

## DIGITAL PWM IC

### 1.0 General Description

The G5237F is a high performance AC/DC power supply controller which uses digital control technology to build peak current mode PWM flyback power supplies. The device operates in quasi-resonant mode to provide high efficiency along with a number of key built-in protection features while minimizing the external component count, simplifying EMI design and lowering the total bill of material cost. The G5237F removes the need for secondary feedback circuit while achieving excellent line and load regulation. It also eliminates the need for loop compensation components while maintaining stability over all operating conditions. Pulse-by-pulse waveform analysis allows for a loop response that is much faster than traditional solutions, resulting in improved dynamic load response for both one-time and repetitive load transients. The built-in power limit function enables optimized transformer design in universal off-line applications and allows for a wide input voltage range. GlobalSemi's innovative proprietary technology ensures that power supplies built with the G5237F can achieve both highest average active efficiency and have fast dynamic load response in a compact form factor in typical applications.

#### *Features*

- ◆ Tight constant-voltage and constant-current regulation across line and load range
- ◆ Primary-side feedback eliminates opto-isolators and simplifies design
- ◆ Proprietary optimized 90 kHz maximum PWM switching frequency with quasi-resonant operation achieves best size, efficiency and common mode noise
- ◆ Adaptive Multi-mode PWM/PFM control improves efficiency
- ◆ No external loop compensation components required
- ◆ Complies with EPA 2.0 energy-efficiency specifications with ample margin
- ◆ Built-in single-point fault protection features: output short-circuit protection, output over-voltage protection, over-current protection , current-sense-resistor fault protection and over temperature protection
- ◆ No audible noise over entire operating range

#### *Applications*

- Compact AC/DC adapter/chargers for media tablets and smart phones
- AC/DC adapters for consumer electronics

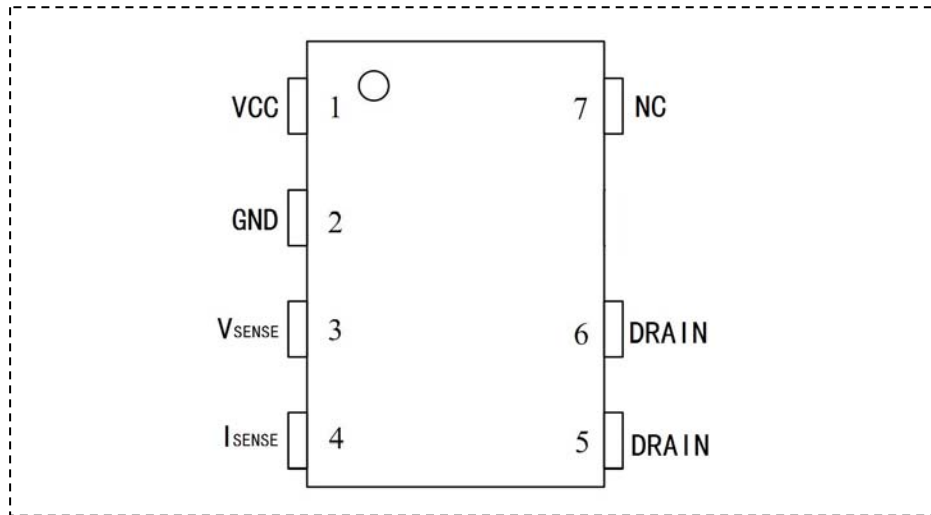
**2.0 Products Information****2.1 Pin configuration**

Figure2.1: G5237F Series (SOP7 Package)

Pin#	Name	I/O	Description
1	VCC	Power Input	Power supply for control logic.
2	GND	Ground	Ground.
3	V <sub>SENSE</sub>	Analog Input	Auxiliary voltage sense (used for primary regulation).
4	I <sub>SENSE</sub>	Analog Input	Primary current sense. Used for cycle-by-cycle peak current control and limit.
5/6	DRAIN	Output	HV MOSFET Drain Pin. The Drain pin is connected to the primary lead of the transformer
7	NC		

**2.2 Marking Information**

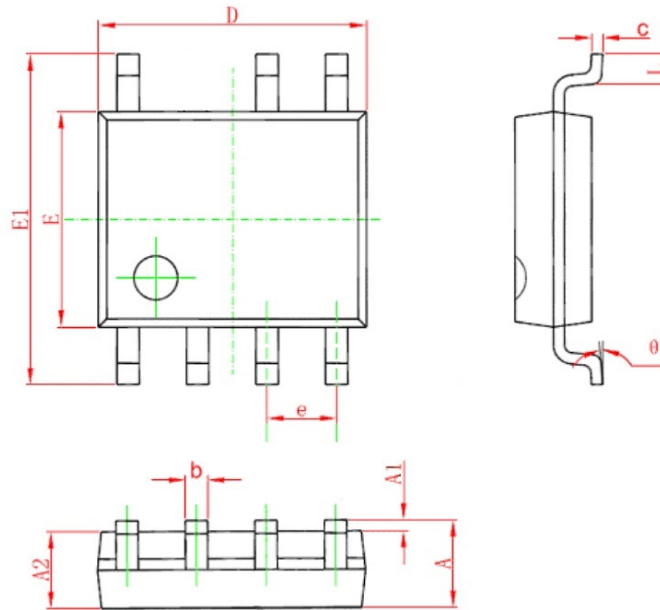
Part Number	Marking Information
G5237F	

**2.3 Series description**

Part Number	Description
G5237F	Cable Comp = 300mV (5V application)

### 3.0 Package Information

#### SOP7 PACKAGE



Symbol	Dimension in Millimeters		Dimensions in Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.050	0.250	0.002	0.010
A2	1.250	1.650	0.049	0.065
b	0.310	0.510	0.012	0.020
c	0.100	0.250	0.004	0.010
D	4.700	5.150	0.185	0.203
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270(BSC)		0.050(BSC)	
L	0.400	1.270	0.016	0.050
$\theta$	0°	8°	0°	8°

Data and specifications subject to change without notice.

This product has been designed and qualified for Industrial Level and Lead-Free.

Qualification Standards can be found on GS's Web site.

Global Semiconductor HEADQUARTERS:

Scotia Centre, 4th Floor, P.O. Box 2804, George Town, Grand Cayman KY1-1112, Cayman

Visit us at [www.globalsemi-group.com](http://www.globalsemi-group.com) for sales contact information.

