

## Features

- Input Voltage Range : 1.2V to 5.5V
- 15μ A Ground Current (I<sub>Q</sub>) at no Load
- PSRR = 75dB at 1kHz
- ±1.5% Output Accuracy
- Low (0.1μA) Shutdown Current
- Dropout Voltage : 0.15V at 300mA when V<sub>OUT</sub> ≥ 3V
- Support Fixed Output Voltage 0.8V, 1.0V, 1.05V, 1.1V, 1.2V, 1.25V, 1.3V, 1.5V, 1.8V, 1.85V, 2V, 2.5V, 2.8V, 2.85V, 3V, 3.1V, 3.3V, 3.45V
- Current Limit Protection
- Over Temperature Protection
- Output Active Discharge Function
- SOT23-5 Packages

## Applications

- CDM/GSM mobile phone
- PDAs /MP3
- Audio/Video equipment

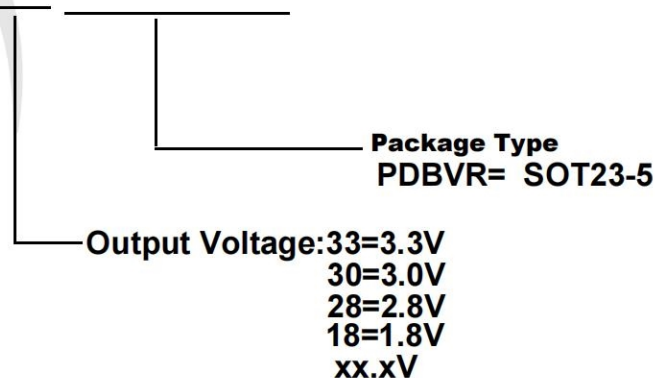
## General Description

This production is a low-dropout (LDO) voltage regulator with enable function that operates from a 1.2V to 5.5V supply. It provides up to 300mA of output current in miniaturized packaging.

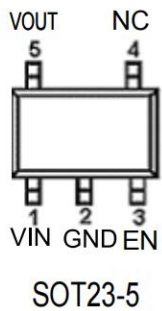
The feature of 15μA low quiescent current and 0.5μA shutdown current are ideal for the battery application with long service life. The other features include current limit function, over temperature protection and output discharge function.

## Ordering Information

# TPTLV73318 PDBVR

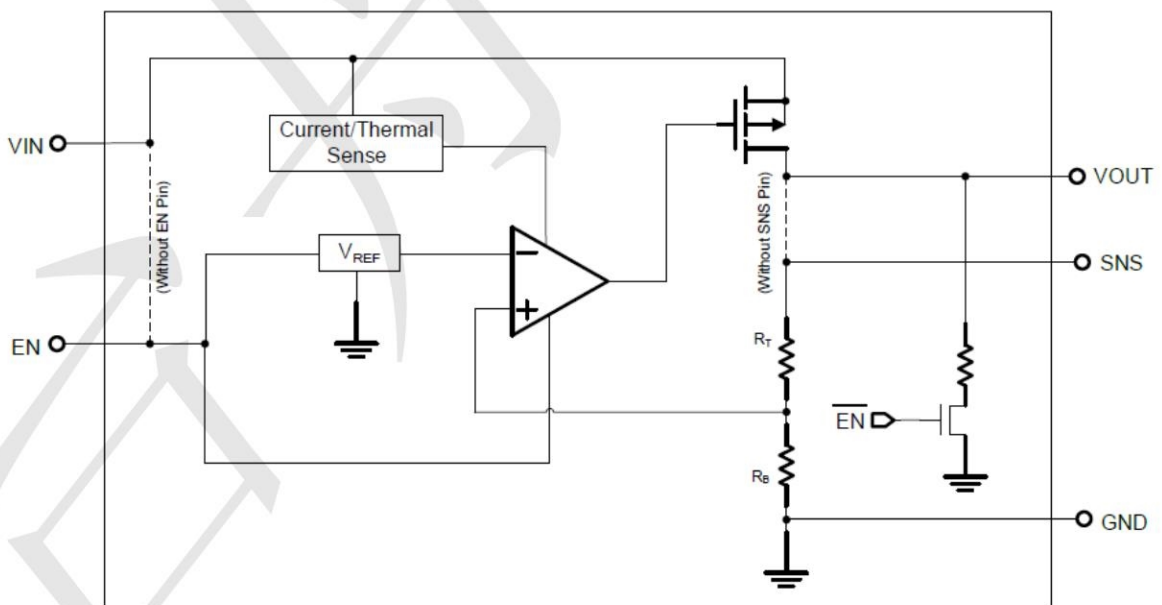


## Pin Configuration



Pin No	Pin Name	Pin Function
1	VIN	Input of Supply Voltage.
2	GND	Ground
3	EN	Enable Control Input.
4	NC	No Internal Connection.
5	VOUT	Output of the Regulator

