300mA LDO Vout NO Fast Discharge Function

Features

- Maximum output current: 300mA @ VIN-VOUT=1V
- PSRR: 75dB @1KHz
- Dropout voltage: 55mV @ IOUT=50mA when VOUT=3.3V
- Quiescent current : 3μA Typ.
- Shut-down current: < 0.5μA
- Recommend capacitor: 1μF

Applications

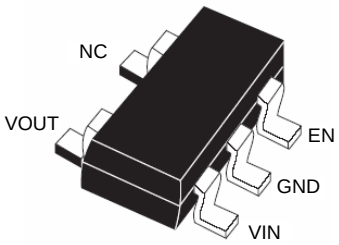
- Battery powered equipment
- Reference voltage sources
- Cameras, Video cameras
- Portable AV systems
- Mobile phones
- Communication tools

General Description

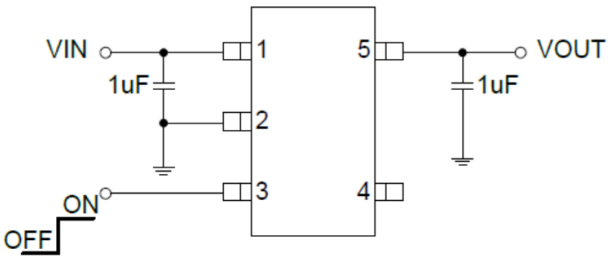
The FS3306 series are CMOS precise, low power consumption, high voltage; positive voltage regulators designed for portable applications with low quiescent current (5μA) and dropout voltage (55mV at 50mA).

The FS3306 have typical current limit of 300mA and are available in high accuracy (2%), The output voltages are 1.2V、1.5V、1.8V、2.0V、2.5V、3.0V、3.3V. These products feature thermal shutdown protection and current limit with fold-back in short circuit. SOT23-5L packages are available.

Pin Configurations (SOT23-5L)



Typical Application Circuit



Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit
IN Supply Voltage	V_{IN}	-0.3 TO 8	V
OUT Voltage	V_{OUT}	-0.3V to V_{IN}+0.3	V
EN Voltage		-0.3V to 8	V
Continuous OUT Current	I_{MAX}	Internally limited	
Power Dissipation (T_{AMB} = 25℃)	P_D	300	mW
Operating Temperature	T_{OPR}	–25 to +85	℃
Storage Temperature Range	T_{STG}	–40 to +125	℃

Ordering Information

FS3306-①②③④

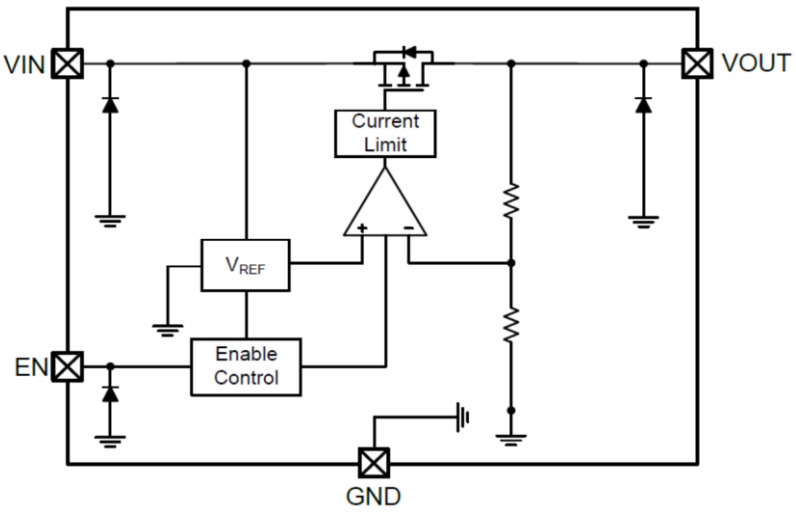
DESIGNATOR	SYMBOL	DESCRIPTION
①②	Output Detection Voltage	…12=1.2V 15=1.5V, 18=1.8V, 28=2.8V, 30=3.0V, 33=3.3V…
③④	Package Type:	SK: SOT23-5L

Electrical Characteristics

V_{IN} = V_{OUT} + 1V, V_{EN} = V_{IN}, C_{IN} = C_{OUT} = 1μF, T_J = 25°C unless otherwise specified

