

WL2805N

Low power consumption, CMOS LDO

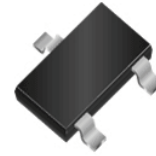
[Http://www.willsemi.com](http://www.willsemi.com)

Descriptions

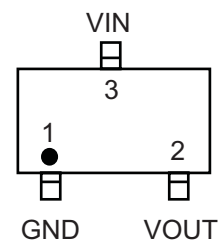
The WL2805N series are low dropout linear regulators and optimized to provide a high performance solution for battery power system to deliver low quiescent current. The devices offer a new level of cost effective performance in cellular phones, laptop and notebook computers, and other portable devices.

The WL2805N series are designed to make use of low cost ceramic capacitors which ensure the stability of the output current, and enhance the efficiency in order to prolong the battery life of those portable devices.

The WL2805N regulators are available in SOT-23-3L packages. Standard products are Pb-free and Halogen free products.



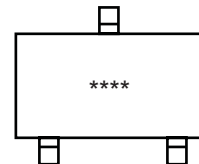
SOT-23-3L



Pin Configuration (Top View)

Features

- Quiescent current : 3 μ A Typ.
- Input voltage : 2.2V ~ 5.5V
- Output voltage : 1.2V ~ 3.3V
- Output current : 250mA @ $V_{OUT} > 2V$
- Output current : 100mA @ $V_{OUT} \leq 2V$
- Dropout voltage : 100mV @ 100mA
- Recommend capacitor : 1 μ F
- Operating Temperature : -40 ~ +85 °C
- Output short protection



For detail marking information please see page 8.

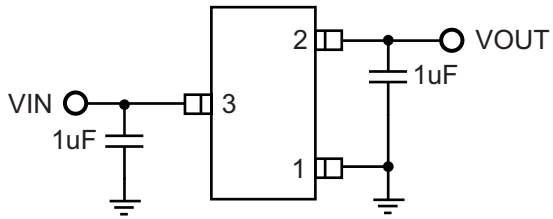
Marking

Applications

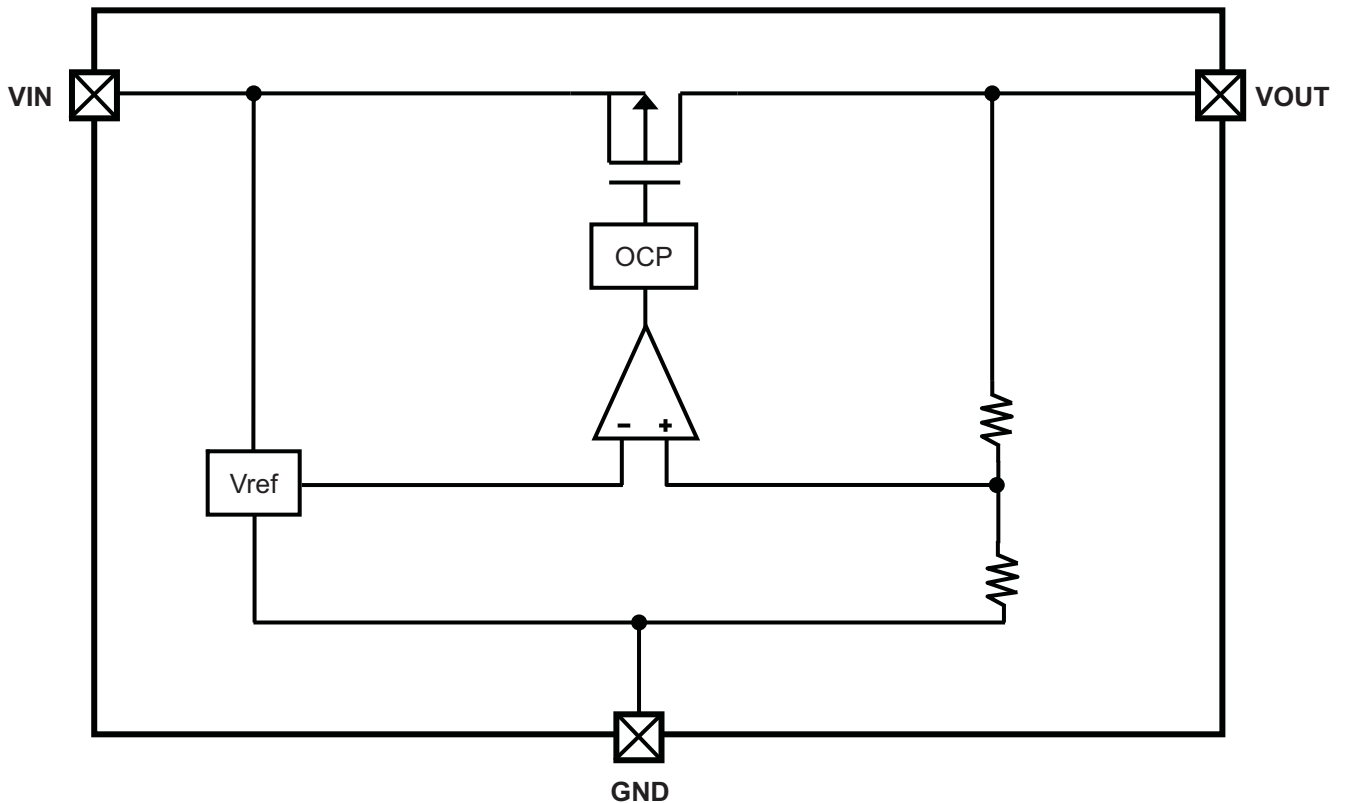
- MP3/MP4 Players
- Cell phones
- Bluetooth earphone
- Wireless mouse
- Others electronics devices