## BLOCK DIAGRAM



### ABSOLUTE MAXIMUM RATINGS

VIN Pin to GND Pin Voltage .....	-0.3V to 6.5V
VOU <sub>T</sub> Pin and EN Pin to GND Pin Voltage .....	-0.3V to 6V
VOU <sub>T</sub> Pin to VIN Pin Voltage .....	-6V to 0.3V
Storage Temperature Range .....	-60°C~150°C
Lead Temperature (Soldering, 10 sec) .....	260°C
Junction Temperature .....	150°C
Operating Ambient Temperature Range T <sub>A</sub> .....	-40°C~85°C
Thermal Resistance Junction to Case, R <sub>θJC</sub>	
	SOT23-5 ..... 115°C/W
Thermal Resistance Junction to Ambient, R <sub>θJA</sub>	
	SOT23-5 ..... 250°C/W

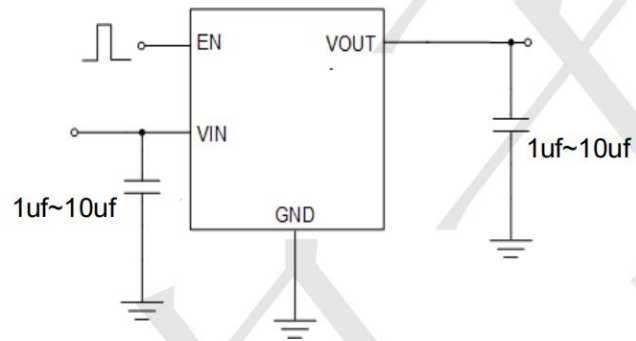
### Electrical Characteristics (T = 25°C unless otherwise noted)

(V<sub>OUT</sub> + 1 < V<sub>IN</sub> < 5.5V, T<sub>A</sub> = 25°C, unless otherwise specified)