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Operating Voltage	Vin		2.5		5.5	V
Output Voltage Accuracy	ΔV_{OUT}		-2	0	2	%
Line Regulation		V_{IN} = V_{OUT}+1V to 8V		6		mV
Load Regulation		I_{OUT} =1mA to 100 mA		20		mV
Power Supply Rejection Ratio	PSRR	VIN=5VDC+0.5V_{P-P} F=1KHz, IOUT=30mA		75		dB
		VIN=5VDC+0.5V_{P-P} F=1MHz, IOUT=30mA		47		
Supply Current	I_Q	EN = 1.4V		3	5	μA
		EN = 0.4V		0.6	1	
Dropout Voltage	V_{DO}	VOUT>=2.5V, IOUT=50mA		55		mV
Current Limit	I_{LIM}			480		mA
Current Limit Short Circuit	I_{LIMSC}	VEN=VIN, VOUT Short to GND with 1Ω		100		mA
Output Noise	en	C_{OUT} = 1μF, I_{OUT} = 40mA, F = 300Hz to 50KHz		50		μV_{RMS}
EN Input Logic Low Threshold	V_{IL}	VIN=5.5V, VOUT=0V			0.4	V
EN Input Logic High Threshold	V_{IH}	VIN=5.5V, IOUT=1mA	1.5			V
EN Input Current		VEN= 0 to 5.5V		0	0.5	uA

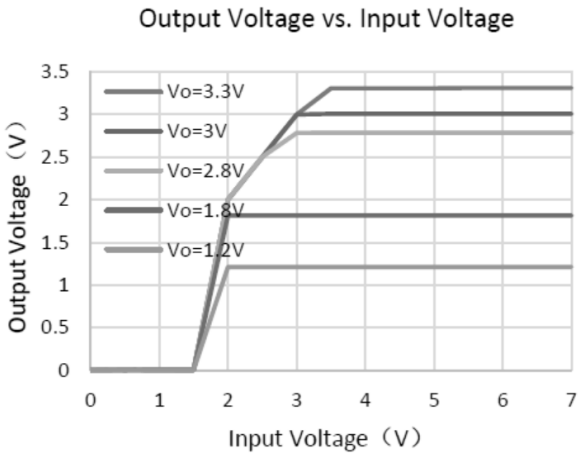
Typical Block Diagram

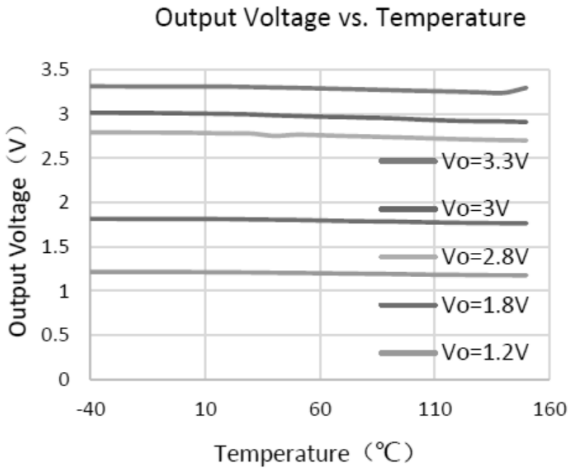


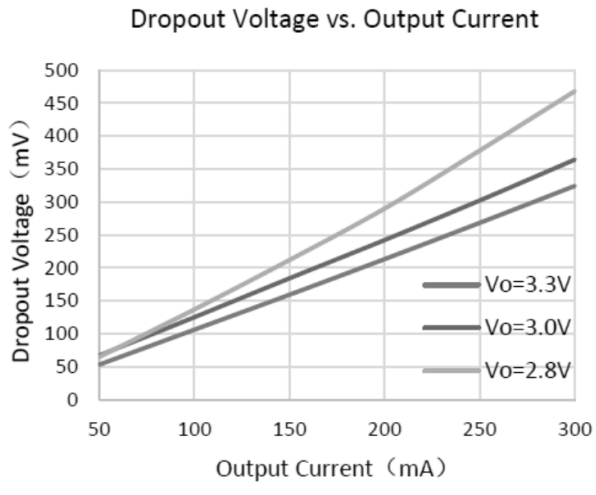
- **Pin Description**

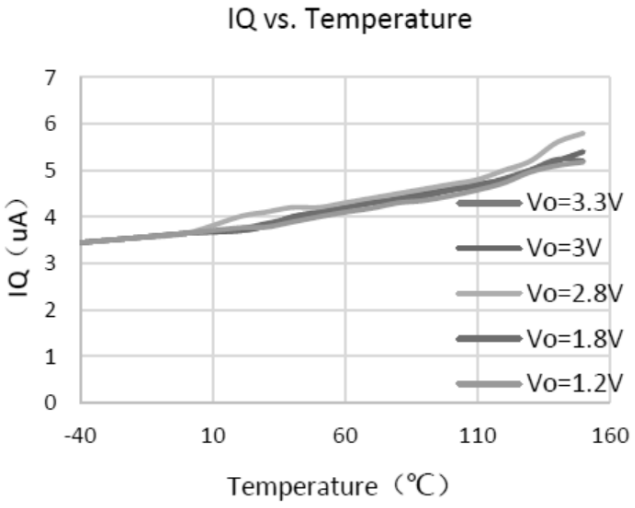
Pin No.	Pin Name	Pin Function
1	IN	Input positive power pin of FS3306.
2	GND	Ground
3	EN	Enable Input. High level enables the LDO. Connect this pin to IN if not used; do not leave EN unconnected.
4	NC	Not use
5	OUT	Output pin.