Order Information

For detail order information please see page 8.

Typical Applications
Pin Descriptions


PIN	Symbol	Description
1	GND	Ground
2	VOUT	Output
3	VIN	Input

Block Diagram


Absolute Maximum Ratings

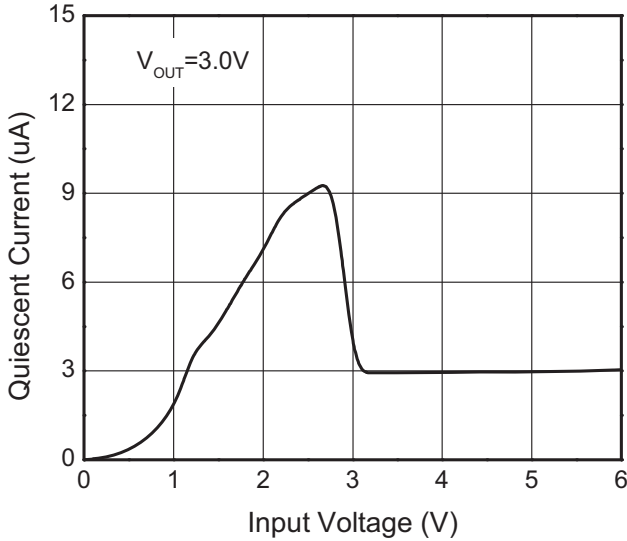
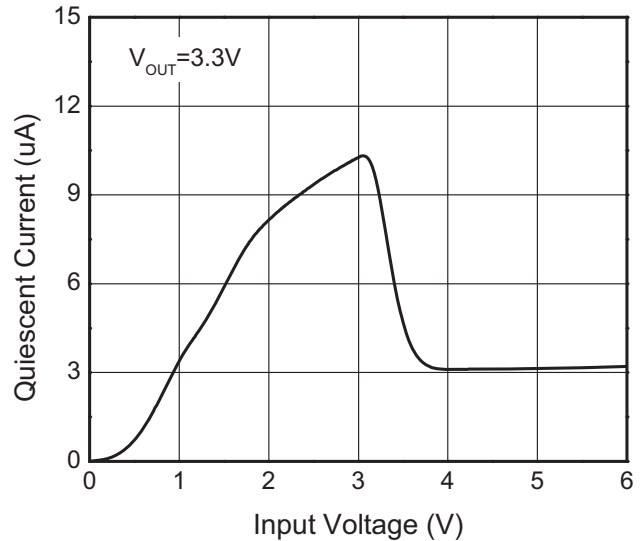
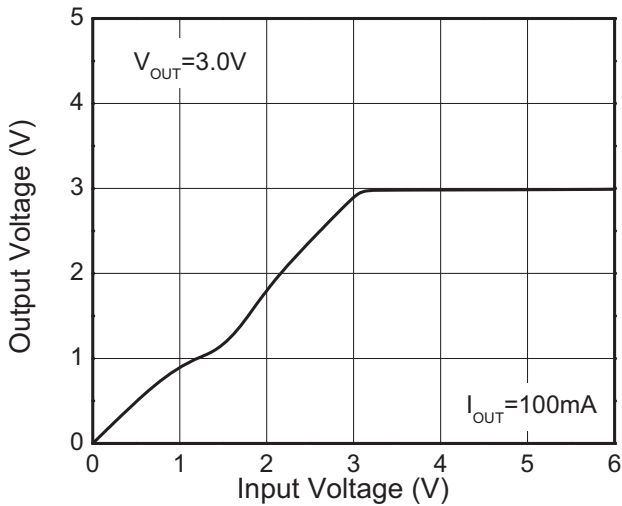
