NC-Cap/PSR™ (Primary Side Regulation) CV/CC Controller

FEATURES

- **Proprietary "Audio Noise Cancellation" Control**
- **Built-in AC Line CC Compensation**
- **Proprietary "Zero-Output Startup" Control**
- **Proprietary "Smart Output Short Protection"**
- **11.5V UVLO Hysteresis Window**
- **FB Short Protection**
- **Direct Drive of Low Cost BJT**
- **Proprietary NC-Cap/PSR™ Control**
- **Proprietary Cable Drop Compensation**
- **Multi Mode Control**
- **Wide VDD Operating Range (7V to 24V)**
- **±5% CC and CV Precision**
- **Low Standby Power Under 70mW**
- **Compensate for Transformer Inductance Tolerances and Line Voltage Variation**
- **Cycle-by-Cycle Current Limiting**
- **Leading Edge Blanking (LEB)**
- **Built-in Soft Start**
- **Pin Floating Protection**
- **VDD UVLO, OVP & Clamp**

APPLICATIONS

- **Battery chargers**
- **Replaces linear transformer and RCC SMPS**
- **Small power adapter**
- **AC/DC LED lighting**

GENERAL DESCRIPTION

SF6010N is a high precision, highly integrated DCM (Discontinuous Conduction Mode) Primary Side Regulation (PSR) controller for offline small power converter applications. It can directly drive power BJT, which can further lower system cost. The IC integrates proprietary "**Audio Noise Cancellation**" control for audio noise free operation.

SF6010N has built-in proprietary **NC-Cap/PSR™** control for CV control, which eliminates external compensation or filtering capacitor. It has built-in cable drop compensation function, which can provide excellent CV performance. The IC uses Multi Mode Control to improve efficiency and reliability and to decrease audio noise energy @ light loadings. The IC can achieve less than 70mW standby power.

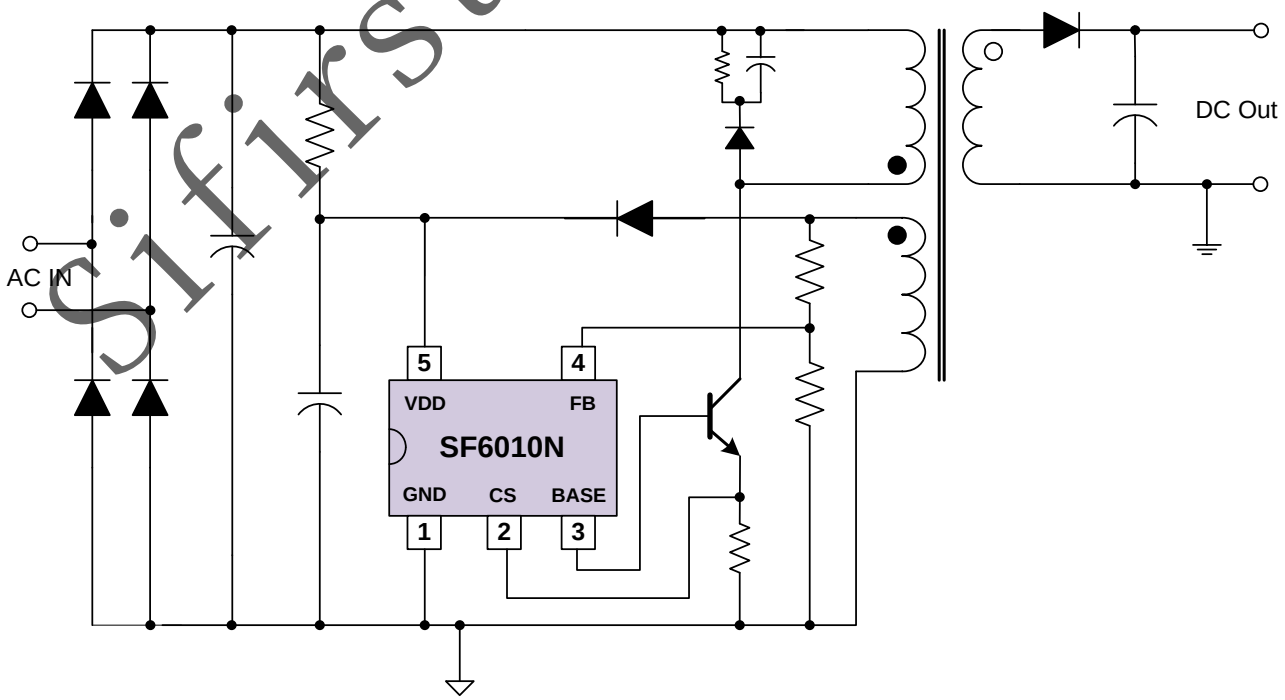
SF6010N integrates proprietary "**Zero-Output Startup**" control to achieve startup when output is near zero voltage. The IC also has proprietary "**Smart Output Short Protection**", which can limit maximum power when output is short circuit.