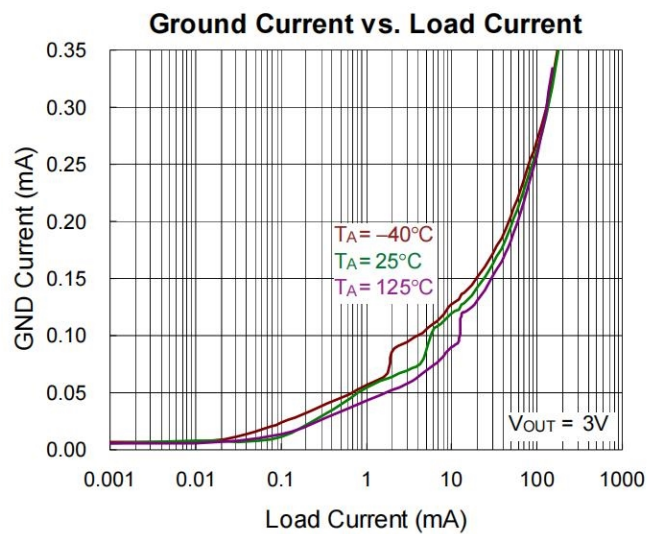
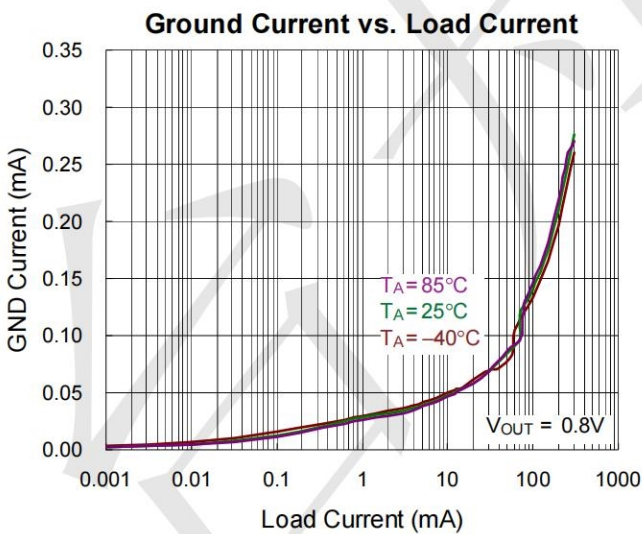
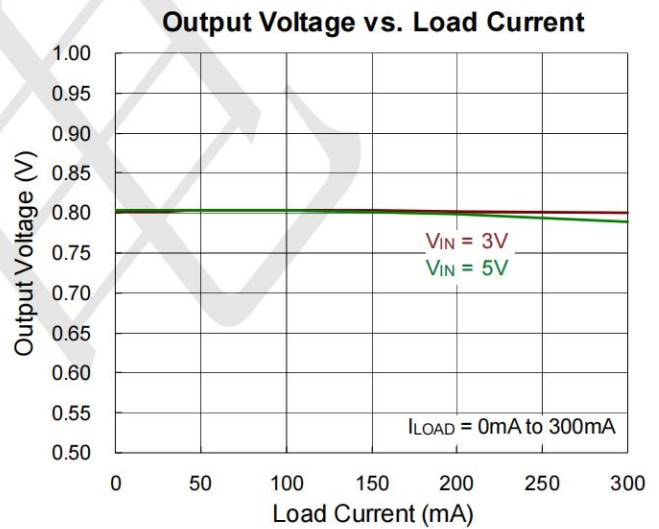
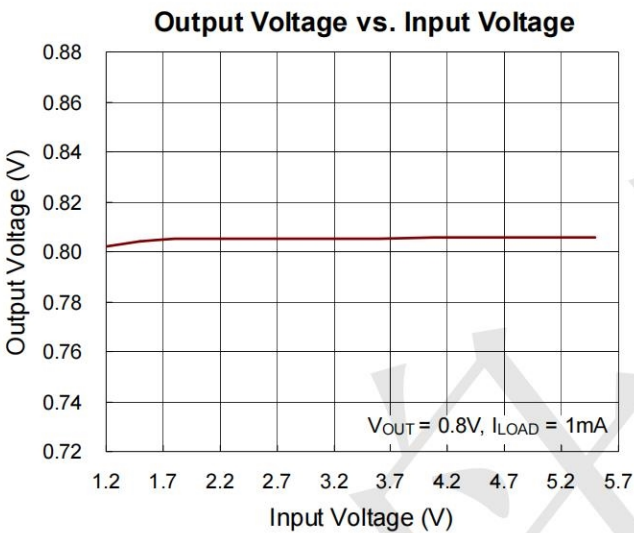
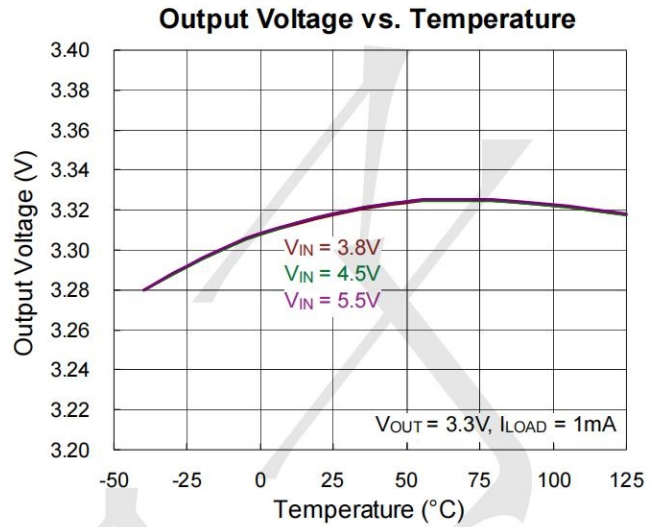
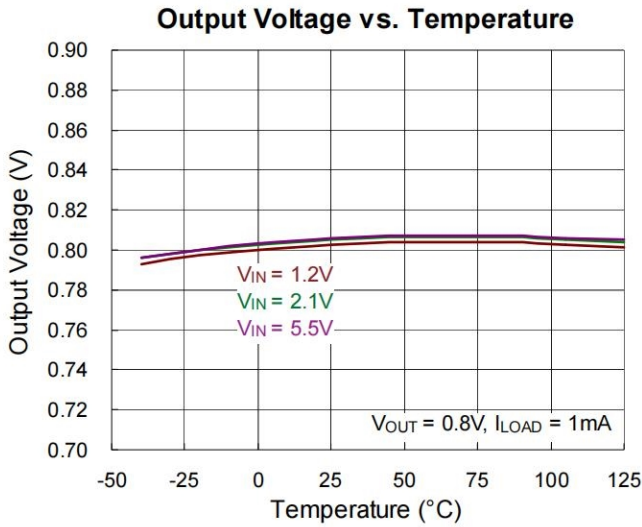
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Fixed Output Voltage Range	V <sub>OUT</sub>		0.8	--	3.45	V
DC Output Accuracy		I <sub>LOAD</sub> = 1mA	-2	--	2	%
Dropout Voltage (I <sub>LOAD</sub> = 300mA) (Note 5)	V <sub>DROP</sub>	0.8V ≤ V <sub>OUT</sub> < 1.05V	--	0.7	0.97	V
		1.05V ≤ V <sub>OUT</sub> < 1.2V	--	0.5	0.92	
		1.2V ≤ V <sub>OUT</sub> < 1.5V	--	0.4	0.57	
		1.5V ≤ V <sub>OUT</sub> < 1.8V	--	0.3	0.47	
		1.8V ≤ V <sub>OUT</sub> < 2.1V	--	0.24	0.33	
		2.1V ≤ V <sub>OUT</sub> < 2.5V	--	0.21	0.3	
		2.5V ≤ V <sub>OUT</sub> < 2.8V	--	0.18	0.25	
		2.8V ≤ V <sub>OUT</sub> < 3V	--	0.16	0.23	
Dropout Voltage (I <sub>LOAD</sub> = 200mA) (Note 6)	V <sub>DROP</sub>	1.8V ≤ V <sub>OUT</sub> < 2.1V	--	0.16	0.2	V
V <sub>CC</sub> Consumption Current	I <sub>Q</sub>	I <sub>LOAD</sub> = 0mA, V <sub>OUT</sub> ≤ 5.5V V <sub>IN</sub> ≥ V <sub>OUT</sub> + V <sub>DROP</sub>	--	15		μA

