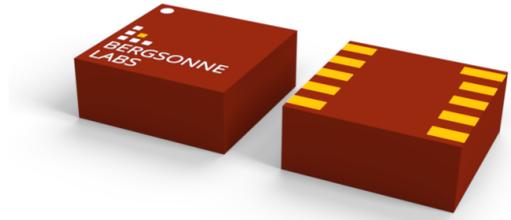




Power.P.N

primary-cell battery boost regulator

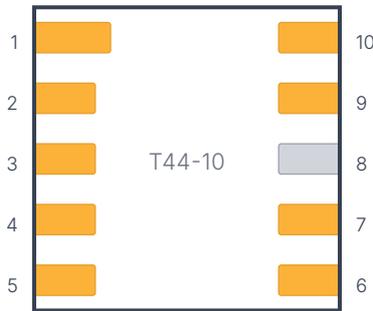
The Power.P.N tile is a primary-cell power-management subsystem based on the Nordic nPM2100 PMIC. Drawing power from one or two alkaline cells or a single coin cell battery with a total voltage of between 0.7 and 3.4V, the boost regulator delivers 1.8 V to 3.3 V at up to 150 mA, with a secondary LDO/load-switch output providing 0.8 V to 3.0 V at up to 50 mA. In addition to I2C configuration, monitoring, and advanced fuel gauging, pads are exposed for power-good indication, reset, ship-mode control, and one GPIO.



Overview

Revision	a
Package	T44-10
Power	1.8–3.3V (system) [output] (defaults to 1.8V or the battery voltage (VBATT+), whichever is GREATER), 0.8–3V (system) [output] (must be enabled via I2C), 0.7–3.4V (primary battery)
Component	nPM2100
Interfaces	I2C

Pad Assignments



(top view)

PAD	TYPE	FUNCTION	NOTE
1	power	GND	
2	digital	PG	power-good output (active-high open drain with pull-up)
	digital	reset	simultaneous active-low reset (configurable press duration; default >10s)
3	digital	GPIO1	firmware configurable
4	interface	I2C.CLK	
5	interface	I2C.DAT	
6	digital	SHPHLD	active-low (with internal pull up) trigger for ship and hold modes
7	power	VBATT+	battery positive terminal
9	power	VLDO	0.8-3.0V regulated LDO output; must be enabled via I2C
10	power	VOUT	default = 1.8V or VBATT+, whichever is GREATER



Interfaces

I2C		I2C
Mode		slave
Max Clock		1MHz
Address		0x74
Format		7-bit addr, 8-bit data
FUNCTION	REQ	PAD(S)
I2C.CLK	No	4
I2C.DAT	No	5

Application Notes

VOUT

The output voltage of the 150mA-max boost regulator defaults to 1.8V or the battery voltage (VBATT+), whichever is GREATER, with higher voltages up to 3.3V configurable via I2C.

VLDO

Off by default, the 50mA regulated output can be configured via I2C to be between 0.8 and 3.0V.

PG / RESET

The electrical configuration of pad 2 allows it to be function simultaneously as both the power-good output (as an open-drain with a pull-up resistor) and an active-low reset input.