



ETC4362 Series Negative Voltage Regulators

Description

The ETC4362 series is a group of negative voltage output, three-pin regulators, that provide a high current even when the input/output voltage differential is small. Low power consumption and high accuracy is achieved through CMOS fabrication and laser trimming technologies.

The ETC4362 consists of a high-precision voltage reference, an error correction circuit, and an output driver.

Standard output voltage options include -3.0V and -5.0V ($\pm 2\%$ accuracy).

Available in the SOT-89 package.

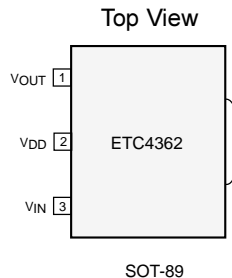
Typical Applications

- GASFET Bias Supply
- Battery Powered Equipment
- Reference Voltage Sources
- Cameras, Video Recorders
- Power Failure Detection
- PDAs

Ordering Information

Part	Voltage	Package
ETC4362C-30P	3.0V	SOT-89
ETC4362C-50P	5.0V	SOT-89

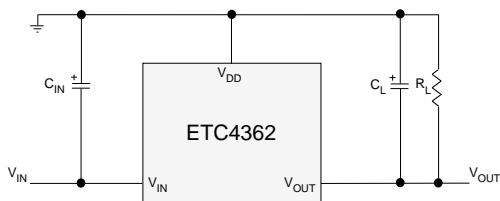
Pin Configuration



Features

- Maximum Output Current: 100mA
- Standard Output Voltages: -3.0V, -5.0V
- High Accuracy: $\pm 2\%$
- Low Power Consumption: 3.0 μ A typ.
- Line Regulation: 0.1%/V typ.
- Small Input-Output Voltage Differential: 0.12V typ. at 50mA, 0.38V typ. at 100mA ($V_{OUT} = -5.0V$)
- Package: SOT-89

Typical Operating Circuit



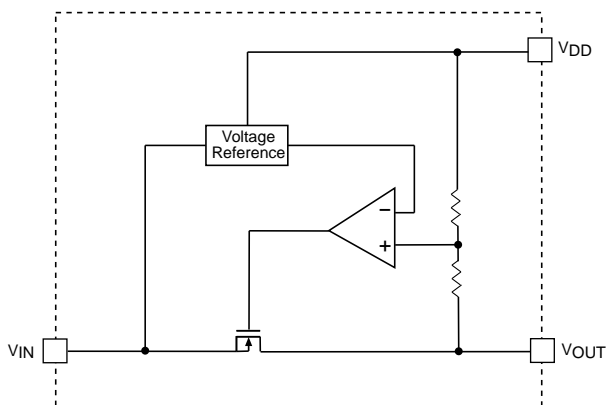
ETC4362 Series

Negative Voltage Regulators

Pin Functions

PIN NUMBER	PIN NAME	FUNCTION
1	VOUT	Regulated Output Voltage
3	VIN	Supply Voltage Input
2	VDD	Ground

Block Diagram



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Negative Voltage Regulators

Absolute Maximum Ratings

Input Voltage, V_{IN} -12V
 Output Current, I_{OUT} 200mA
 Output Voltage, V_{OUT} .. ($V_{IN} - 0.3V$) to ($V_{DD} + 0.3V$)

Power Dissipation, SOT-23 150mW
 Power Dissipation, SOT-89 500mW
 Operating Temperature Range -30°C to 80°C
 Storage Temperature Range -40°C to 125°C

Stresses above those listed under ABSOLUTE MAXIMUM RATINGS may cause permanent device failure. Functionality at or above these limits is not implied. Exposure to absolute maximum ratings for extended periods may affect device reliability. Operating ranges define those limits between which the functionality of the device is guaranteed.

Electrical Characteristics - ETC4362C-50P

$V_{OUT} = -5.0V$, $T_A = 25^\circ C$, unless otherwise noted.

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Output Voltage	V_{OUT}	$V_{IN} = -7.0V$, $I_{OUT} = 20mA$	-4.90	-5.00	-5.10	V
Maximum Output Current	I_{OUTmax}	$V_{IN} = -7.0V$, $V_{OUT} \leq -4.5V$	100			mA
Load Regulation	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 mV
Supply Current	I_{SS}	$V_{IN} = -7.0V$		3.0	7.0	μA
Line Regulation	Note 1	$I_{OUT} = 20mA$, $-10.0V \leq V_{IN} \leq -7.0V$		0.1	0.3	%/V
Input Voltage	V_{IN}		-10.0			V

Note 1: Defined as $\Delta V_{OUT} / (\Delta V_{IN} \times V_{OUT})$

ETC4362C-30P

$V_{OUT} = -3.0V$, $T_A = 25^\circ C$, unless otherwise noted.