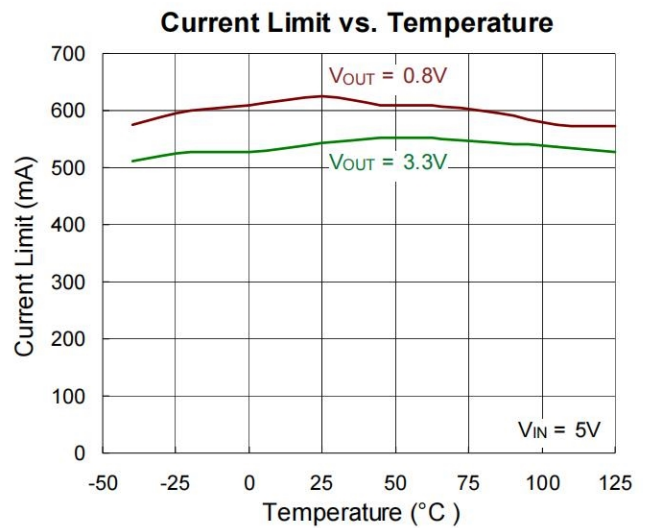
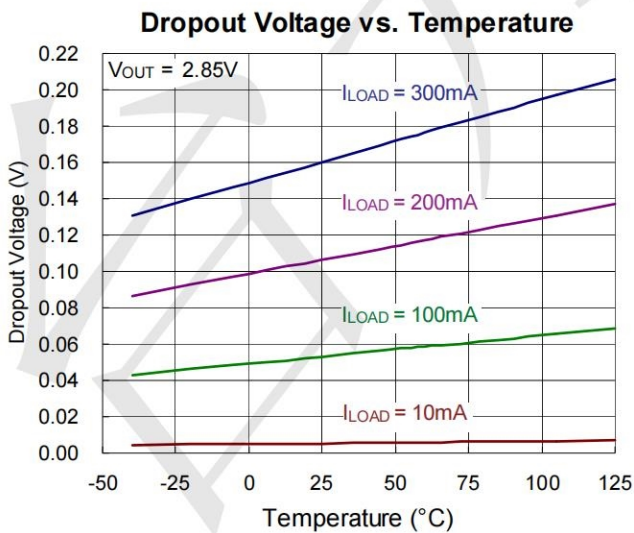
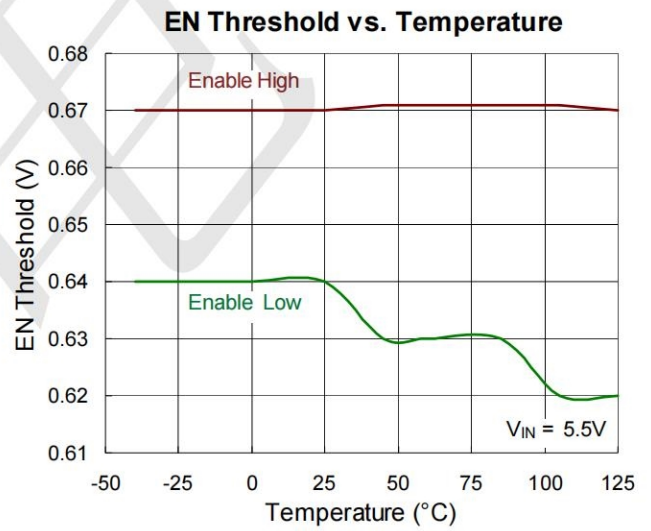
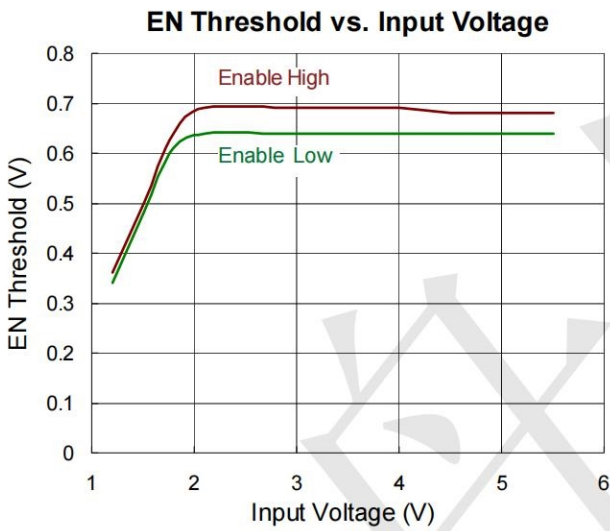
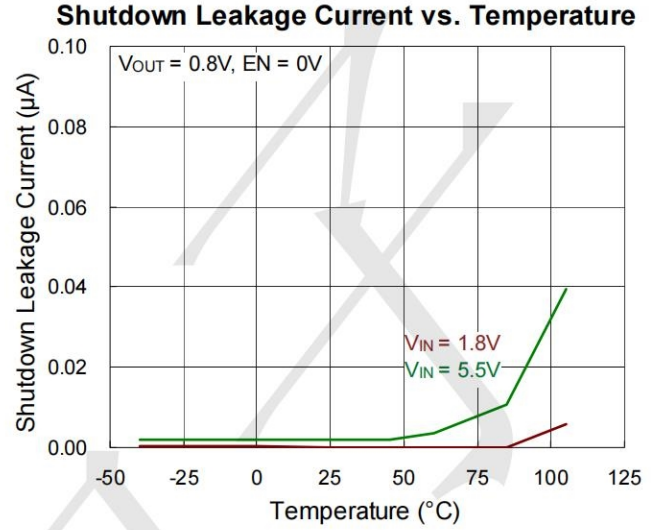
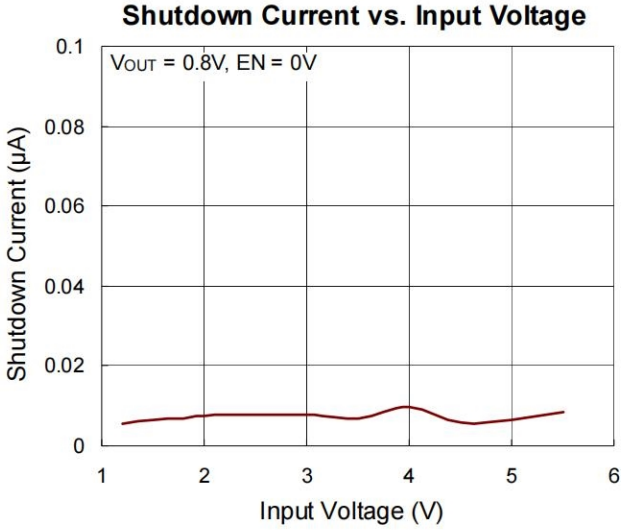
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit	
Shutdown GND Current (Note 7)		V <sub>EN</sub> = 0V	--	0.1	0.5	μA	
Shutdown Leakage Current (Note 7)		V <sub>EN</sub> = 0V, V <sub>OUT</sub> = 0V	--	0.1	0.5	μA	
EN Input Current	I <sub>EN</sub>	V <sub>EN</sub> = 5.5V	--	--	0.1	μA	
Line Regulation	ΔLINE	I <sub>LOAD</sub> = 1mA	1.2V ≤ V <sub>IN</sub> < 1.5V	--	0.3	0.6	%
			1.5V ≤ V <sub>IN</sub> < 1.8V	--	0.15	0.3	
			1.8V ≤ V <sub>IN</sub> ≤ 5.5V	--	0.13	0.35	
Load Regulation	ΔLOAD	1mA < I <sub>LOAD</sub> < 300mA	--	0.5	1	%	