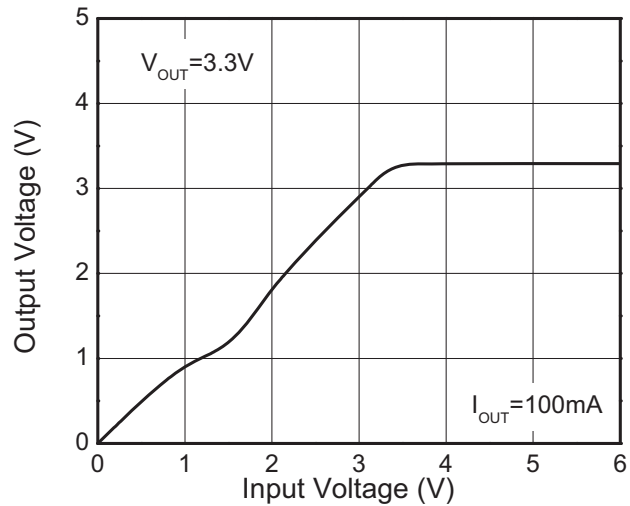
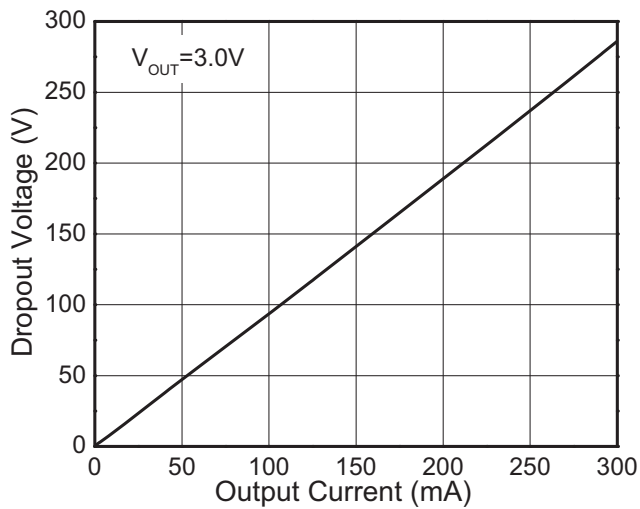
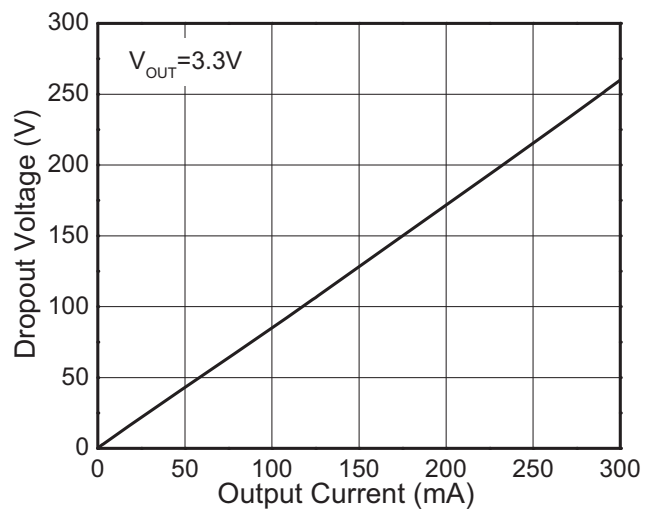
Parameter	Value	Unit
Power Dissipation	300	mW
V _{IN} Range	-0.3~6.0	V
V _{EN} Range	-0.3~V _{IN}	V
V _{OUT} Range	-0.3~V _{IN}	V
Lead Temperature	260	°C
Storage Temperature	-65 ~ 150	°C
Operating Junction Temperature	150	°C

