

Low power consumption LDO

AS7133L Series

General Description

AS7133L series are highly precise, low power consumption, positive voltage regulators manufactured using CMOS technologies. The series provides large currents with a significantly small dropout voltage.

The series is compatible with low ESR ceramic capacitors. The current limiter's foldback circuit also operates as a short protect for the output current limiter and the output pin.

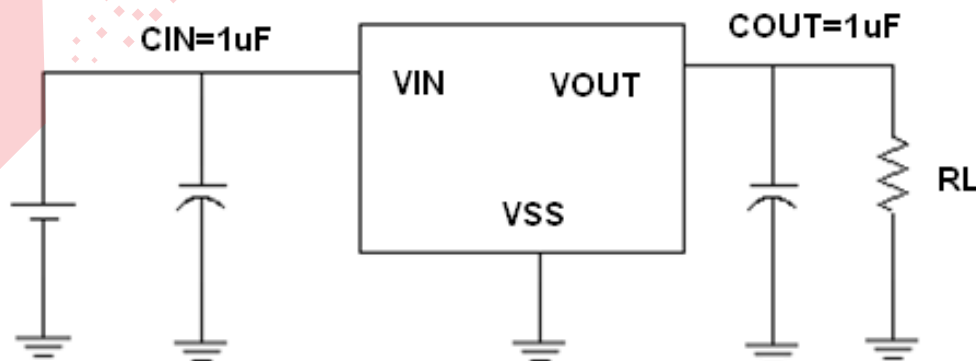
Features

- ✓ Highly Accurate: $\pm 1\%$
- ✓ Output voltage range: 3.3V
- ✓ Low power consumption: 4 μ A(TYP.)
- ✓ Large output current: 300mA ($V_{IN}=4.3V, V_{OUT}=3.3V$)
- ✓ Input voltage: up to 6 V
- ✓ Dropout voltage: 0.11V at 100mA and 0.24V at 200mA
- ✓ Excellent Input Stability
- ✓ Be available to regulator and reference voltage
- ✓ Packages: SOT23-3

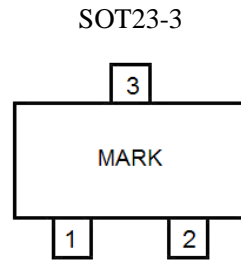
Typical Application

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

Typical Application Circuit



Pin Configuration



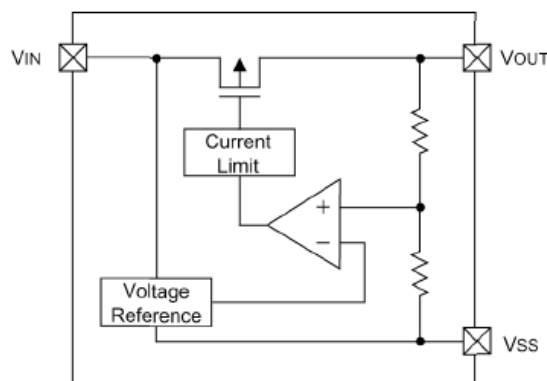
Pin Assignment

Pin Number	Pin Name	Functions
1	V _{SS}	Ground
2	V _{OUT}	Output
3	V _{IN}	Input

Absolute Maximum Ratings

Parameter	Symbol	Ratings	Units
Input Voltage	V _{IN}	6.5	V
Output Voltage	V _{OUT}	V _{SS} -0.3 ~ V _{out} +0.3	V
Output Current	I _{OUT}	390	mA
Operating Temperature Range	T _{OPR}	-25 ~ +85	°C
Storage Temperature Range	T _{STG}	-40 ~ +125	°C
Power Dissipation	P _D	300	mW

Block Diagram



Electrical Characteristics

AS7133L

($V_{IN} = V_{OUT} + 1V$, $C_{IN} = C_{OUT} = 1\mu F$, $T = 25^{\circ}C$, Unless otherwise stated)

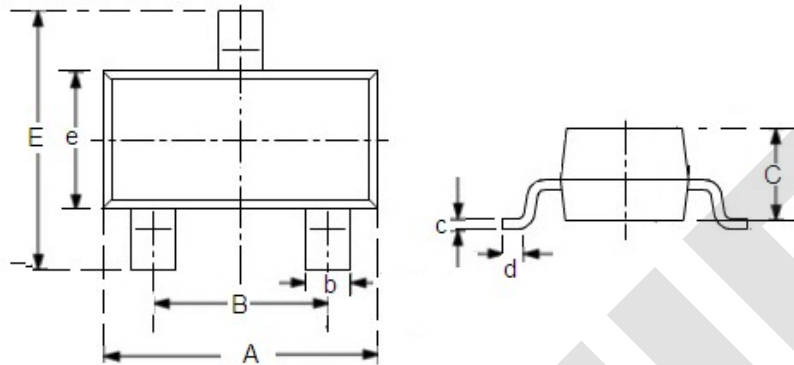
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Output Voltage	V_{OUT}	$I_{OUT} = 10mA$, $V_{IN} = V_{OUT} + 1V$	X0.99	3.30	X1.01	V
Input Voltage	V_{IN}				6	V
Maximum Output Voltage	I_{OUT_max}	$V_{IN} = V_{OUT} + 1V$		300	350	mA
Load Regulation	ΔV_{OUT}	$V_{IN} = V_{OUT} + 1V$, $1mA \leq I_{OUT} \leq 100mA$		9	18	mV
Dropout Voltage	V_{dif}	$I_{OUT} = 80mA$		100	120	mV
	V_{dif}	$I_{OUT} = 200mA$		240	260	
Supply Current	I_{SS}	$V_{IN} = V_{OUT} + 1V$		4	8	μA
Line Regulations	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \cdot V_{OUT}}$	$I_{OUT} = 40mA$ $V_{OUT} + 1V \leq V_{IN} \leq 6V$		0.07	0.2	%/V
Short Circuit Current	I_{short}	$V_{IN} = V_{OUT} (T) + 1V$ $V_{OUT} = V_{SS}$		30	60	mA
Over Current Protection	I_{limit}	$V_{IN} = V_{OUT} + 1V$		420	450	mA

Note :

- $V_{OUT} (T)$: Specified Output Voltage
- $V_{OUT} (E)$: Effective Output Voltage (i.e. The output voltage when “ $V_{OUT} (T) + 1.0V$ ” is provided at the V_{in} pin while maintaining a certain I_{OUT} value.)
- V_{dif} : $V_{IN1} - V_{OUT} (E)'$
 V_{IN1} : The input voltage when $V_{OUT} (E)'$ appears as input voltage is gradually decreased.
 $V_{OUT} (E)'$: A voltage equal to 98% of the output voltage whenever an amply stabilized $I_{OUT} \{ V_{OUT} (T) + 1.0V \}$ is input.

Packaging Information

SOT23-3



DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	2.7	3.1	0.1063	0.122
B	1.7	2.1	0.0669	0.0827
b	0.35	0.5	0.0138	0.0197
C	1.0	1.2	0.0394	0.0472
c	0.1	0.25	0.0039	0.0098
d	0.2	-	0.0079	-
E	2.6	3.0	0.1023	0.1181
e	1.5	1.8	0.059	0.0708

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