- **Typical Performance Characteristics**



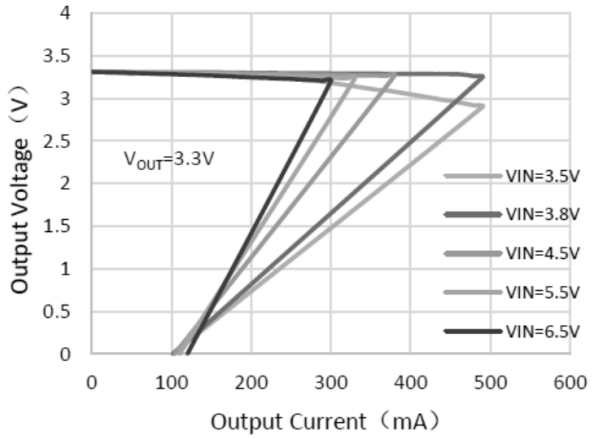






- **Typical Performance Characteristics**

Output Voltage vs. Output Current



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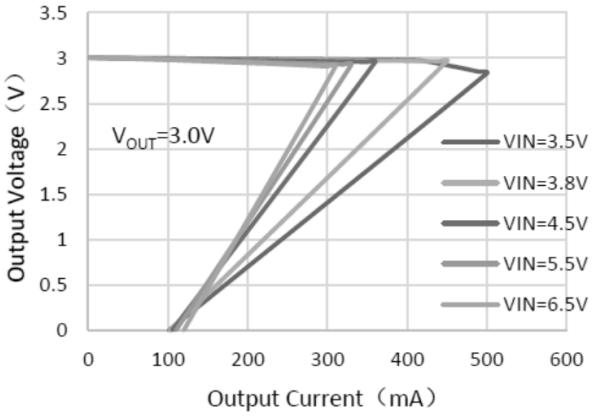

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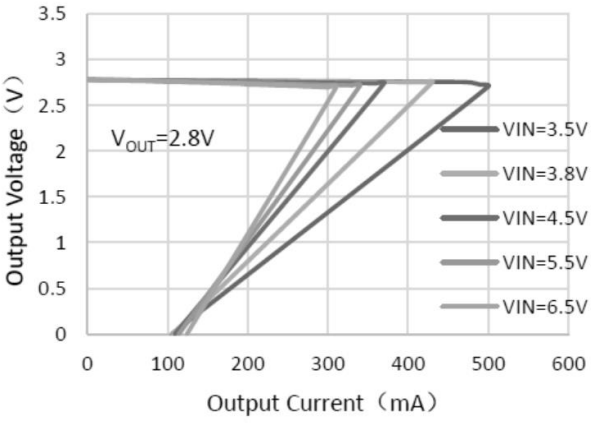