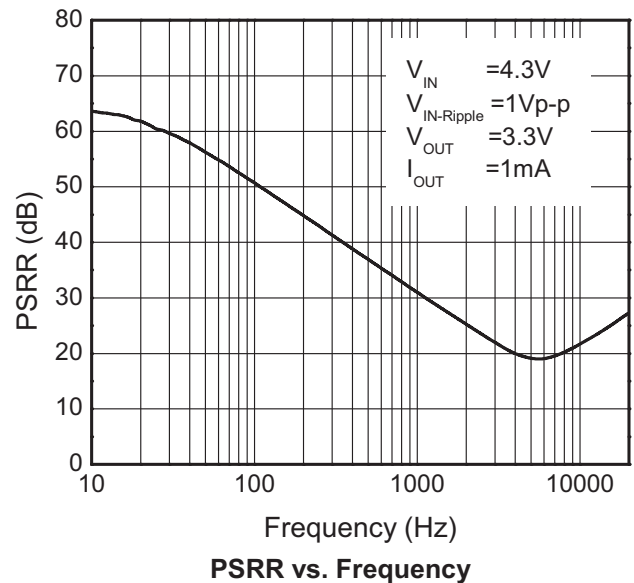
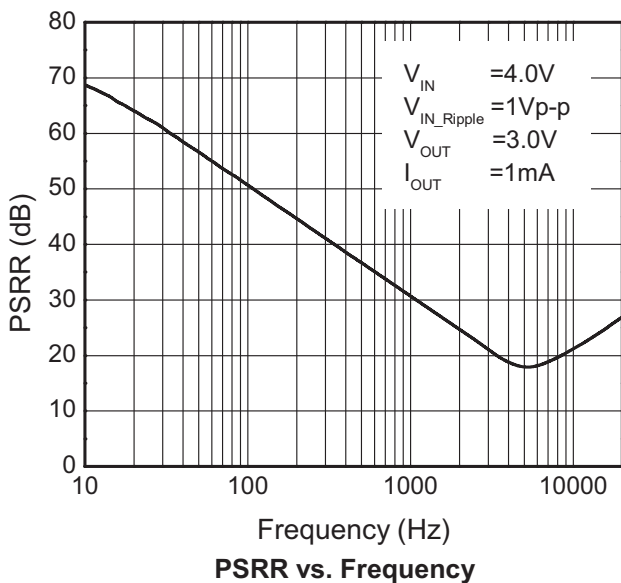
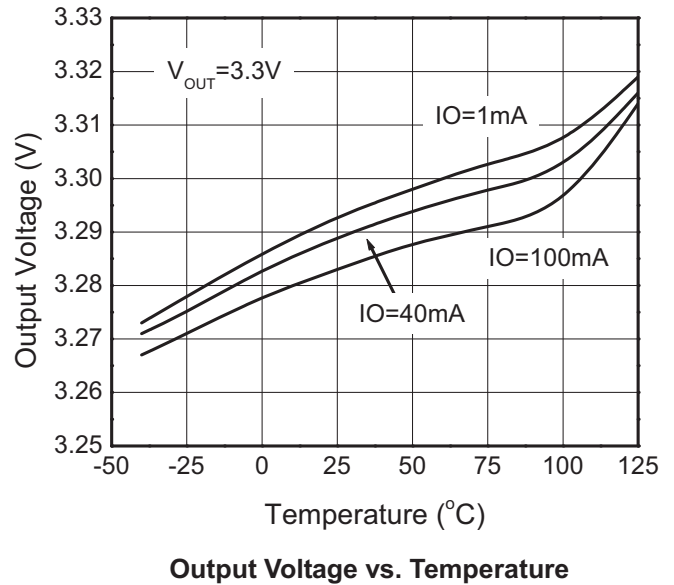
