

ANALOG PWM IC

1.0 General Description

The G1513 is a high performance AC/DC power supply controller for battery charger and adapter applications requirements up to 40W. It can meet less than 80 mW standby power.

G1513 is a current mode PWM controller, it operates in fixed frequency which is precisely set internally. It could operate in Extended Burst Mode at no load or light load, in which mode switching loss is minimized and the frequency is adjusted internally. To ensure that power supplies work quietly, the frequency is set beyond 22 KHz.

Small current is needed when G1513 starts up and works, thus a large value resistor could be used in the startup circuit to minimize the standby power. Slope compensation circuit is integrated in G1513, which improves system large signal stability and reduces the possible sub-harmonic oscillation at high PWM duty cycle.

Frequency shuffling technique is integrated in G1513, which helps to achieve excellent EMI performance.

G1513 offers complete protection functions including cycle-by-cycle current limiting protection(OCP), over load protection(OLP), VDD over voltage protection(OVP), VDD over voltage clamp and under voltage lockout(UVLO).

The G1513 is available in SOT23-6 package.

Features

- ◆ Built-in Soft Start
- ◆ Random Frequency Adjustment to Reduce System EMI
- ◆ Audio Noise Reduction
- ◆ Short Circuit Protection
- ◆ Internal Cable Compensation
- ◆ Extended Burst Mode Control For Improved Efficiency and Minimum Standby Power Design
- ◆ Internal Synchronized Slope Compensation
- ◆ Low VDD Startup Current and Low Operating Current
- ◆ Leading Edge Blanking on Current Sense Input
- ◆ Over Load Protection(OLP) and Cycle-by-Cycle Current Limiting Protection(OCP)
- ◆ VDD Over Voltage Protection(OVP), Under Voltage Lockout Protection(UVLO) and Over Voltage Clamp

Applications

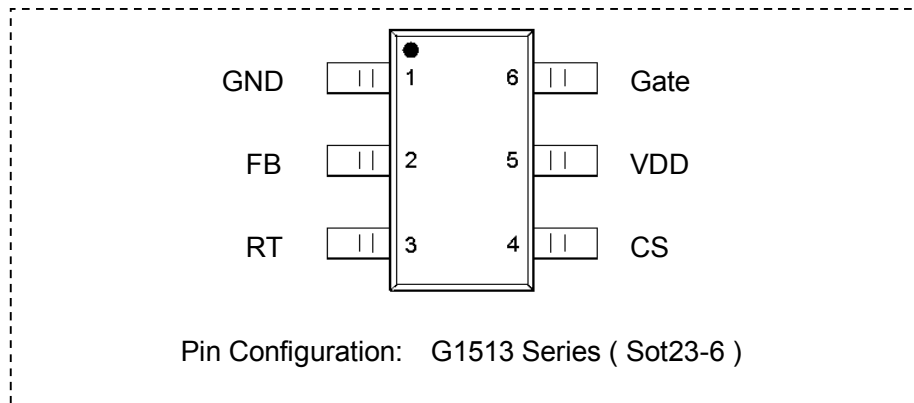
- Offline AC/DC flyback converter
- Power Adapter
- Set-Top Box Power Supplies
- Open-frame SMPS
- Auxiliary Power Supply for PC and Server
- Digital Cameras and Camcorder Adapter

G1513

High Performance Current Mode PWM Controller

2.0 Products Information

2.1 Pin configuration



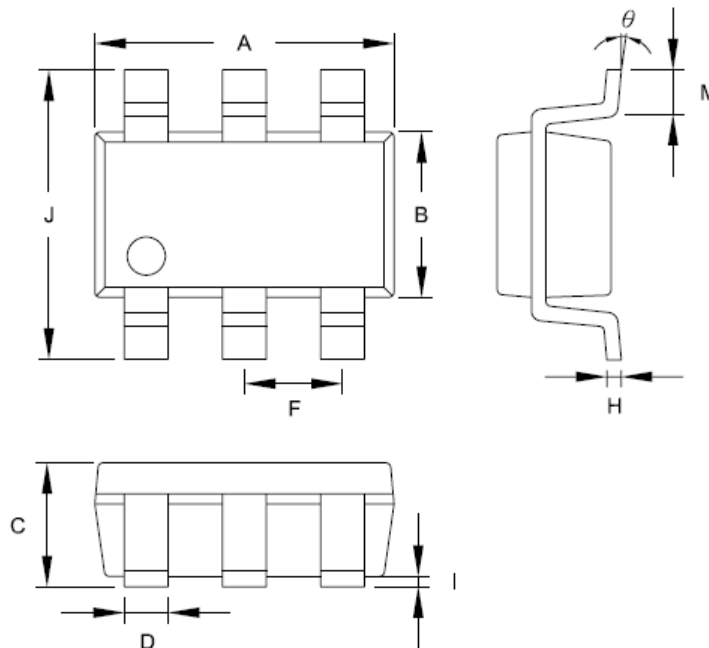
Pin Name	I/O	Description
GND	P	Ground
FB	I	Feed back input Pin. The PWM duty cycle is determined by voltage level into this pin and the current-sense signal at Pin 4.
RT	I	Dual protection pin. Either connected through a NTC resistor to ground over temperature shutdown/latch control or connected through zener to VDD for adjustable over voltage protection.
CS	I	Current sense input.
VDD	P	Power supply.
Gate	O	Gate driver output.

2.2 Marking Information

Part Number	Marking Information
G1513A	8AXXX
G1513B	8BXXX
G1513F	8CXXX

3.0 Package Information

Sot23-6



Symbol	Dimension in Millimeters		Dimensions in Inches	
	Min	Max	Min	Max
A	2.692	3.099	0.106	0.122
B	1.397	1.803	0.055	0.071
C	--	1.450	--	0.057
D	0.300	0.500	0.012	0.020
F	0.95		0.037	
H	0.080	0.254	0.003	0.010
I	0.050	0.150	0.002	0.006
J	2.600	3.000	0.102	0.118
M	0.300	0.600	0.012	0.024
θ	0°	10°	0°	10°

Data and specifications subject to change without notice.

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

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

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