Power Supply Rejection Ratio	PSRR	V <sub>IN</sub> = 3V, I <sub>LOAD</sub> = 50mA, C <sub>OUT</sub> = 1μF, V <sub>OUT</sub> = 2.5V, f = 1kHz	--	75	--	dB	
Output Voltage Noise		C <sub>OUT</sub> = 1μF, I <sub>LOAD</sub> = 150mA, BW = 10Hz to 100kHz, V <sub>IN</sub> = V <sub>OUT</sub> + 1V	V <sub>OUT</sub> = 0.8V	--	38	--	μV <sub>RMS</sub>
			V <sub>OUT</sub> = 1.2V	--	46	--	
			V <sub>OUT</sub> = 1.8V	--	48	--	
			V <sub>OUT</sub> = 3.3V	--	51	--	
Output Current Limit	I <sub>LIM</sub>	V <sub>OUT</sub> = 90% of V <sub>OUT(NOM)</sub>	350	600	--	mA	
Enable Threshold Voltage	H-Level	V <sub>ENH</sub>	V <sub>IN</sub> = 5V	0.5	0.7	0.9	V
	L-Level	V <sub>ENL</sub>	V <sub>IN</sub> = 5V	0.4	0.65	0.85	
Thermal Shutdown Temperature	T <sub>SD</sub>	I <sub>LOAD</sub> = 30mA, V <sub>IN</sub> ≥ 1.5V	--	150	--	°C	
Thermal Shutdown Hysteresis	ΔT <sub>SD</sub>		--	20	--	°C	
Discharge Resistance		EN = 0V, V <sub>OUT</sub> = 0.1V	--	80	--	Ω	