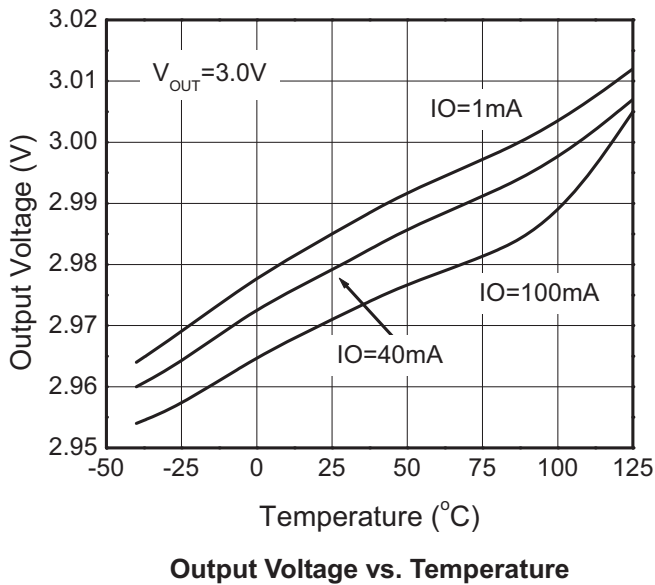
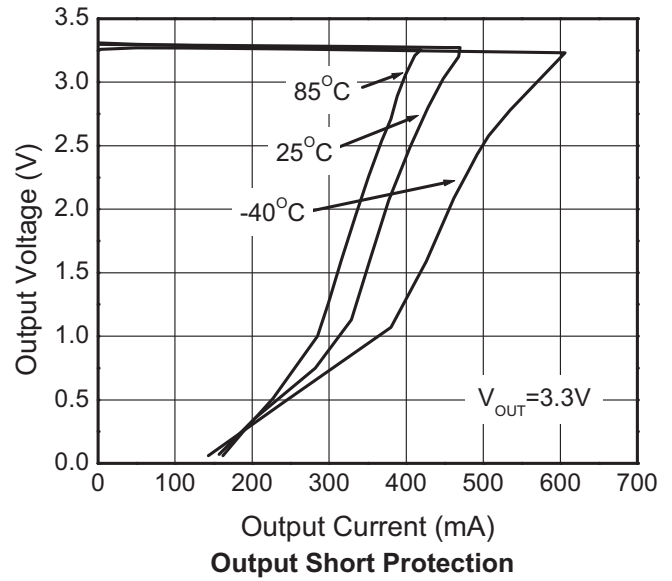
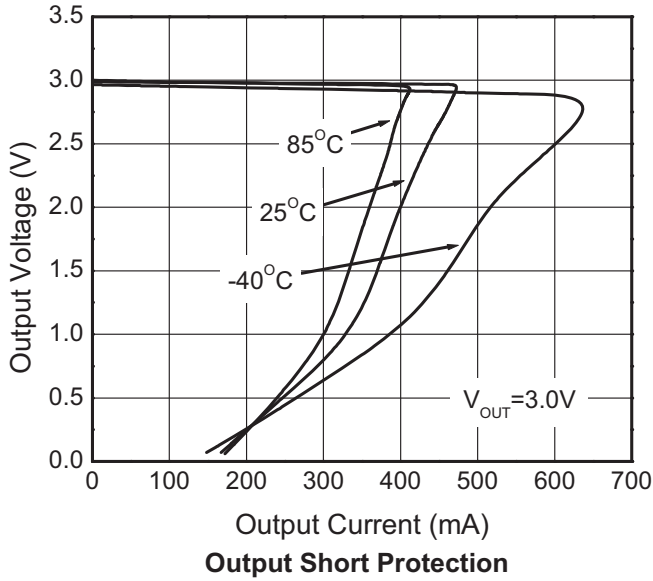
Operating Range

