

#### 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

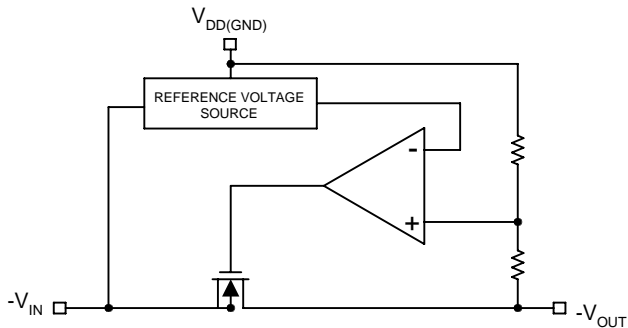
- All-CMOS design in SOT-23 and SOT-89 packages gives optimal size and power performance
- $\pm 2\%$  precision outputs
- $3\mu\text{A}$  of  $I_q$
- Package and Voltage options allow:

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

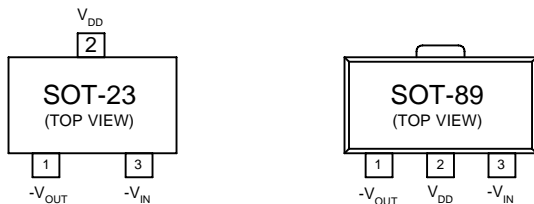


#### Ordering Information

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.

#### Pin-Package Configurations



**Absolute Maximum Ratings (T<sub>A</sub> = 25°C)**

Parameter	Symbol	Ratings	Units
Input Voltage	V <sub>IN</sub>	-12	V
Output Current	I <sub>OUT</sub>	200	mA
Output Voltage	V <sub>OUT</sub>	-V <sub>DD</sub> -0.3~V <sub>IN</sub> +0.3	V
Continuous Total Power Dissipation	SOT-23	P <sub>D</sub>	150
	SOT-89		500
Operating Ambient Temperature	T <sub>opr</sub>	-30~+85	°C
Storage Temperature	T <sub>stg</sub>	-40~+125	°C

**Electrical Characteristics ILC7362CP-50**

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

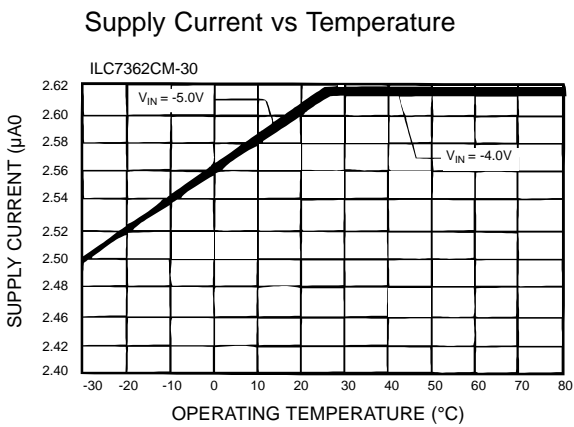
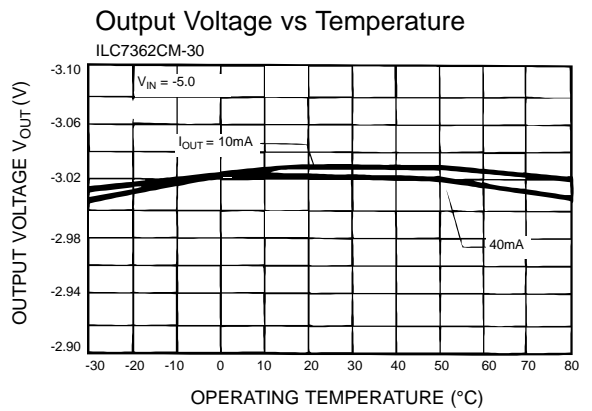
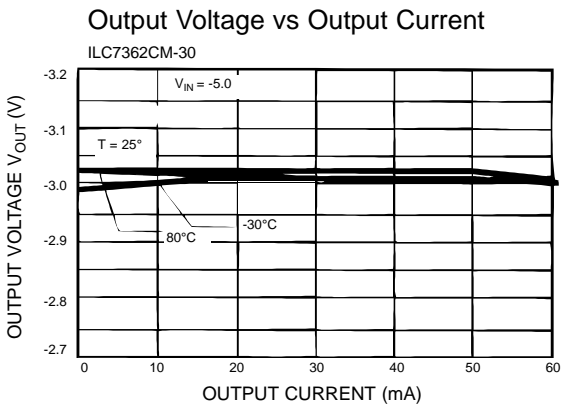
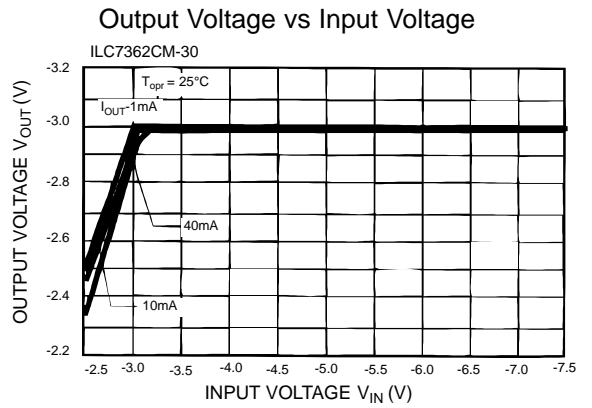
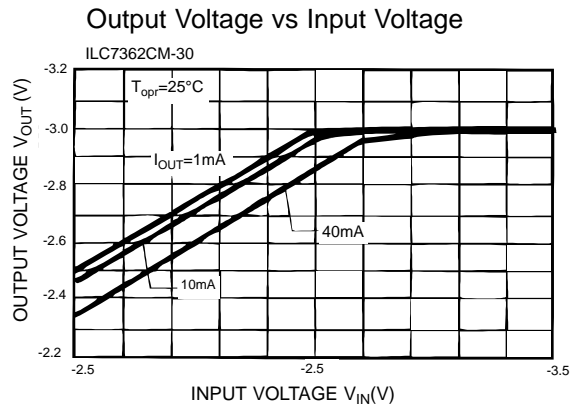
Note:

