

ILC7362

SOT-23 CMOS Negative LDO



General Description

100mA negative LDO in SOT-23 package.

This CMOS device regulates a negative supply down to a fixed voltage level at $\pm 2\%$ accuracy.

It offers exceptional LDO performance of 120mV dropout at 50mA current levels.

The device also comes in a 3-lead SOT-89 package, for a number of voltage and current offerings.

Features

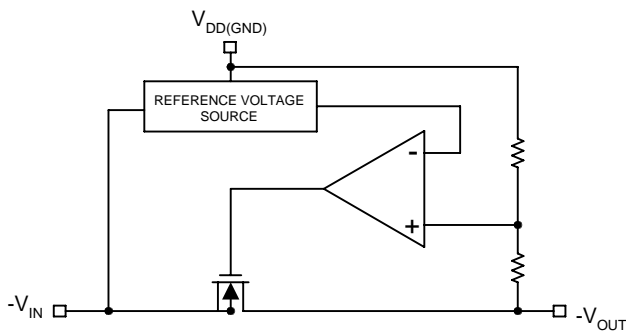
- All-CMOS design in SOT-23 and SOT-89 packages gives optimal size and power performance
- $\pm 2\%$ precision outputs
- 3 μ A of Iq
- Package and Voltage options allow:

100mA-5V Regulator
 50mA-3V Regulator
 100mA-5V to -3V Converter
 50mA-5V to -3V Converter

Applications

- Battery-powered Equipment
- Reference voltage sources
- Portable Cameras and Video Recorders
- Power Failure Detection
- PDAs

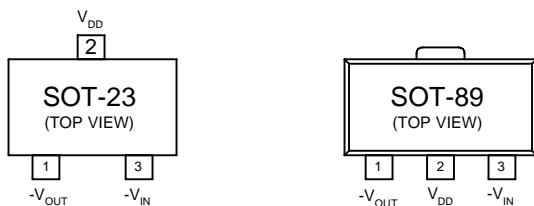
Block Diagram



Ordering Information

ILC7362CP-50	100mA-5V Regulator SOT-89 Package
ILC7362CP-30	100mA-5V to -3V Converter, or 50mA-5V Regulator SOT-89 Package
ILC7362CM-30	50mA-5V to -3V Converter SOT-23 Package

Pin-Package Configurations



*Standard product offering comes in tape & reel, quantity 3000 per reel, orientation right for SOT-23, quantity 1000 per reel, orientation right for SOT-89.

Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$)

Parameter	Symbol	Ratings	Units
Input Voltage	V_{IN}	-12	V
Output Current	I_{OUT}	200	mA
Output Voltage	V_{OUT}	$-V_{DD}-0.3 \sim V_{IN}+0.3$	V
Continuous Total Power Dissipation	SOT-23	P_D	150
	SOT-89		500
Operating Ambient Temperature	T_{opr}	-30~+85	$^\circ\text{C}$
Storage Temperature	T_{stg}	-40~+125	$^\circ\text{C}$

Electrical Characteristics ILC7362CP-50

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Output Voltage	V_{OUT}	$I_{OUT} = 20\text{mA}, V_{IN} = -7.0\text{V}$	-4.90	-5.0	-5.10	V
Maximum Output Current	I_{OUTmax}	$V_{IN} = -7.0\text{V}, V_{OUT} \geq -4.5\text{V}$	100			mA
Load Stability	ΔV_{OUT}	$V_{IN} = -7.0\text{V}, 1\text{mA} \leq I_{OUT} \leq 50\text{mA}$		40	80	mV
Input/Output Voltage Differential	V_{dif}	$I_{OUT} = 50\text{mA}$ $I_{OUT} = 100\text{mA}$		120 380	300 600	mV
Supply Current	I_{SS}	$V_{IN} = 7.0\text{V}$		3.0	7.0	μA
Input Stability	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \cdot V_{OUT}}$	$I_{OUT} = 20\text{mA}$ $-7.0 \leq V_{IN} \leq -10.0\text{V}$		0.1	0.3	%/V
Input Voltage	V_{IN}				10.0	V
Output Voltage Temperature Characteristics	$\frac{\Delta V_{OUT}}{\Delta T_{opr} \cdot V_{OUT}}$	$I_{OUT} = 20\text{mA}$ $-30^\circ\text{C} \leq T_{opr} \leq 80^\circ\text{C}$		± 100		ppm/ $^\circ\text{C}$

