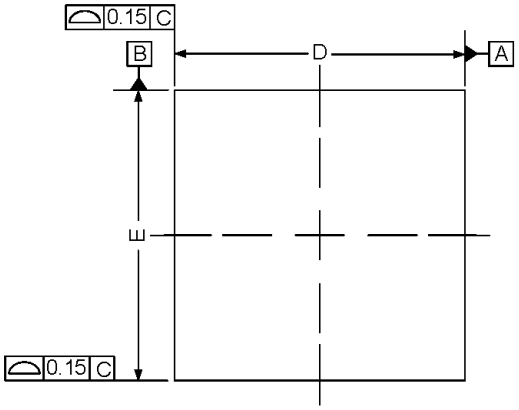
XX – Part Code Field: identifies the specific device configuration
A – Assembly Code Field: Assembly Location of the device.
DD – Date Code Field: Coded date of manufacture
L – Lot Code: Designates Lot #
R – Revision Code: Device Revision

Datasheet Revision	Programming Code Number	Part Code	Revision	Date
0.20	03			11/26/2012

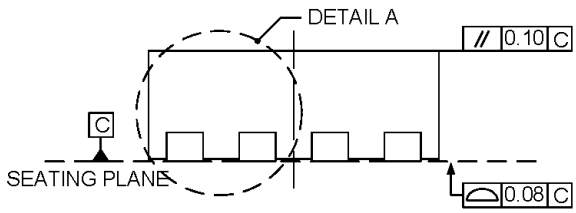
Package Drawing and Dimensions

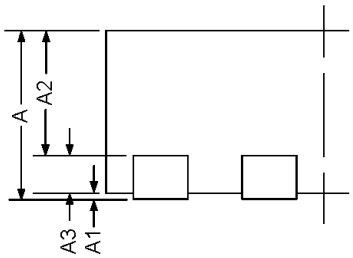
TDFN-8 Package

JEDEC MO-229, Variation WCCD

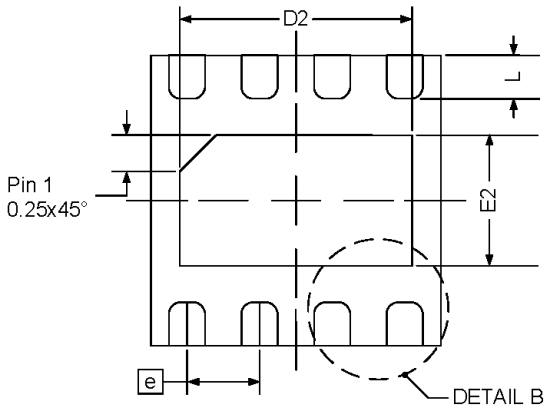


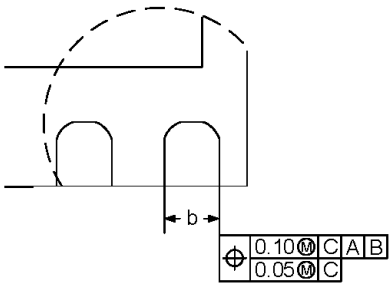
Symbol	Min (mm)	NOM (mm)	Max (mm)
A	0.70	0.75	0.80
A1	0.00	--	0.05
A2	--	0.55	--
A3	--	0.20	--
b	0.20	0.25	0.30
D	1.90	2.00	2.10
D2	1.50	1.60	1.70
E	1.90	2.00	2.10
E2	0.80	0.90	1.00
e	0.50 BSC		
L	0.20	0.30	0.40





DETAIL A





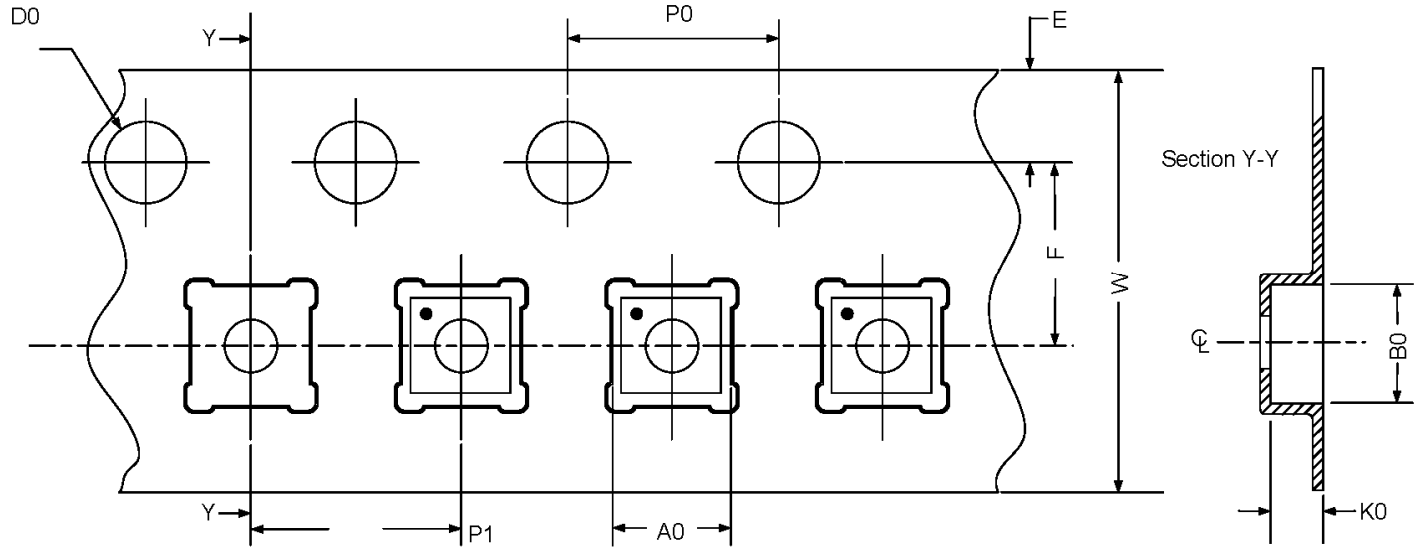
DETAIL B

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 8L 2x2mm Green	8	2x2x0.75	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
TDFN 8L 2x2mm Green	2.3	2.3	1.05	4	4	1.55	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 3.00 mm^3 (nominal).
More information can be found at www.jedec.org.

Datasheet Revision History

Date	Version	Change
11/08/2012	0.1	New design
11/22/2012	0.11	Changed input PINs type to Digital Input
11/26/2012	0.20	Changed DEVICE_WAKE# and PCIE_WAKE# functionality to bi-directional

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:

http://greenpak.silego.com/
http://greenpak2.silego.com/
http://greenfet.silego.com/
http://greenfet2.silego.com/
http://greenclk.silego.com/

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

Silego Technical Support

Datasheets and errata, application notes and example designs, user guides, and hardware support documents and the latest software releases are available at the Silego website or can be requested directly at info@silego.com.

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

Users of Silego products can receive assistance through several channels:

Online Live Support

Silego Technology has live video technical assistance and sales support available at http://www.silego.com/. Please ask our live web receptionist to schedule a 1 on 1 training session with one of our application engineers.

Contact Your Local Sales Representative

Customers can contact their local sales representative or field application engineer (FAE) for support. Local sales offices are also available to help customers. More information regarding your local representative is available at the Silego website or send a request to info@silego.com

Contact Silego Directly

Silego can be contacted directly via e-mail at info@silego.com or user submission form, located at the following URL: http://support.silego.com/

Other Information

The latest Silego Technology press releases, listing of seminars and events, listings of world wide Silego Technology offices and representatives are all available at http://www.silego.com/