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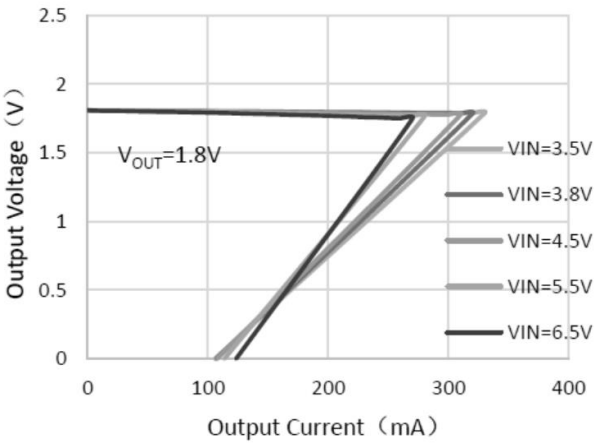
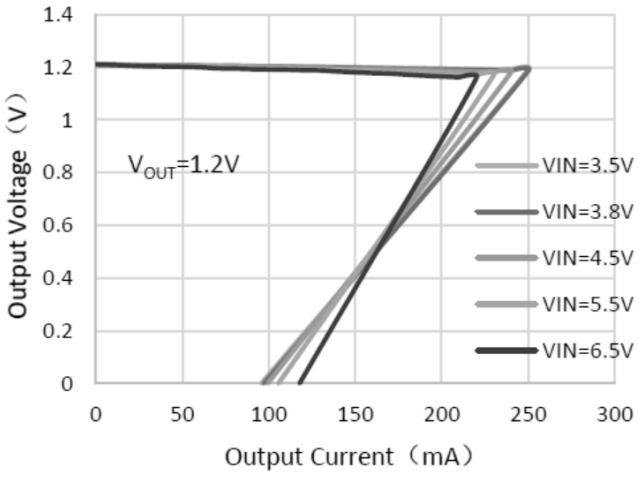
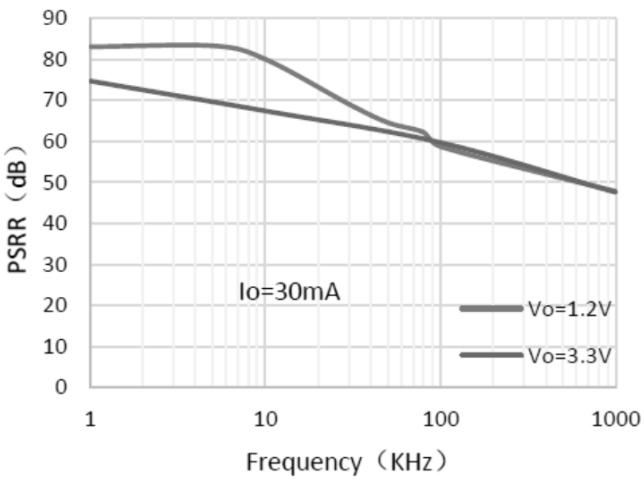


Output Voltage vs. Output Current

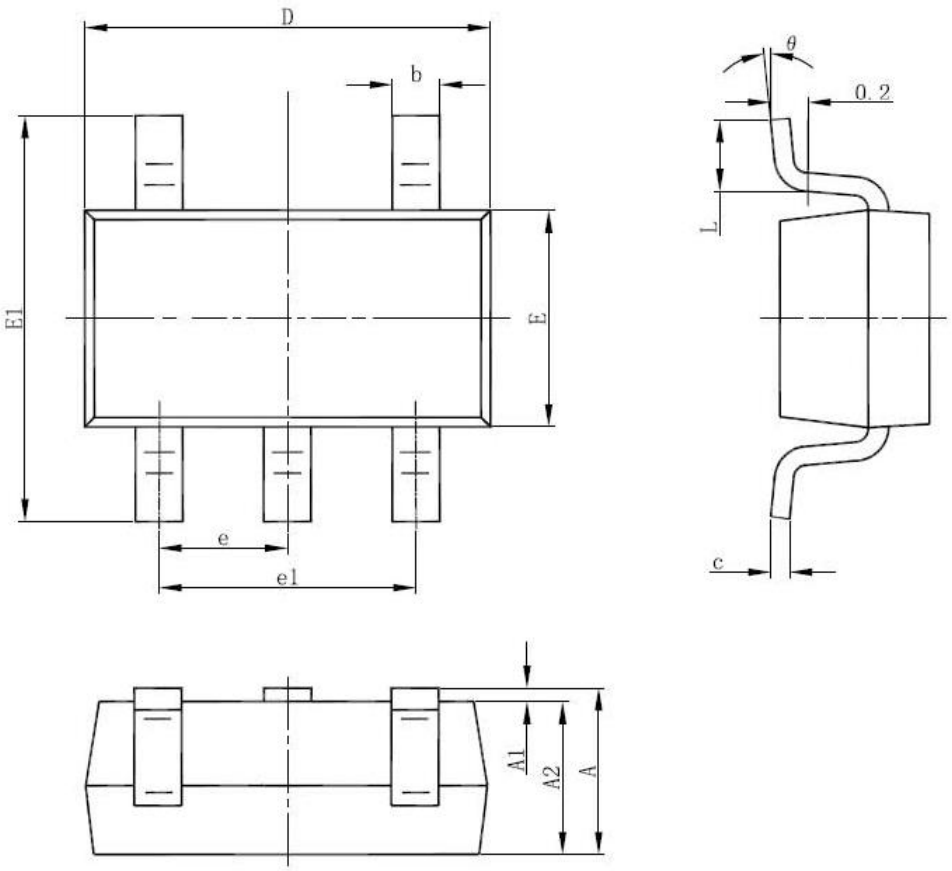


PSRR vs. Frequency



- **Package Information**

SOT-23-5L PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°