**Typical Application Circuit**

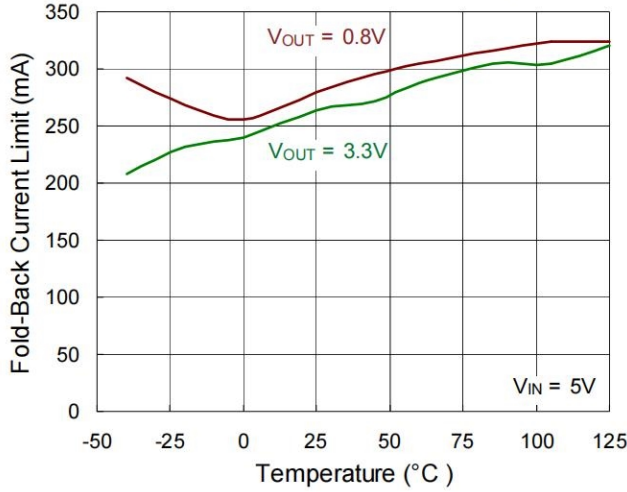


## Typical Operating Characteristics

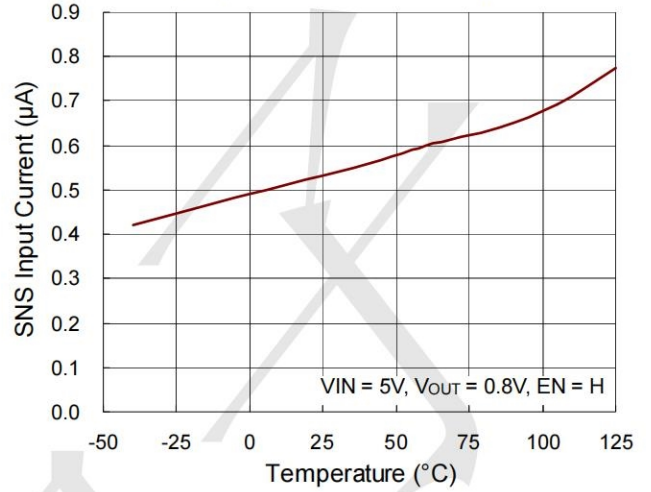




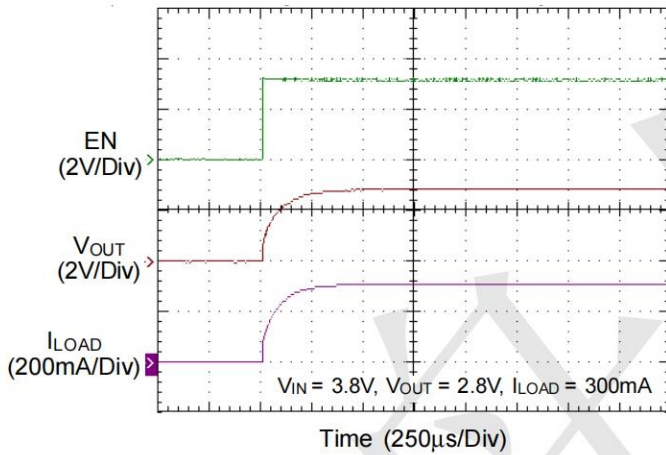
**Fold-Back Current Limit vs. Temperature**



