
2.5A Synchronous Buck DC/DC Converter

Features

- Up to 95% Efficiency
- Low Quiescent Current: 360 μ A
- Up to 2.5A Load Current
- Soft-start
- Output Voltage: 5.5V~0.6V
- No Schottky Diode Required
- 1MHz Fixed Frequency Switching
- Short-Circuit Protection
- Shutdown Quiescent Current: < 1 μ A
- DFN3*3-10L Package (lead-free package)

Application

- Digital cameras and MP3
- Palmtop computers / PDAs
- Cellular phones
- Wireless handsets and DSL modems
- PC cards
- Portable media players

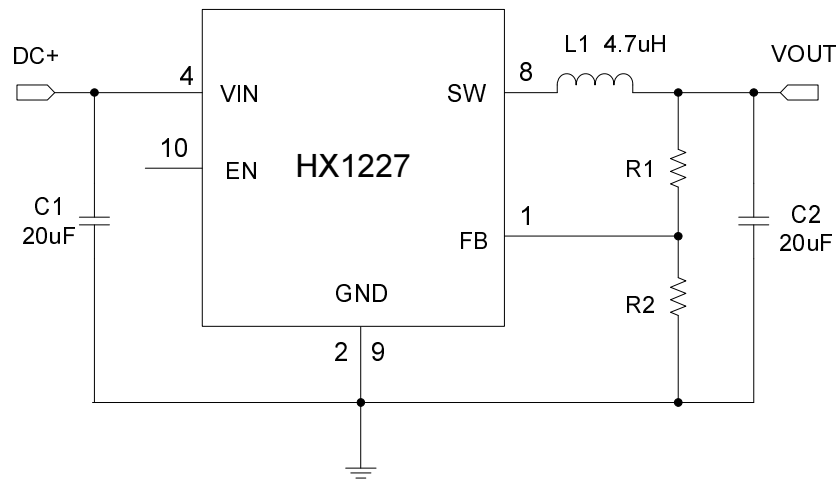
Description

The HX1227 is high efficiency synchronous, step-down DC/DC converters working under an input voltage range of 2.5V to 5.5V. This feature makes the HX1227 suitable for single Li-Ion battery-powered applications. 100% duty cycle capability extends battery life in portable devices, while the quiescent current is 360 μ A with no load, and drops to < 1 μ A in shutdown.

The internal synchronous switch is desired to increase efficiency without an external Schottky diode. The 1MHz fixed switching frequency allows the using of tiny, low profile inductors and ceramic capacitors, which minimized overall solution footprint.

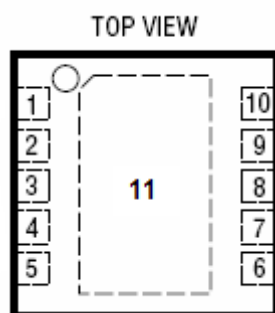
The HX1227 converters are available in the industry standard DFN3*3-10L power package.

Typical Applications



* The V_{OUT} is adjustable: $V_{OUT} = 0.8V \cdot [1 + (R1/R2)]$.

Pin Description



DFN3*3-10L

PIN NUMBER DFN3*3-10L	PIN NAME	DESCRIPTION
1	FB	Feedback
2,9,11	GND	Ground
3,5,6,7	N/C	No Connect
4	VIN	Power Input
8	SW	Switch Node Connection to inductor
10	EN	ON/OFF Control (High Enable)

Pin Assignment

FB (Pin 1): Feedback Pin. Connect resistor divider tap here. In the adjustable version, the output voltage is set by a resistive divider according to the following formula: $V_{OUT} = 0.8V \cdot [1 + (R1/R2)]$.

GND (Pin 2, 9, 11): Ground Pin.

N/C (Pin 3, 5, 6, 7): No Connect.

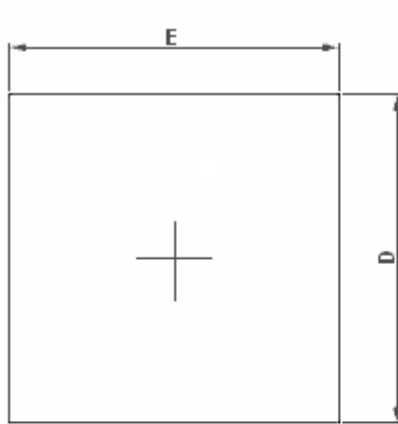
VIN (Pin 4): Supply voltage input.

SW (Pin 8): Switch Node Connection to inductor. This pin connects to the drains of the internal main and synchronous power MOSFET switch.

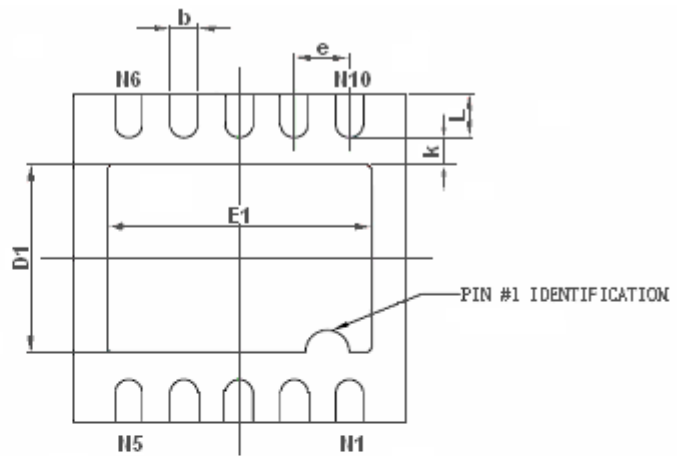
EN (Pin 10): En Control Input. Forcing this pin above 1.5V enables the part. Forcing this pin below 0.4V shuts down the device. In shutdown, all functions are disabled drawing <1uA supply current. Do not leave EN floating.

Packaging Information

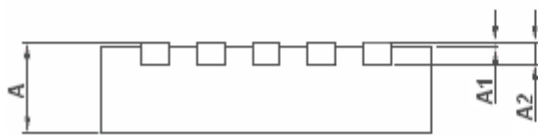
DFN3*3-10L Package Outline Dimension



Top View



Bottom View



Side View

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.700/0.800	0.800/0.900	0.028/0.031	0.031/0.035
A1	0.000	0.050	0.000	0.002
A2	0.153	0.253	0.006	0.010
D	2.900	3.100	0.114	0.122
E	2.900	3.100	0.114	0.122
D1	1.600	1.800	0.063	0.071
E1	2.300	2.500	0.091	0.098
k	0.200MIN		0.008MIN	
b	0.200	0.300	0.008	0.012
e	0.500TYP		0.020TYP	
L	0.300	0.500	0.012	0.020