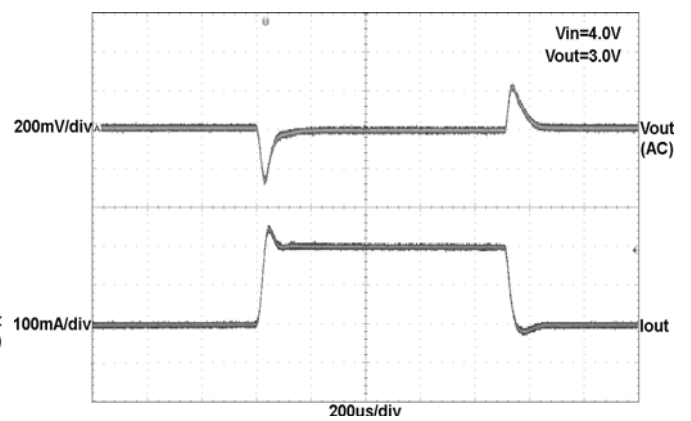
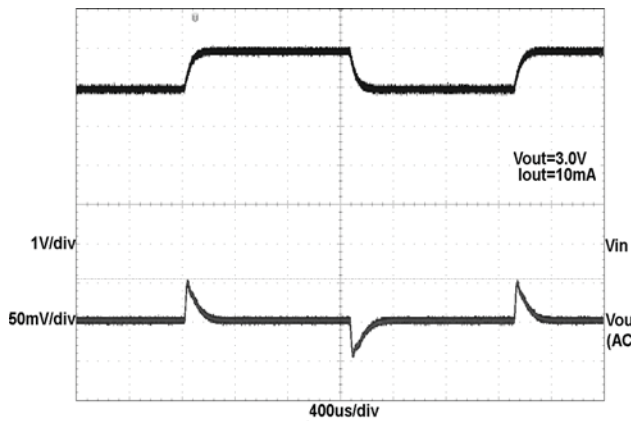
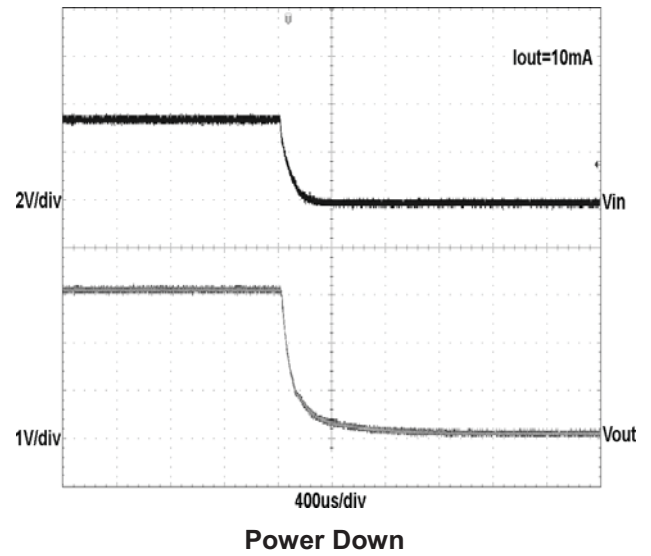
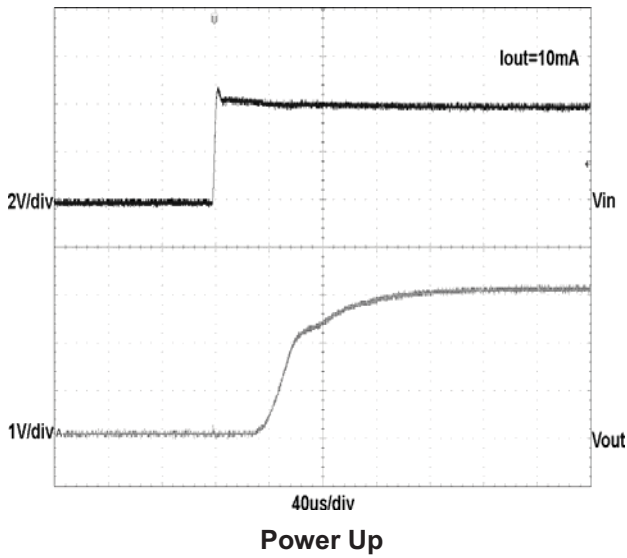
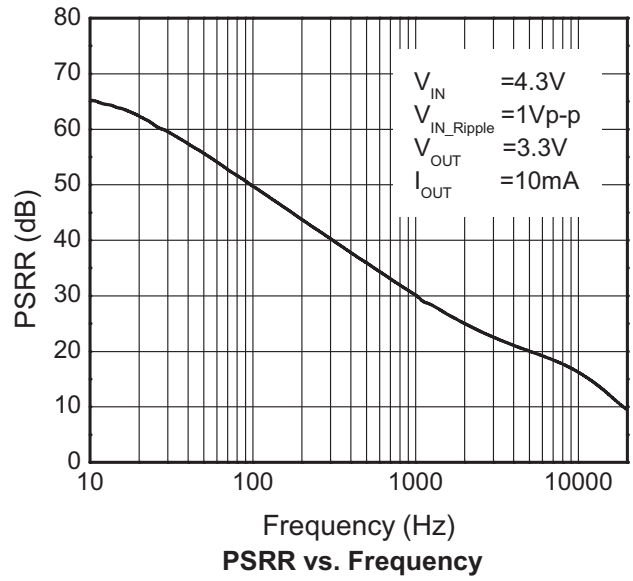
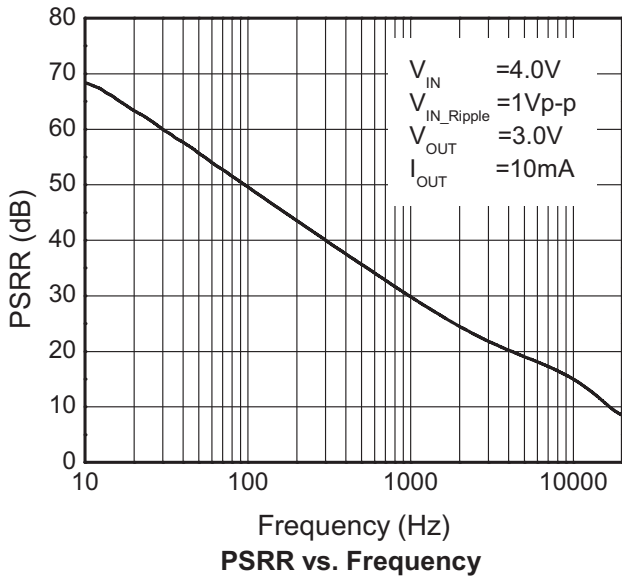
Parameter	Value	Unit
Thermal Resistance, R _{θJA}	417	°C/W
Input Voltage	2.2 ~ 5.5	V
Operating Temperature Range	-40~85	°C