SF6010N integrates functions and protections of FB Short Protection, Under Voltage Lockout (UVLO), VDD Over Voltage Protection (VDD OVP), Soft Start, Cycle-by-cycle Current Limiting (OCP), Pin Floating Protection, VDD Clamping.

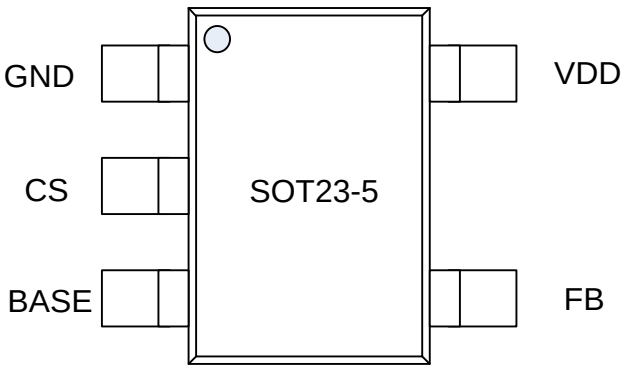
SF6010N is available in SOT23-5 and SOT23-6 packages.

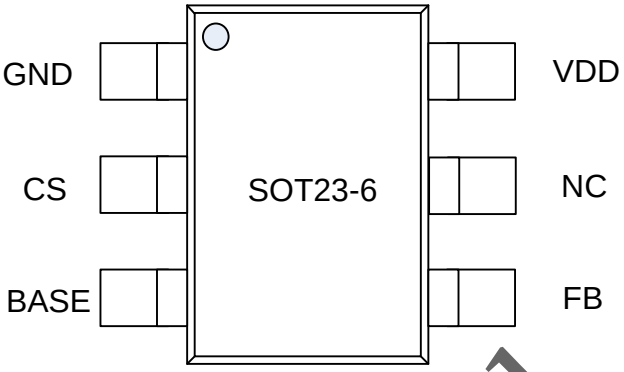
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TYPICAL APPLICATION



Pin Configuration





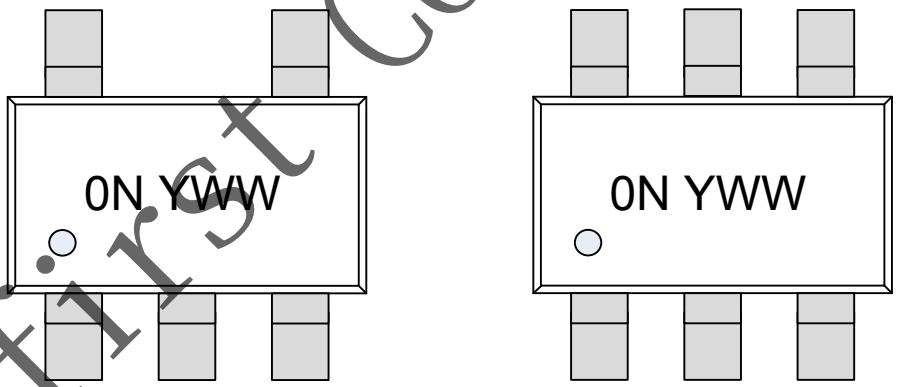
Ordering Information

Part Number	Top Mark	Package		Tape & Reel
SF6010NMGT	.0NYWW	SOT23-5	Green	Yes
SF6010NLGT	.0NYWW	SOT23-6	Green	Yes

Comparison between SF6010N and SF6010

Parameter or Function	SF6010N	SF6010
VDD UVLO(ON)/(OFF)	18V/6.5V	15V/9.5V
Audio Noise Cancellation Control	**Yes**	
Constant Current (CC) Performance	Built in AC Line CC Compensation	
Protections	"Zero Output Startup Control" "Smart Output Short Protection" "FB Short Protection"	
Output OVP		Yes

Marking Information



Dot: Pin1 Mark

YWW: Year & Week Code

Pin Description

Pin Num	Pin Name	I/O	Description
1	GND	P	Ground
2	CS	I	Current sense pin.
3	BASE	O	Base drive for BJT.
4	FB	I	System feedback pin. This control input regulates both the output voltage in CV mode and output current in CC mode based on the flyback voltage of the auxiliary winding.
5	VDD	P	IC power supply pin.

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