



Features

- OVP Threshold: 6.1V
- Over Current Protection
- OVP Threshold Time Less Than 1µs
- Low RDS(ON): 135mΩ @ 5V /1A
- Output Discharge
- Thermal Fault Protection
- SOT23-6 Package
- RoHS Compliant and 100% Lead (Pb)-Free

Applications

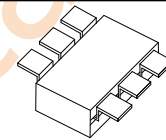
- Portable Devices
- GPS
- Digital Cameras
- Tablets
- Mobile Phones

Description

The LP5300F is an Over-Voltage-Protection (OVP) and Over-Current-Protection (OCP) device. The device will switch off internal MOSFET to disconnect VIN to VOUT to protect load when any of input voltage, input current over the threshold. The over temperature protection (OTP) function monitors chip temperature to protect the device.

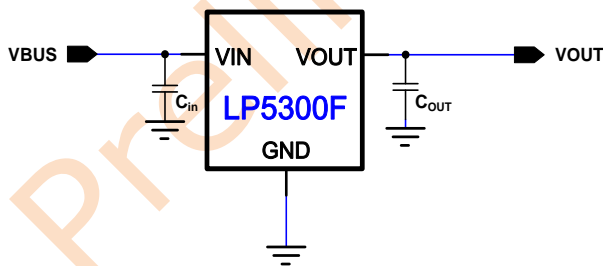
Other features include under-voltage lockout (UVLO).

The LP5300F is available in SOT-23-6 package. Standard products are Pb-free and Halogen-free.

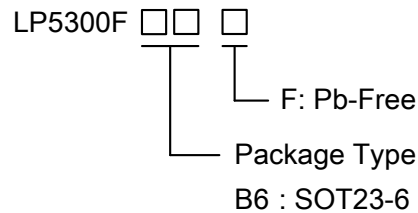


SOT23-6
0.95mm pin pitch

Typical Application Circuit



Ordering Information

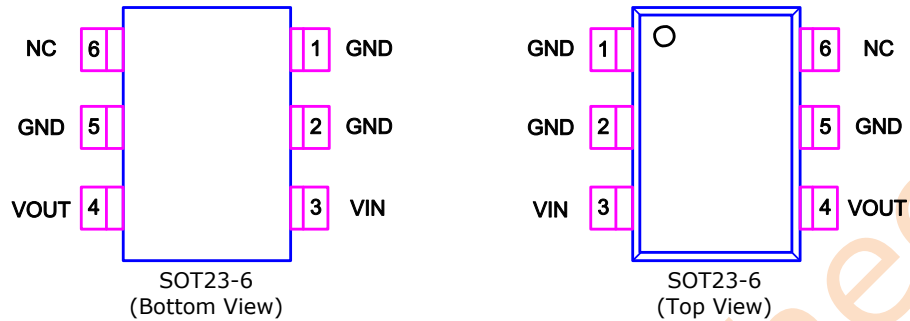


Marking Information

Device	Marking	Package	Shipping
LP5300FB6F	LPS 8FYWX	SOT23-6	3K/REEL
Marking indication: Y is year code. W is week code. X is series number.			