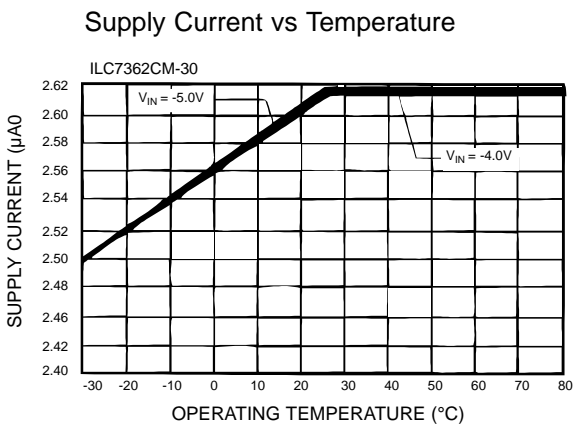
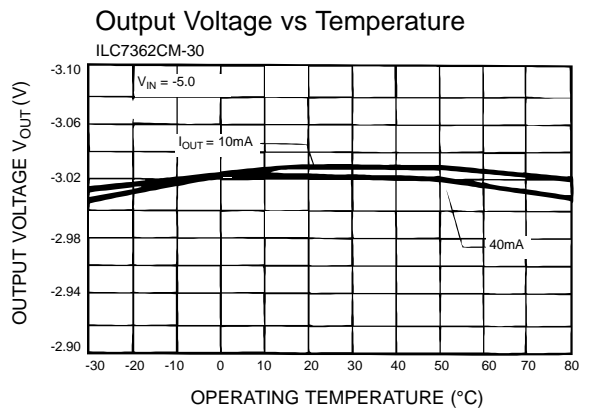
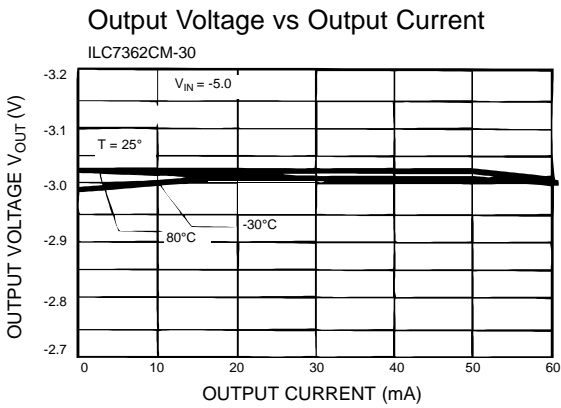
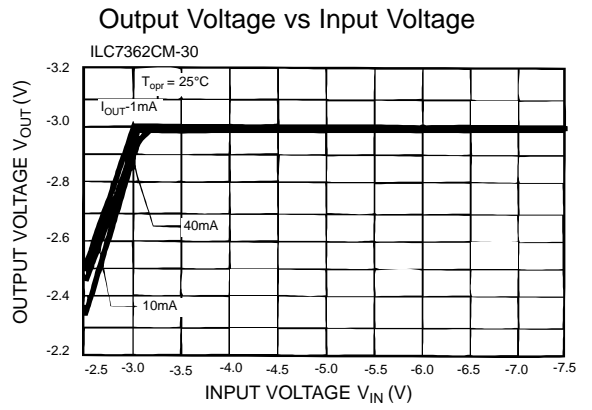
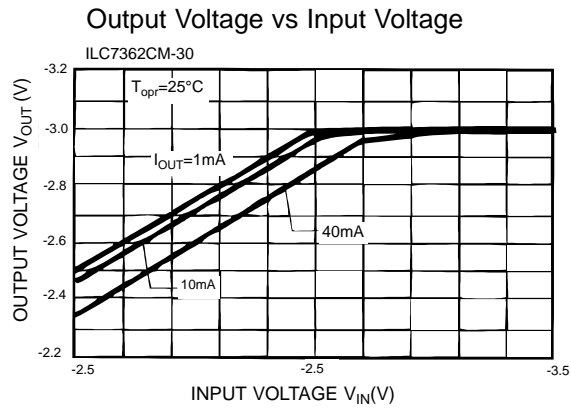
Note:

- V_{OUT} means the output voltage when “ $V_{OUT}-2.0\text{V}$ ” is provided at the V_{IN} pin while maintaining a certain I_{OUT} value.
- V_{dif} is defined as “ $|V_{IN}| - |V_{OUT}|$ ”.
- I_{OUTmax} = This is specified for SOT-89 package. For SOT-23, it is limited by continuous total power dissipation.

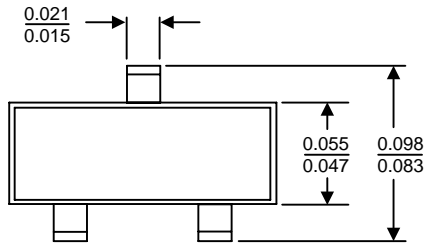
Electrical Characteristics ILC7362CP-30

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Output Voltage	V_{OUT}	$I_{OUT} = 20\text{mA}$, $V_{IN} = -5.0\text{V}$	-2.92	-3.0	-3.06	V
Maximum Output Current	$I_{OUT (MAX)}$	$V_{IN} = -5.0\text{V}$, $V_{OUT} \geq -2.7\text{V}$	100			mA
Load Stability	ΔV_{OUT}	$V_{IN} = -5.0\text{V}$, $1\text{mA} \leq I_{OUT} \leq 40\text{mA}$		40	80	mV
Input/Output Voltage Differential	V_{dif}	$I_{OUT} = 40\text{mA}$ $I_{OUT} = 80\text{mA}$		120 380	300 600	mV
Supply Current	I_{SS}	$V_{IN} = -5.0\text{V}$		2.5	6.0	μA
Input Stability	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \cdot V_{OUT}}$	$I_{OUT} = 20\text{mA}$ $-5.0\text{V} \leq V_{IN} \leq -10.0\text{V}$		0.1	0.3	%/V
Input Voltage	V_{IN}				-10.0	V
Output Voltage Temperature Characteristics	$\frac{\Delta V_{OUT}}{\Delta T_{opr} \cdot V_{OUT}}$	$I_{OUT} = 20\text{mA}$ $-30^{\circ}\text{C} \leq T_{opr} \leq 80^{\circ}\text{C}$		± 100		ppm/ $^{\circ}\text{C}$

Typical Performance Characteristics *General conditions for all curves; 4.7µF on output*

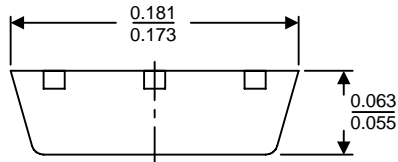
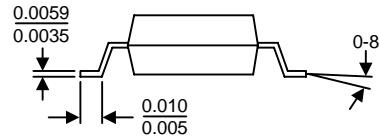
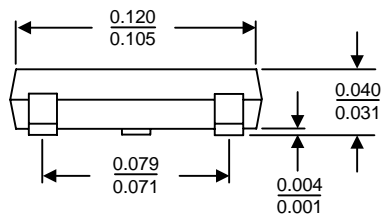


Packaging Information



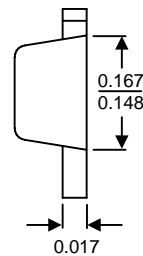
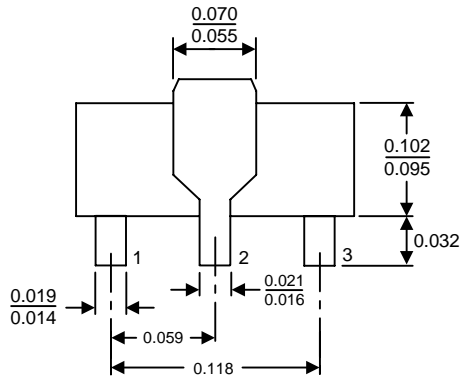
SOT-23

All dimensions in inches



SOT-89

All dimensions in inches



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2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.