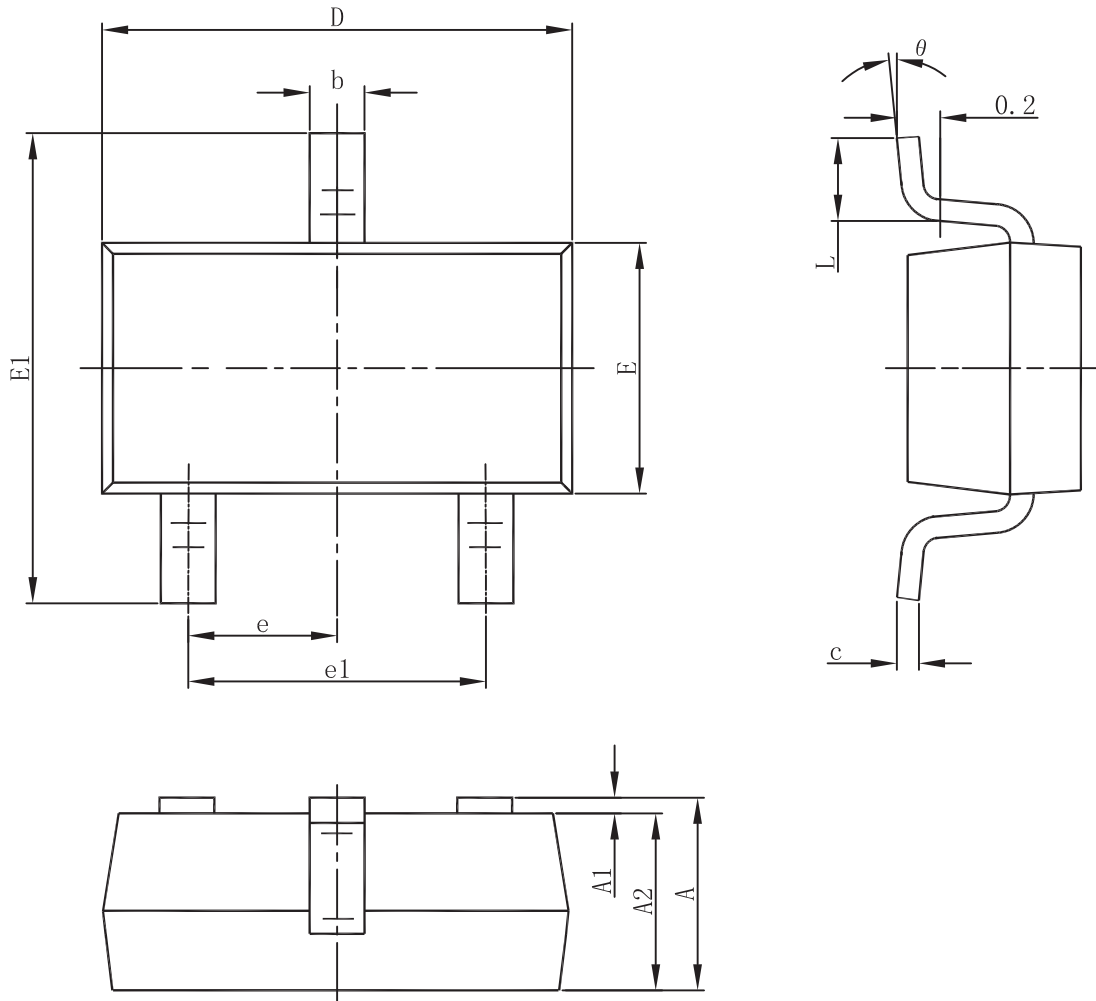
Electronics Characteristics (V_{IN} = V_{OUT} +1V, C_{IN}=C_{OUT}=1uF, T_A=25°C, unless otherwise noted)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Output Voltage	V _{OUT}	V _{IN} = V _{OUT} +1V , I _{OUT} =1mA	1.170	1.200	1.230	V
			1.270	1.300	1.330	
			1.470	1.500	1.530	
			1.764	1.800	1.836	
			2.450	2.500	2.550	
			2.744	2.800	2.856	
			2.940	3.000	3.060	
Output Current	I _{OUT}	V _{OUT} > 2V			250	mA
		V _{OUT} ≤ 2V			100	
Output short current limiter	I _{LIM}	V _{OUT} =GND		150		mA
Dropout Voltage	V _{DROP}	I _{OUT} =30mA, V _{OUT} =3.0V		30	100	mV
		I _{OUT} =100mA, V _{OUT} =3.0V		100	200	
Line Regulation	ΔV _{LINE}	V _{IN} =V _{OUT} +1V~6V, I _{OUT} =40mA			0.1	%/V
Load Regulation	ΔV _{LOAD}	I _{OUT} = 1~ 100mA		25		mV
Quiescent Current	I _Q	V _{IN} = V _{OUT} +1V, I _{OUT} =0A		3	5	uA
Power Supply Ripple Rejection	PSRR	V _{p-p} =1V, F=100Hz, I _{OUT} =10mA		-50		dB
		V _{p-p} =1V, F=1KHz, I _{OUT} =10mA		-30		dB

