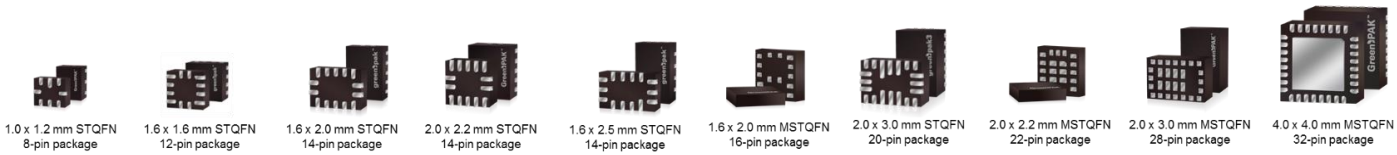
GreenPAK™
Programmable Mixed-signal Matrix

GreenPAK™ (GPAK), a member of Dialog Technology's CMIC (Configurable Mixed-signal IC) products, is a cost effective one-time NVM programmable device which enables innovators to integrate many system functions while minimizing component count, board space, and power consumption.

Using Dialog's GreenPAK Designer Software and GreenPAK Development Kit designers can create and program a custom circuit in minutes.



GREENPAK IS IDEAL FOR

- Functional replacement of popular mixed-signal standard products, often in combination.
- Providing reliable hardware safety and reset functions for software coded devices, such as SoCs and microcontrollers.

BENEFITS OVER DISCRETE DESIGN

- **Smaller PCB footprint** – Plastic packages as small as 1.0 x 1.2 mm.
- **Fewer Components/Lower Cost** – A typical GreenPAK implementation removes from ten to thirty components per instance.
- **Higher Reliability** – Fewer PCB interconnects increases reliability.
- **Faster Design** – Develop and program devices in minutes at your desk. Quickly respond to changing design requirements and increase productivity at the design and prototype verification stages.
- **Lower Power** – Save power by removing discrete resistors in voltage dividers, pull ups, pull downs, etc. and replacing with low-power, integrated components. Further reduce power consumption using the sleep function.
- **Design Security** – Makes reverse engineering substantially more difficult by disabling the read-back of NVM configuration, obscuring design details.
- **Tested Solution** – Every GreenPAK is 100% tested. A discrete circuit is not tested prior to the final board level test.

GPAK EXAMPLES

By Application
- Power Sequencing
- System Reset
- Level Shift
- LED Control
- Ambient Light Detection
- Over Voltage Protection
- Voltage Detection
- Sensor Interface
- Port Detection
- IO Expansion
- Motor & Fan Control

By Function
- State Machine
- Timing Delays
- Counters
- Pulse Width Modulator
- Comparators
- Voltage Monitor
- Voltage Reference
- ADC
- Glue Logic

By Market
- Handheld Devices
- Wearable Electronics
- Internet of Things
- Computing & Storage
- Consumer Electronics
- Smart Home
- Networking & Communications
- Medical

Dialog Semiconductor Inc.

2560 Mission College Boulevard
Suite 110, Santa Clara
California 95054 USA

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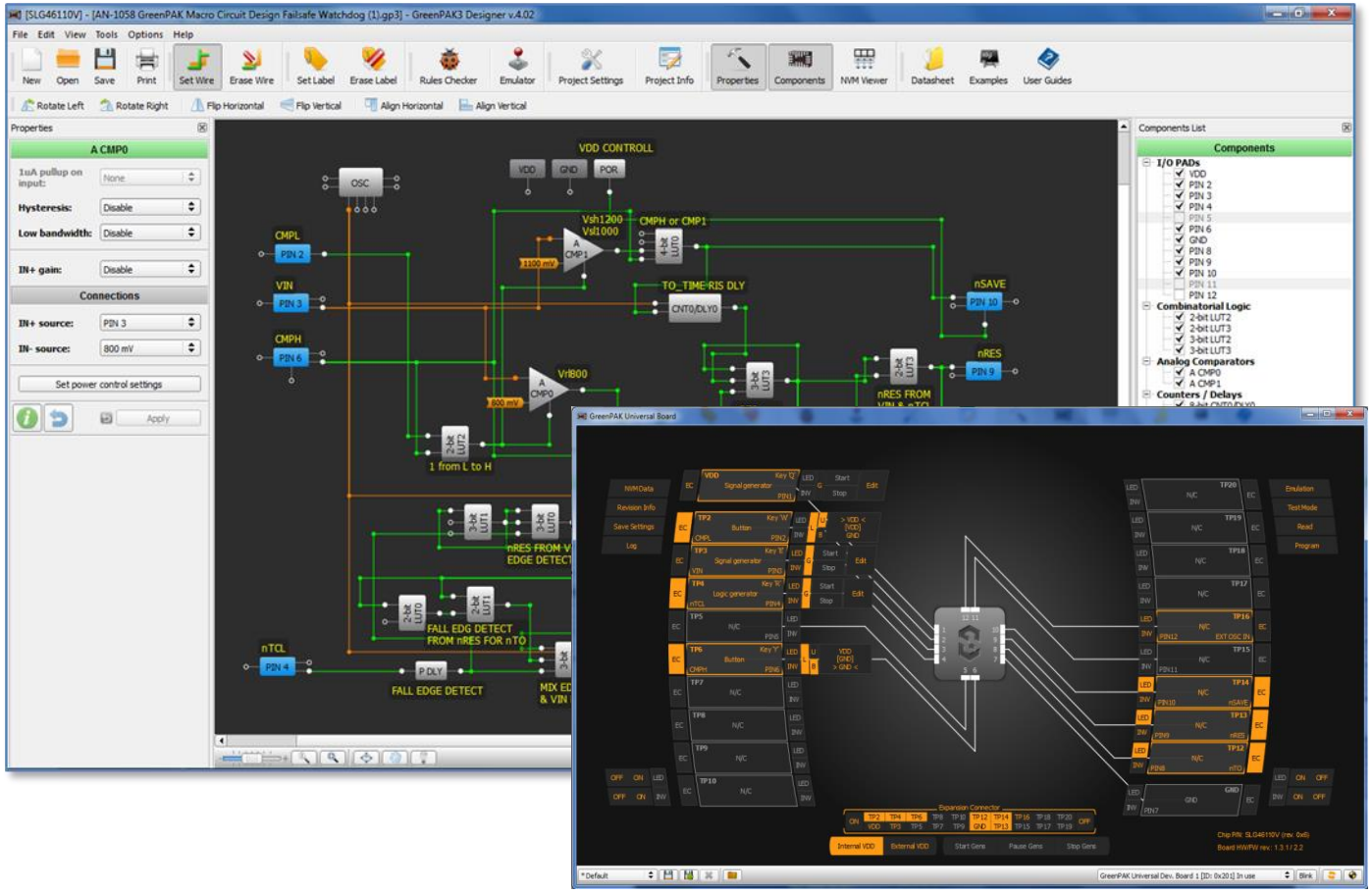
FREE DEVELOPMENT SOFTWARE

