Impala Linear Corporation

ILC7362

SOT-23 CMOS Negative LDO

POWER POWERED BY IMPALA ON THE GO

General Description

100mA negative LDO in SOT-23 package.

This CMOS device regulates a negative supply down to a fixed voltage level at ±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

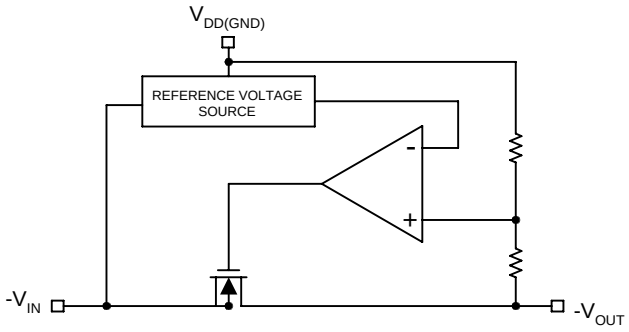
- All-CMOS design in SOT-23 and SOT-89 packages gives optimal size and power performance
- ±2% precistion outputs
- 3µA of Iq
- Package and Voltage options alow:

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

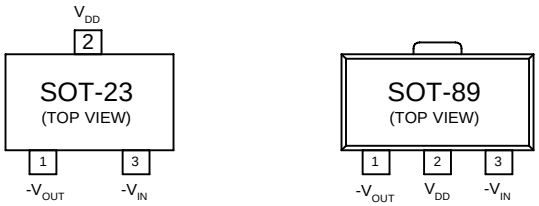
Applications

- 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 Convertor, or 50mA-5V Regulator
	SOT-89 Package
ILC7362CM-30	50mA-5V to -3V Convertor
	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°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 Power Dissipation	SOT-23	P_D	150	mW
	SOT-89		500	
Operating Ambient Termperature		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_{OUT}max	V_{IN} = -7.0V, $V_{OUT} \geq$ -4.5V	100			mA
Load Stability	ΔV_{OUT}	V_{IN} = -7.0V, 1mA $\leq I_{OUT} \leq$ 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	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} = 20mA -7.0 $\leq V_{IN} \leq$ -10.0V		0.1	0.3	%/V
Input Voltage	V_{IN}				10.0	V
Output Voltage Temperature Characteristics	$\frac{\Delta V_{OUT}}{\Delta T_{opr} \bullet V_{OUT}}$	I_{OUT} = 20mA -30°C $\leq T_{opr} \leq$ 80°C		±100		ppm/°C

Note:

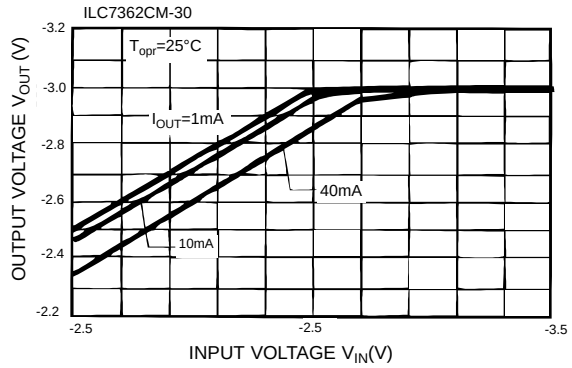
1. V_{OUT} means the output voltage when "V_{OUT}-2.0V" is provided at teh V_{IN} pin while maintaining a certain I_{OUT} value.
2. V_{dif} is defined as "$|V_{IN}| - |V_{OUT}|$."
3. I_{OUT}max = This is specified for SOT-89 package. For SOT-23, it is limited by continuous total power dissipation.