Typical Characteristics ($T_A=25^\circ\text{C}$, unless otherwise noted)

Quiescent Current vs. Input Voltage

Quiescent Current vs. Input Voltage

Output Voltage vs. Input Voltage

Output Voltage vs. Input Voltage

Dropout Voltage vs. Output Current

Dropout Voltage vs. Output Current





Package outline dimensions
SOT-23-3L


Symbol	Dimensions In Millimeters	
	Min.	Max.
A	1.050	1.250
A1	0.000	0.100
A2	1.050	1.150
b	0.300	0.500
c	0.100	0.200
D	2.820	3.020
E	1.500	1.700
E1	2.650	2.950
e	0.950(Basic)	
e1	1.800	2.000
L	0.300	0.600
θ	0°	8°

Order Information

Ordering No.	Vout (V)	Package	Operating Temperature	Marking	Shipping
WL2805N12-3/TR	1.2	SOT-23-3L	-40~+85°C	F12*	Tape and Reel, 3000
WL2805N13-3/TR	1.3	SOT-23-3L	-40~+85°C	F13*	Tape and Reel, 3000
WL2805N15-3/TR	1.5	SOT-23-3L	-40~+85°C	F15*	Tape and Reel, 3000
WL2805N18-3/TR	1.8	SOT-23-3L	-40~+85°C	F18*	Tape and Reel, 3000
WL2805N25-3/TR	2.5	SOT-23-3L	-40~+85°C	F25*	Tape and Reel, 3000
WL2805N28-3/TR	2.8	SOT-23-3L	-40~+85°C	F28*	Tape and Reel, 3000
WL2805N30-3/TR	3.0	SOT-23-3L	-40~+85°C	F30*	Tape and Reel, 3000
WL2805N33-3/TR	3.3	SOT-23-3L	-40~+85°C	F33*	Tape and Reel, 3000

Remark:
1. Marking:

- F** = Device code
- 12** = Voltage code
- *** = Month code (A~Z)

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