Dialog Technology's GreenPAK Designer development software enables a completely graphical design process, requiring no programming language or compiler, allowing a designer to configure, program, and test custom GreenPAK samples in minutes.

- Schematic capture-like design and routing
- Entire component library showing available resources for each device
- Easy component configuration
- Example projects and support documentation



UNIVERSAL DEVELOPMENT KIT

Working in tandem with the GreenPAK Designer Emulator, Dialog Technology's Universal Development Kit allows designers to

- Program custom samples in minutes
- Test GreenPAK projects in-circuit
- Develop using any GreenPAK 3, 4, or 5 device

GreenPAK Universal Development Kit

For more information please visit www.dialog-semiconductor.com

Or email your questions to cmic@diasemi.com

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GreenPAK™
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	SLG46108	SLG46127	SLG46116/7	SLG46110	SLG46120	SLG46140	SLG46169
# of GPIOs	6	6	7	8	10	12	12
Operating Voltage (V)	1.8 to 5.0	1.8 to 5.0	1.8 to 5.0	1.8 to 5.0	1.8 to 5.0	1.8 to 5.0	1.8 to 5.0
Dual Supply (VDD2 1.8 V to VDD)	-	-	-	-	SLG46121*	-	-
8-bit SAR ADC	-	-	-	-	-	1	-
Analog/Digital Comparators	-	2/0	2/0	2/0	2/0	2/3	2/0
Look Up Tables (LUTs)	4	4 Total	4 Total	4 Total	5 Total	8 Total	9 Total
Combination Function Macro-cells	6 Total	6 Total	6 Total	6 Total	11 Total	8 Total	9 Total
Multifunction Macrocells	0	0	0	0	0	0	0
PWMs	-	-	-	-	-	3	-
Counters/Delays	3	3	3	3	2	2	5
DFF / Latch	-	-	-	-	-	2	-
Pipe Delay	-	8-stage	8-stage	8-stage	8-stage	16-Stage	16-stage
Programmable Delay	1	1	1	1	1	1	1
Internal Oscillator	25 kHz / 2 MHz	25 kHz / 2 MHz	25 kHz / 2 MHz	25 kHz / 2 MHz	25 kHz / 2 MHz	1.7 kHz / 25 kHz / 2 MHz / 27 MHz	25 kHz / 2 MHz
Load Switch	-	2 x 2 A P-FET	1.25 A P-FET	-	-	-	-
LDO	-	-	-	-	-	-	-
Asynchronous State Machine	-	-	-	-	-	-	-
Communication Interface	-	-	-	-	-	SPI	-
TQFN Part Number	SLG46108V	-	SLG46116V SLG46117V	SLG46110V	SLG46120V SLG46121V	SLG46140V	SLG46169V
TQFN Package Size (mm)	1.0 x 1.2	-	1.6 x 2.5	1.6 x 1.6	1.6 x 1.6	1.6 x 2.0	2.0 x 2.2
MSTQFN Part Number	-	SLG46127M	-	-	-	-	-
MSTQFN Package Size (mm)	-	1.6 x 2.0	-	-	-	-	-