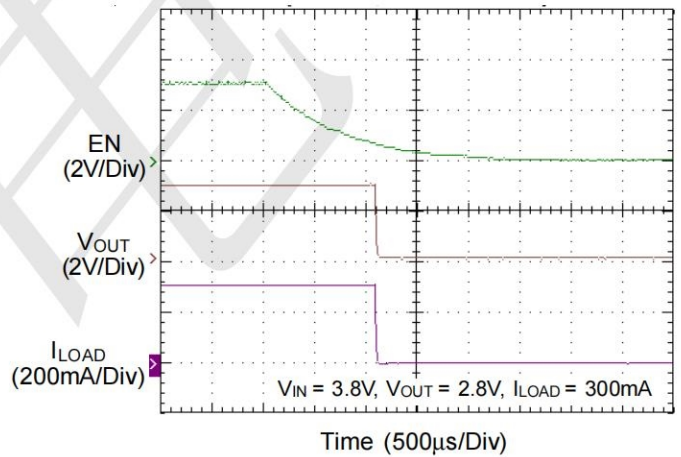
**SNS Input Current vs. Temperature**



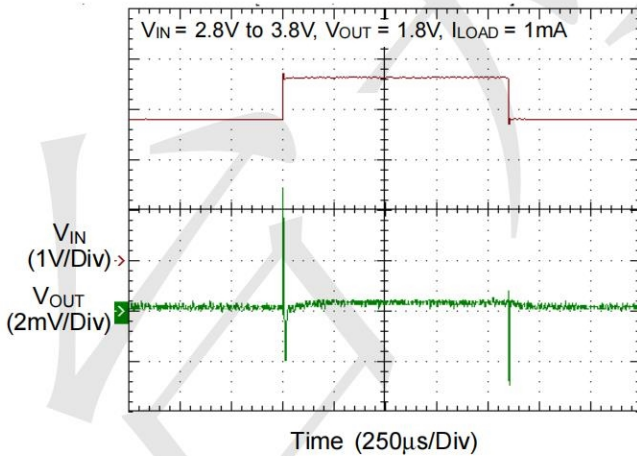
**Power On from EN**



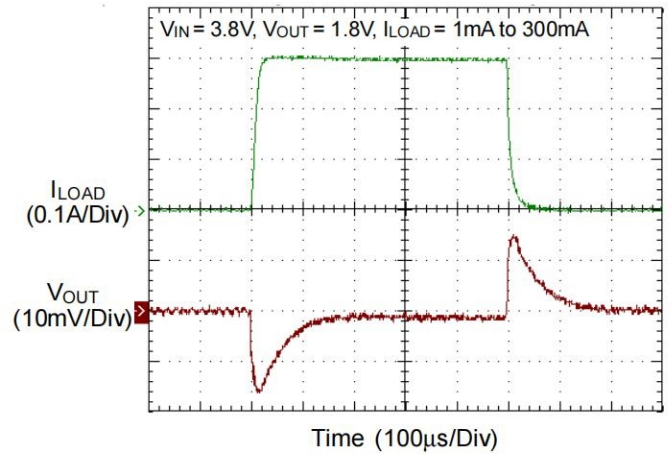
**Power Off from EN**



**Line Transient**

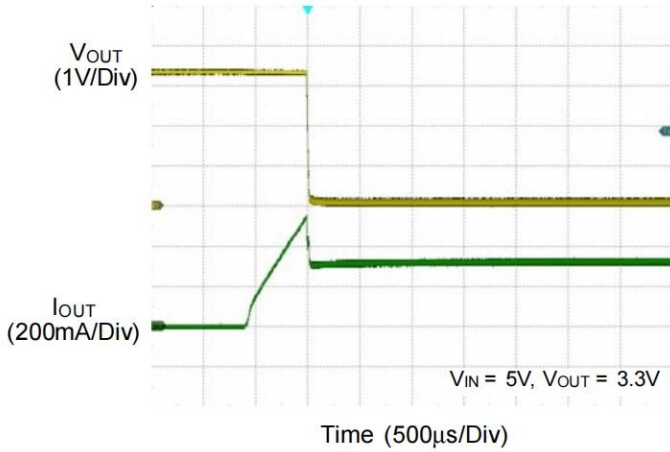


**Load Transient**

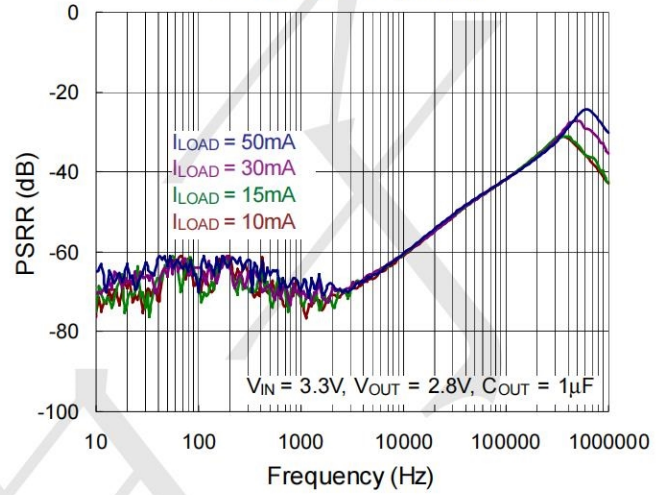