1. V<sub>OUT</sub> means the output voltage when “V<sub>OUT</sub>-2.0V” is provided at the V<sub>IN</sub> pin while maintaining a certain I<sub>OUT</sub> value.
2. V<sub>dif</sub> is defined as “|V<sub>IN</sub>| - |V<sub>OUT</sub>| .”
3. I<sub>OUTmax</sub> = This is specified for SOT-89 package. For SOT-23, it is limited by continuous total power dissipation.

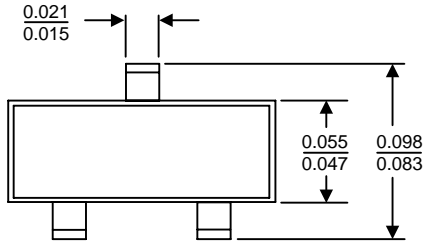
## Electrical Characteristics ILC7362CP-30

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	$\Delta V_{OUT}$	$V_{IN} = -5.0\text{V}$ , $1\text{mA} \leq I_{OUT} \leq 40\text{mA}$		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	$\mu\text{A}$
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	$\frac{\Delta V_{OUT}}{\Delta T_{opr} \cdot V_{OUT}}$	$I_{OUT} = 20\text{mA}$ $-30^{\circ}\text{C} \leq T_{opr} \leq 80^{\circ}\text{C}$		$\pm 100$		ppm/ $^{\circ}\text{C}$

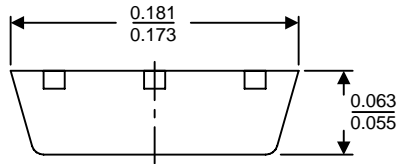
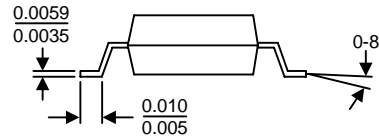
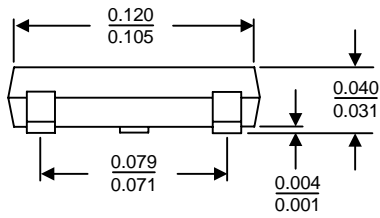
Typical Performance Characteristics *General conditions for all curves; 4.7µF on output*



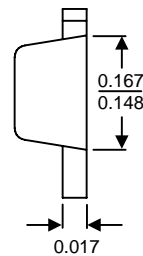
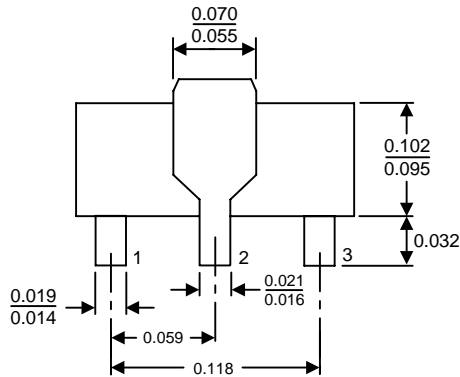
Packaging Information



**SOT-23**  
All dimensions in inches



**SOT-89**  
All dimensions in inches



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