

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

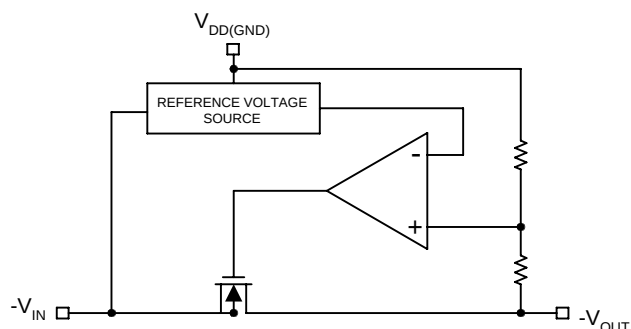
- All-CMOS design in SOT-23 and SOT-89 packages gives optimal size and power performance
- $\pm 2\%$ precision outputs
- $3\mu\text{A}$ of I_q
- Package and Voltage options allow:

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

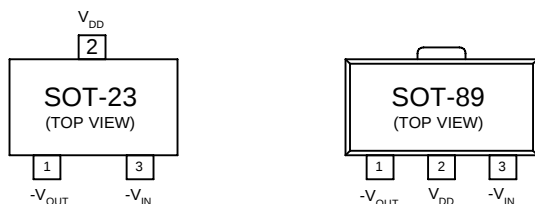
Applications

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

Block Diagram



Pin-Package Configurations



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

*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	mW
	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/ $^\circ\text{C}$

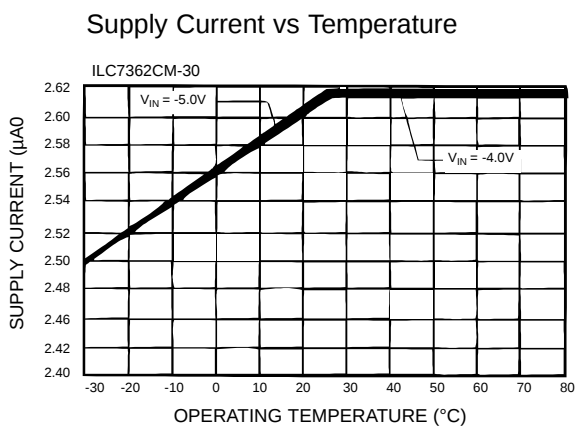
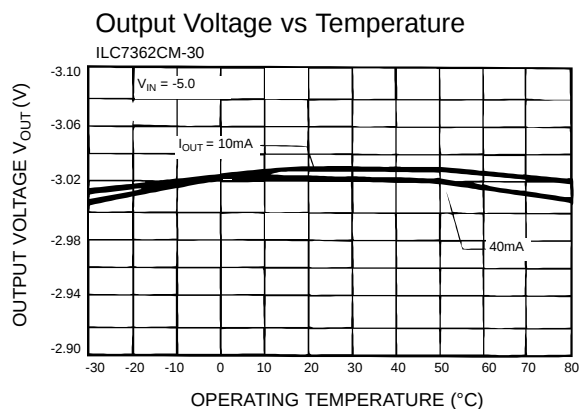
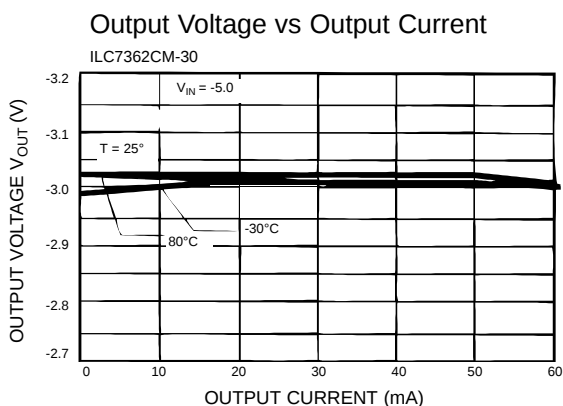
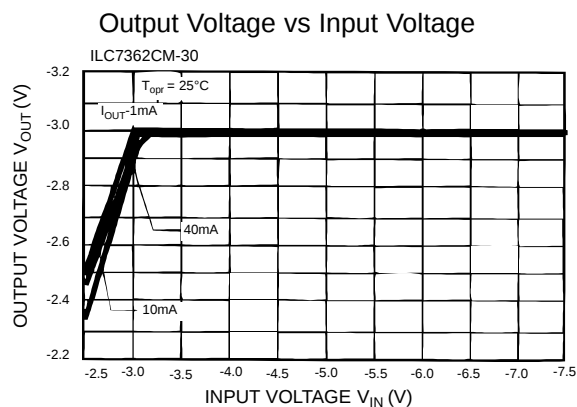
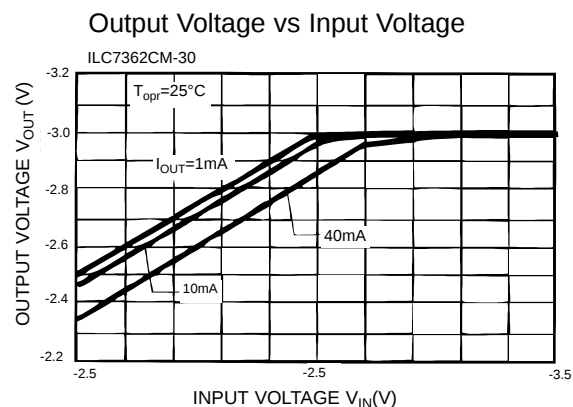
Note:

1. 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.
2. V_{dif} is defined as " $|V_{IN}| - |V_{OUT}|$ ".
3. I_{OUTmax} = This is specified for SOT-89 package. For SOT-23, it is limited by continuous total power dissipation.

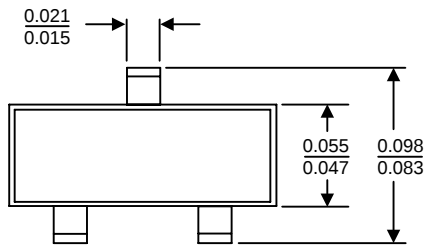
Electrical Characteristics ILC7362CP-30

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; 4.7 μ F on output*

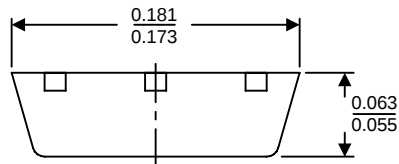
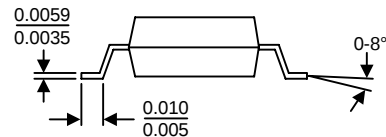
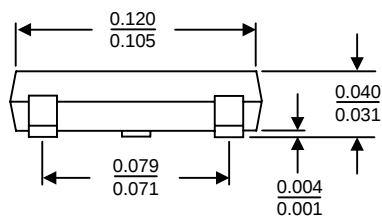


Packaging Information



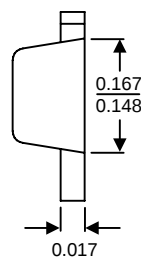
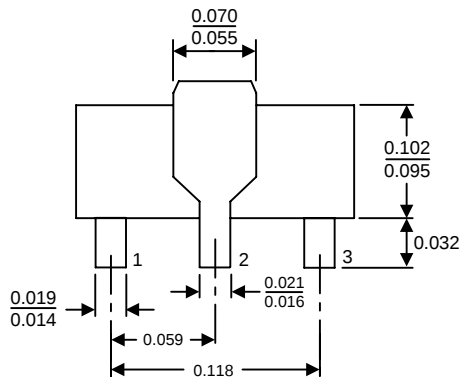
SOT-23

All dimensions in inches



SOT-89

All dimensions in inches



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