* Dual Supply versions lose one GPIO for VDD2

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	SLG46170	SLG46534	SLG46536	SLG46517	SLG46533	SLG46537	SLG46580
# of GPIOs	12	12	12	16	18	18	9
Operating Voltage (V)	1.8 to 5.0	1.8 to 5.0	1.8 to 5.0	1.8 to 5.0	1.8 to 5.0	1.8 to 5.0	2.5 to 5.0
Dual Supply (VDD2 1.8 V to VDD)	-	SLG46535*	-	-	-	SLG46538*	-
8-bit SAR ADC	-	-	-	-	-	-	-
Analog/Digital Comparators	-	3/0	3/0	4/0	4/0	4/0	4/0
Look Up Tables (LUTs)	15 Total	-	-	-	-	-	6 Total
Combination Function Macro-cells	2 Total	17 Total	24 Total	17 Total	24 Total	17 Total	15 Total
Multifunction Macrocells	0	0	0	0	0	0	0
PWMs	-	-	-	-	-	-	-
Counters/Delays	8	-	-	-	-	-	-
DFF / Latch	6	-	-	-	-	-	-
Pipe Delay	16-stage	16-stage	16-stage	16-stage	16-stage	16-stage	16-stage
Programmable Delay	1	1	1	1	1	1	1
Internal Oscillator	25 kHz / 2 MHz	25 kHz / 2 MHz / 25 MHz	25 kHz / 2 MHz / 25 MHz	25 kHz / 2 MHz / 25 MHz	25 kHz / 2 MHz / 25 MHz	25 kHz / 2 MHz / 25 MHz	25 kHz / 2 MHz / 25 MHz
Load Switch	-	-	-	2x 2 A P-FET	-	-	-
LDO	-	-	-	-	-	-	4 x 150 mA
Asynchronous State Machine	-	8-State	-	8-state	-	8-state	8-state
Communication Interface	-	I2C	I2C	I2C	I2C	I2C	I2C
TQFN Part Number	SLG46170V	SLG46534V SLG46535V	SLG46536V	-	SLG46533V	SLG46537V SLG46538V	SLG46580V
TQFN Package Size (mm)	2.0 x 2.2	2.0 x 2.2	2.0 x 2.2	-	2.0 x 3.0	2.0x 3.0	2.0 x 3.0
MSTQFN Part Number	-	-	-	SLG46517M	SLG46533M	SLG46537M SLG46538M	-
MSTQFN Package Size (mm)	-	-	-	2.0 x 3.0	2.0 x 2.2	-	-

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	SLG46620	SLG46721	SLG46722	SLG46880	SLG46881	SLG46826	SLG46855
# of GPIOs	18	18	18	32/28	32/28	20/17	14/12
erating Voltage (V)	1.8 to 5.0	1.8 to 5.0	1.8 to 5.0	2.3 to 5.5	2.3-5.5	2.3 to 5.5	2.3 to 5.5
Dual Supply (VDD2 1.8 V to VDD)	SLG46621*	-	-	2.3-VDD	1.0-1.8	1.71 to VDD	-
8-bit SAR ADC	1	-	-	-	-	-	-
Analog/Digital Comparators	6/3	4/0	-	5/0	5/0	4/0	4/0
Look Up Tables (LUTs)	25 Total	9 Total	15 Total	-	0	0	0
Combination Function Macro-cells	1 Total	9 Total	2 Total	12 Total	12 Total	11 Total	15 Total
Multifunction Macrocells	0	0	0	0	0	8	8
PWMs	3	-	-	-	-	-	-
Counters/Delays	10	5	8	-	-	-	-
DFF / Latch	12	-	6	-	-	-	-
Pipe Delay	2 x 16-stage	16-stage	16-stage	16-stage	16-stage	16-stage	16-stage
Programmable Delay	2	1	1	Yes	Yes	Yes	Yes
Internal Oscillator	1.7 kHz / 25 kHz/ 2 MHz / 27 MHz	25 kHz / 2 MHz	25 kHz / 2 MHz	2 kHz / 2 MHz / 25 MHz	2 kHz / 2 MHz / 25 MHz	2 kHz / 2 MHz / 25 MHz	2 kHz / 2 MHz / 25 MHz
Load Switch	-	-	-	-	-	-	-
LDO	-	-	-	-	-	-	-
Asynchronous State Machine	-	-	-	12-state	12-state	-	-
Communication Interface	SPI	-	-	I2C	I2C	I2C	I2C
TQFN Part Number	SLG46620V SLG46621V	SLG46721V	SLG46722V	SLG46880V	SLG46881V	SLG46826V	SLG46855V
TQFN Package Size (mm)	2.0 x 3.0	2.0 x 3.0	2.0 x 3.0	4.0 x 4.0	4.0 x 4.1	2.0 x 3.0	1.6 x 2.0
MSTQFN Part Number	-	-	-	-	-	-	-
MSTQFN Package Size (mm)	-	-	-	-	-	-	-

* Dual Supply versions lose one GPIO for VDD2

Free GreenPAK Designer software download, training videos, design examples and application notes can be found on our website: www.dialog-semiconductor.com

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