

ILC7362

SOT-23 CMOS Negative LDO

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

Description

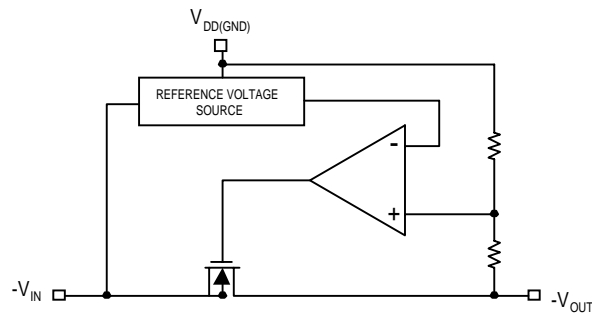
100mA negative LDO in SOT-23 package.

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

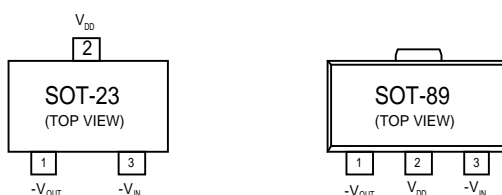
It offers exceptional LDO performance of 120mV dropout at 50mA current levels.

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

Block Diagram



Pin Assignments



Absolute Maximum Ratings (T_A = 25°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~V _{IN} +0.3	V
Continuous Total SOT-23 Power Dissipation	SOT-23	150	mW
	SOT-89	500	
Operating Ambient Temperature	T _{opr}	-30~+85	°C
Storage Temperature	T _{stg}	-40~+125	°C

Electrical Characteristics ILC7362CP-50

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Output Voltage	V _{OUT}	I _{OUT} = 20mA, V _{IN} = -7.0V	-4.90	-5.0	-5.10	V
Maximum Output Current	I _{OUTmax}	V _{IN} = -7.0V, V _{OUT} ≥ -4.5V	100			mA
Load Stability	ΔV _{OUT}	V _{IN} = -7.0V, 1mA ≤ I _{OUT} ≤ 50mA		40	80	mV
Input/Output Voltage Differential	V _{dif}	I _{OUT} = 50mA I _{OUT} = 100mA		120 380	300 600	mV
Supply Current	I _{SS}	V _{IN} = -7.0V		3.0	7.0	μA
Input Stability	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \cdot V_{OUT}}$	I _{OUT} = 20mA -7.0 ≤ V _{IN} ≤ -10.0V		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} = 20mA -30°C ≤ T _{opr} ≤ 80°C		±100		ppm/°C

Note:

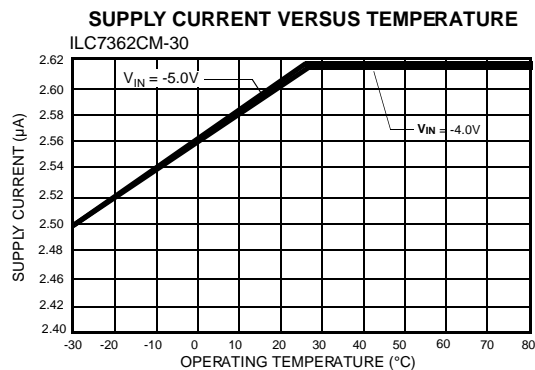
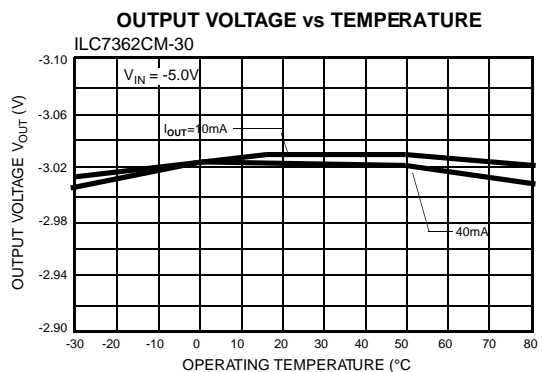
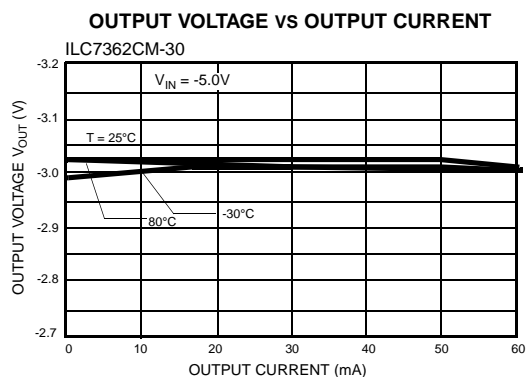
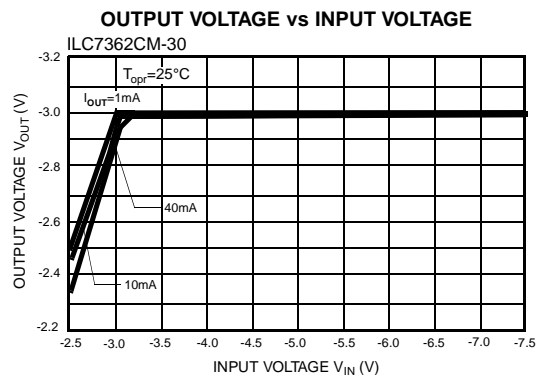
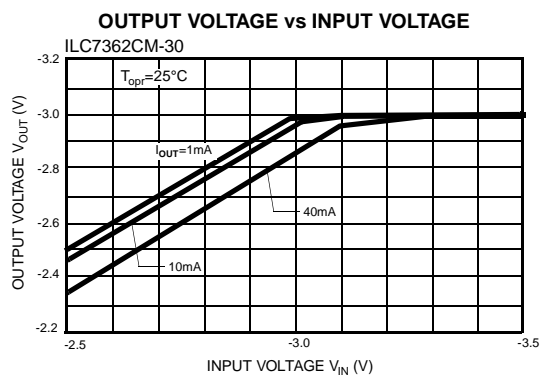
- V_{OUT} means the output voltage when “V_{OUT}-2.0V” is provided at the V_{IN} pin while maintaining a certain I_{OUT} value.
- V_{dif} is defined as “V_{IN} - V_{OUT}.”
- I_{OUTmax} = This is specified for SOT-89 package. For SOT-23, it is limited by continuous total power dissipation.

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_{OUTmax}	$V_{IN} = -5.0\text{V}$, $V_{OUT} \geq -2.7\text{V}$	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	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \cdot V_{OUT}}$	$I_{OUT} = 20\text{mA}$ $-5.0 \leq V_{IN} \leq -10.0\text{V}$		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/ $^{\circ}\text{C}$

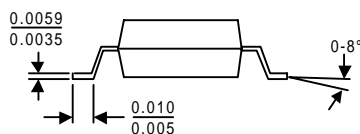
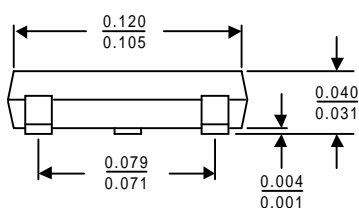
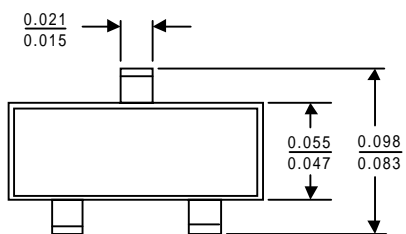
Typical Performance Characteristics

General conditions for all curves; 4.7mF on output

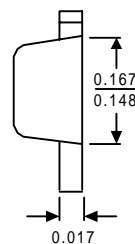
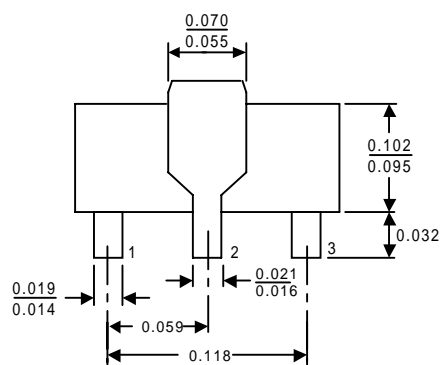
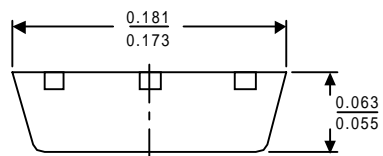


Packaging Information

SOT-23



SOT-89



Ordering Information

Product Number	Package
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

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