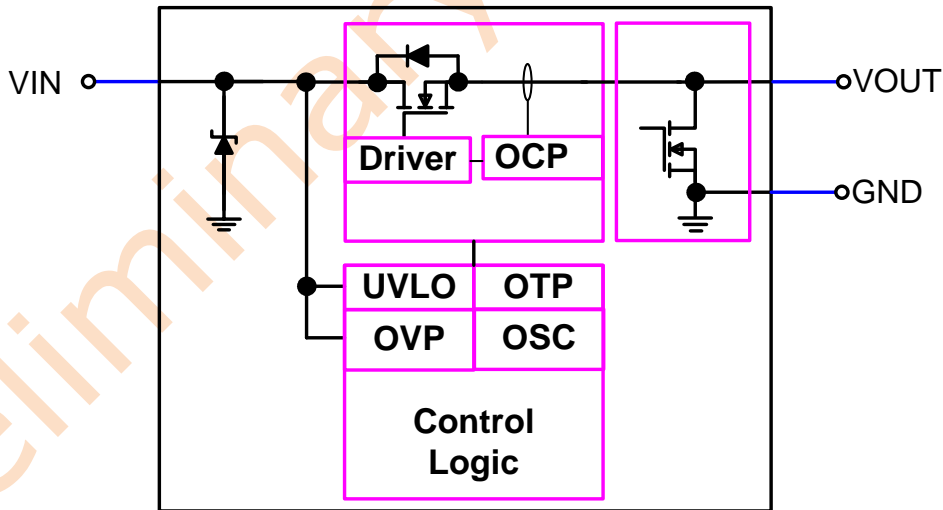
Pin Configuration



Pin Description

Pin No.	Name	Description
1,2,5	GND	Ground pad.
3	VIN	Power source input. Connect a ceramic capacitor between VIN and GND.
4	VOUT	Output through the power MOSFET. Bypass VOUT to GND with a ceramic capacitor.
6	NC	No connector. These pin must be floating. Connect to GND will be disable OCP function.

Functional Block Diagram





Absolute Maximum Ratings (Note 1)

- VIN to GND ----- -0.3V to 26V
- VOUT to GND ----- -0.3V to 7V
- Maximum Junction Temperature (T_J) ----- 125°C
- Operating Ambient Temperature Range (T_A) ----- -40°C to 85°C
- Maximum Soldering Temperature (At leads, 10 sec) ----- 260°C

*Note 1: Stresses beyond those listed under “Absolute Maximum Ratings” may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

Thermal Information

- Maximum Power Dissipation (P_D, T_A ≤ 25°C) ----- 0.4W
- Thermal Resistance (θ_{JA})^(Note 2) ----- 250°C/W



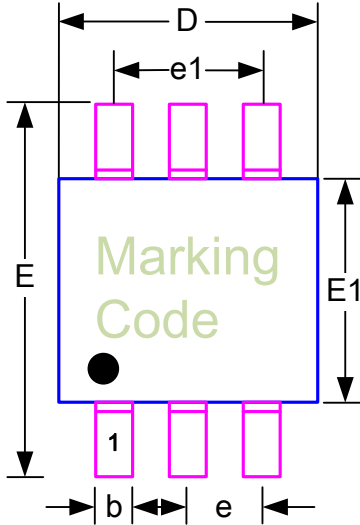
Electrical Characteristics

The parameters are measured under conditions $V_{IN} = 5V$, $C_{IN} = C_{OUT} = 1\mu F$, $T_A = 25^\circ C$, unless otherwise specified.

Parameter	Symbol	Test Conditions	Min	Typ.	Max	Units
General Function						
Input Voltage	V_{IN}	$T_J = +25^\circ C$	3.7	5	20	V
Input UVLO Threshold	V_{UVLO}	V_{IN} Rising		3.5		V
UVLO Threshold Hysteresis	ΔV_{UVLO}	Falling Hysteresis		200		mV
Soft Start Time	T_{SS}			8		ms
Input Quiescent Current	I_Q	No loading		200		μA
Thermal Shutdown Threshold	T_{SD}	No loading		150		$^\circ C$
Thermal Shutdown Threshold Hysteresis	ΔT_{SD}			20		$^\circ C$
Power MOS						
Switch On Resistance	$R_{DS(ON)}$	$I_{OUT}=1A$		135		m Ω
Output Discharge Resistance	R_{DIS}			2		k Ω
Protection Functions						
Input Over Voltage Protect threshold	V_{IOVP}	V_{IN} from 5V to 8V		6.1		V
Input OVP threshold Hysteresis	ΔV_{IOVP}	V_{IN} from 8V to 5V		100		mV
Input OVP propagation delay	T_{OVP}	$V_{IN}=5V \rightarrow 8V$			1	μs
OVP recovery time	$T_{ON(OVP)}$	$V_{IN}=8V \rightarrow 5V$ to output on		8		ms
Over Current Protection	I_{OCP}			3		A
OCP Active Time	T_{OCP}			30		ms
OCP Recovery Time	$T_{ON(OCP)}$			1		s

Package Dimensions

SOT23-6 Package (Unit: mm)



SYMBOLS UNIT	DIMENSION IN MILLIMETER		
	MIN	NOM	MAX
A	--	--	1.350
A1	0.040	--	0.150
A2	0.900	1.100	1.300
b	0.300	--	0.480
c	0.080	--	0.210
D	2.720	2.920	3.120
E	2.600	2.800	3.000
E1	1.400	1.600	1.800
e	0.950 BSC		
e1	1.800	1.900	2.000
L	0.300	--	0.610

