# 3.0A 150KHz HV Buck DC/DC PWM Step-down Converter

### **Features**

- Wide 4.5V to 50/60V Input Voltage Range
- 3.3V,5V,12V, and adjustable versions
- Output Adjustable from 1.23V to 37V
- Maximum Duty Cycle 100%
- Minimum Drop Out 1.5V
- Fixed 150KHz Switching Frequency
- 3A Constant Output Current Capability
- Internal Optimize Power Transistor
- High efficiency
- Excellent line and load regulation
- TTL shutdown capability
- ON/OFF pin with hysteresis function
- Built in thermal shutdown function
- Built in current limit function
- Built in second current limit function
- Available in TO-220, TO-263 packages

### Applications

- LCD Monitor and LCD TV
- **Digital Photo Frame**

**Ordering Information** 

- Set-up Box
- ADSL Modem
- Telecom / Networking Equipment

### **General Description**

The FH2596 is a 150KHz fixed frequency PWM buck (step-down) DC-DC converter, capable of driving a 3.0A load with high efficiency, low ripple and excellent line and load regulation. Requiring a minimum number of external components, the regulator is simple to use and include internal frequency compensation and a fixed-frequency oscillator.

The PWM control circuit is able to adjust the duty ratio linearly from 0 to 100%. An enable function, an over current protection function is built inside. When second current limit function happens, the operation frequency will be reduced from 150KHz to 50KHz. An internal compensation block is built in to minimize external component count.



Part Number	Package	Temperatur Range
LM 2596T-ADJ		
LM 2596T-3.3		

Part Number	Package	Temperature Range	Device	Packing Type
LM 2596T-ADJ			2596T-ADJFD	
LM2596T-3.3	TO220-5L	$-40^{\circ}C \sim 85^{\circ}C$	2596T-3.3FD	- Tube
LM2596T-5.0			2596T-5.0FD	
LM2596T-12.0			2596T-12.0FD	
LM2596S-ADJ		-40°C ~ 85°C "	2596S-ADJFD	800 Units on Tape & Reel
LM 2596S-3.3	TO263-5L		2596S-3.3FD	
LM2596S-5.0			2596S-5.0FD	
LM2596S-12.0			2596S-12.0FD	

Pb-free products, as designated with \*\*" suffix in the par number, are RoHS compliant.

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## **Pin Configurations**



Figure2. Pin Configuration of FH2596 (Top View)

Table	1	Pin	D	escri	ption
					1

Pin Number	Pin Name	Description
1	VIN	Supply Voltage Input Pin. FH2596 operates from a 4.5V to
1		capacitor to eliminate noise on the input.
2	OUTPUT	Power Switch Output Pin (SW). Output is the switch node that
2		supplies power to the output.
	GND	Ground Pin. Care must be taken in layout. This pin should be
3		placed outside of the Schottky Diode to output capacitor ground path to prevent switching current spikes from inducing voltage noise into FH2596.
	FEEDBACK	Feedback Pin (FB). Through an external resistor divider
4		network, Feedback senses the output voltage and regulates it.
		The feedback threshold voltage is 1.23V.
5	ON/OFF	Enable Pin. Drive ON/OFF pin low to turn on the device, drive
5		it high to turn it off. Floating is default low.

# **Typical Application Circuit**



Figure 4. FH2596 Typical Application Circuit 12V-5V/3A

### Package Information

(1) TO220-5L



#### (2) TO263-5L



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