Electrical Characteristics ILC7362CP-30

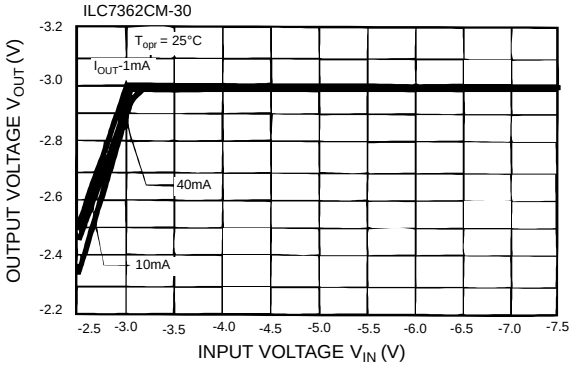
Parameter	Symbol	Conditions	Min	Typ	Max	Units
Output Voltage	V_{OUT}	I_{OUT} = 20mA, V_{IN} = -5.0V	-2.92	-3.0	-3.06	V
Maximum Output Current	$I_{OUT\ (MAX)}$	V_{IN} = -5.0V, $V_{OUT} \geq$ -2.7V	100			mA
Load Stability	ΔV_{OUT}	V_{IN} = -5.0V, 1mA $\leq I_{OUT} \leq$ 40mA		40	80	mV
Input/Output Voltage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

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

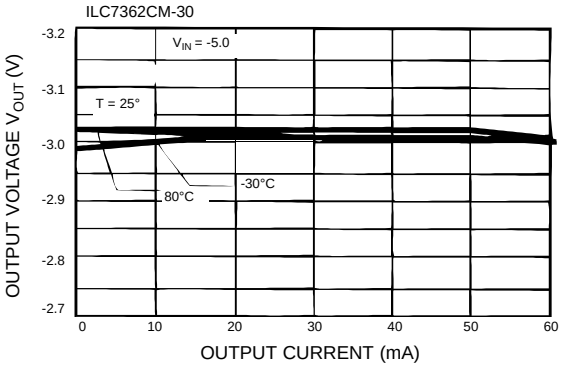
Output Voltage vs Input Voltage



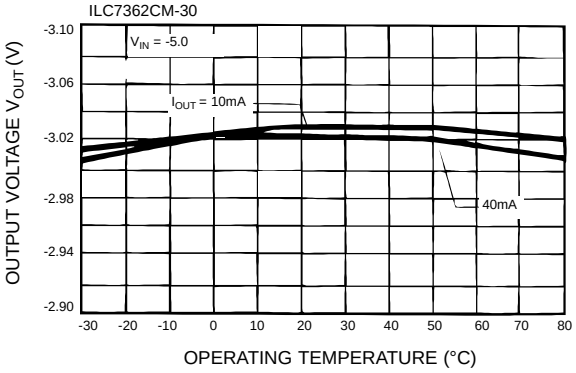
Output Voltage vs Input Voltage



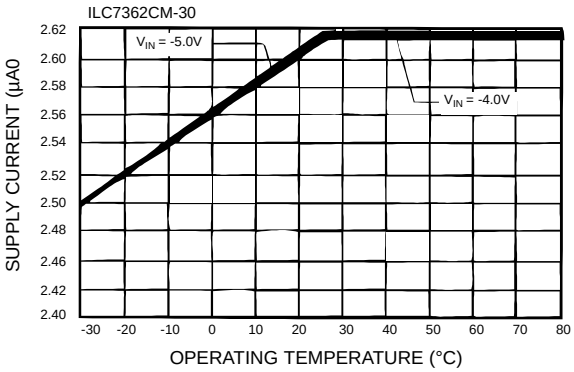
Output Voltage vs Output Current



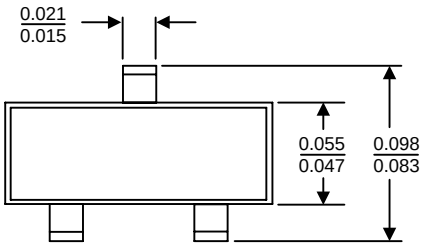
Output Voltage vs Temperature



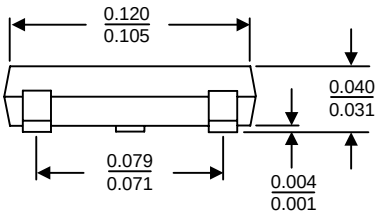
Supply Current vs Temperature

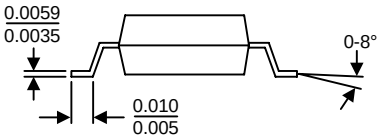


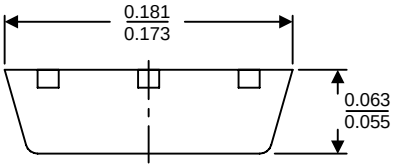
Packaging Information



SOT-23
All dimensions in inches







SOT-89
All dimensions in inches