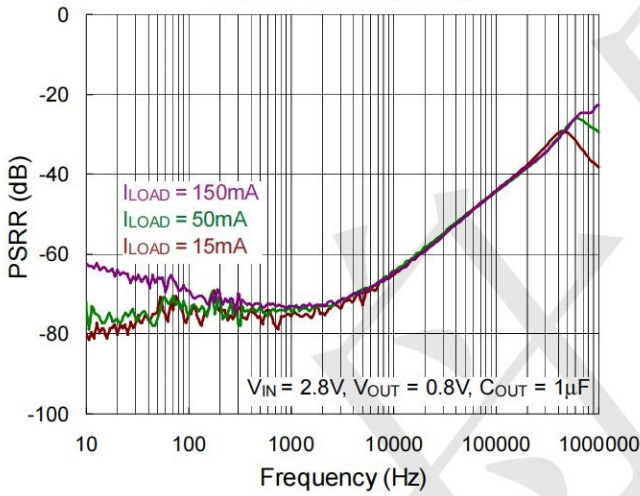
**Output Current Limit Protection**



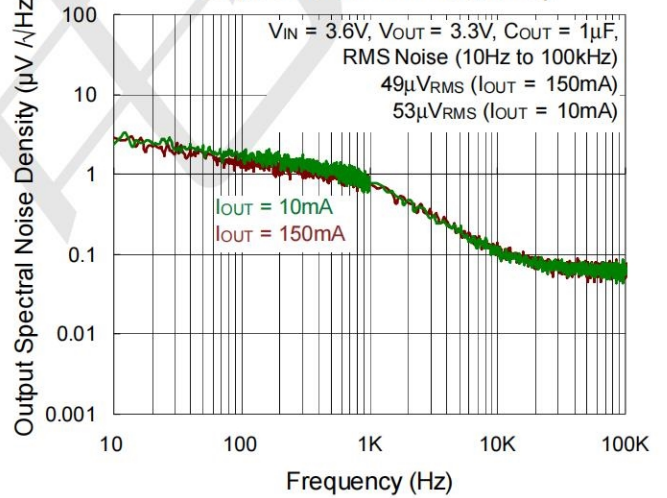
**PSRR vs. Frequency**



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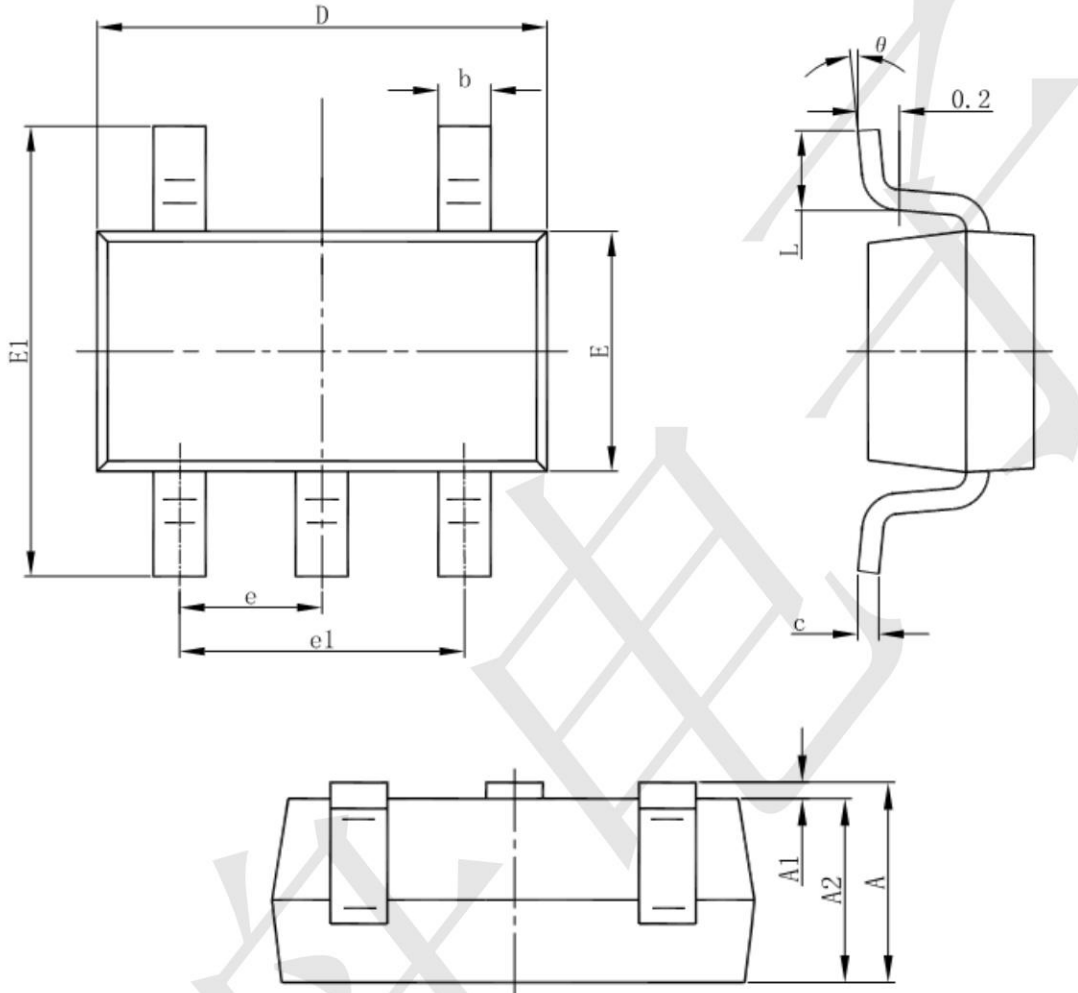


**Output Noise vs. Frequency**



**Package information**

SOT23-5



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°