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Output Voltage	V_{OUT}	$V_{IN} = -5.0V$, $I_{OUT} = 20mA$	-2.92	-3.00	-3.06	V
Maximum Output Current	I_{OUTmax}	$V_{IN} = -5.0V$, $V_{OUT} \leq -2.7V$	100			mA
Load Regulation	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 mV
Supply Current	I_{SS}	$V_{IN} = -5.0V$		2.5	6.0	μA
Line Regulation	Note 1	$I_{OUT} = 20mA$, $-10.0V \leq V_{IN} \leq -5.0V$		0.1	0.3	%/V
Input Voltage	V_{IN}		-10.0			V

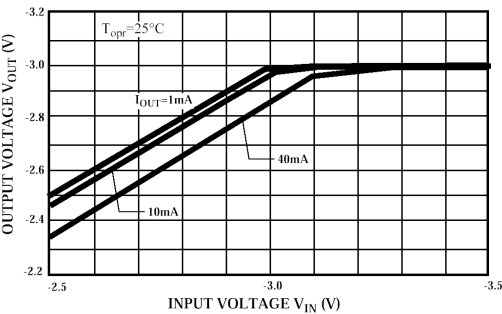
Note 1: Defined as $\Delta V_{OUT} / (\Delta V_{IN} \times V_{OUT})$

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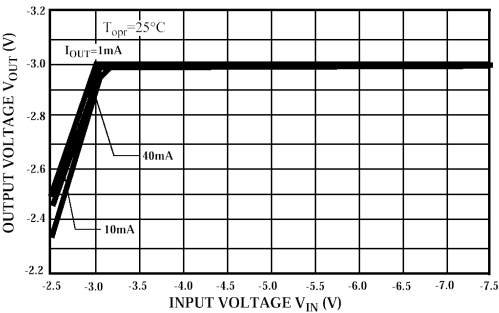
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OUTPUT VOLTAGE vs INPUT VOLTAGE



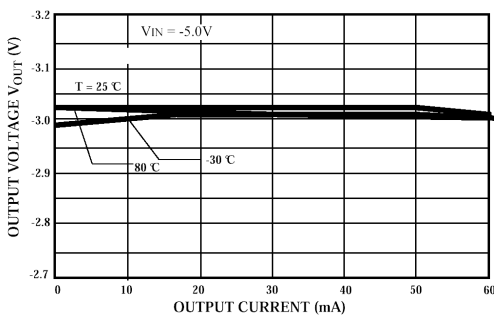
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OUTPUT VOLTAGE vs INPUT VOLTAGE



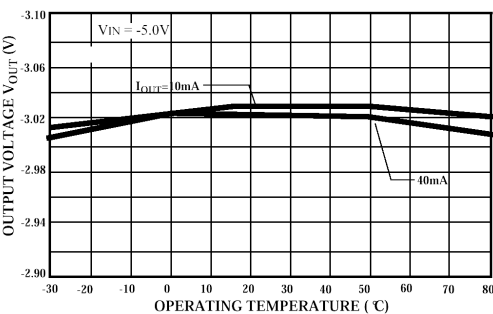
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OUTPUT VOLTAGE vs OUTPUT CURRENT



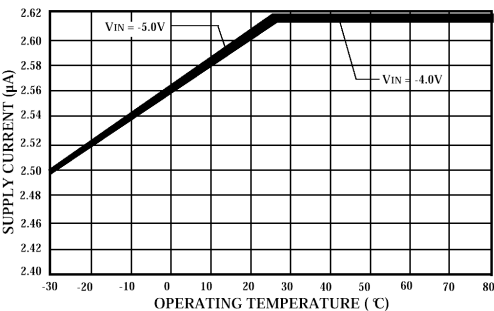
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OUTPUT VOLTAGE vs TEMPERATURE



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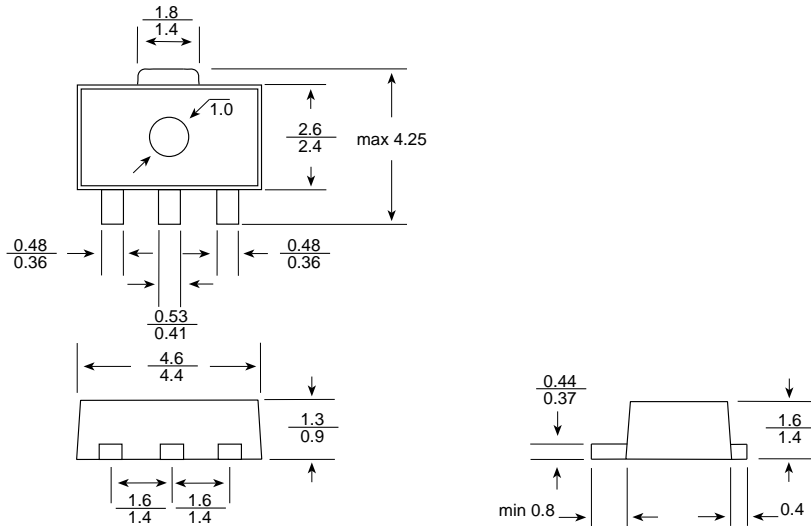
SUPPLY CURRENT VERSUS TEMPERATURE



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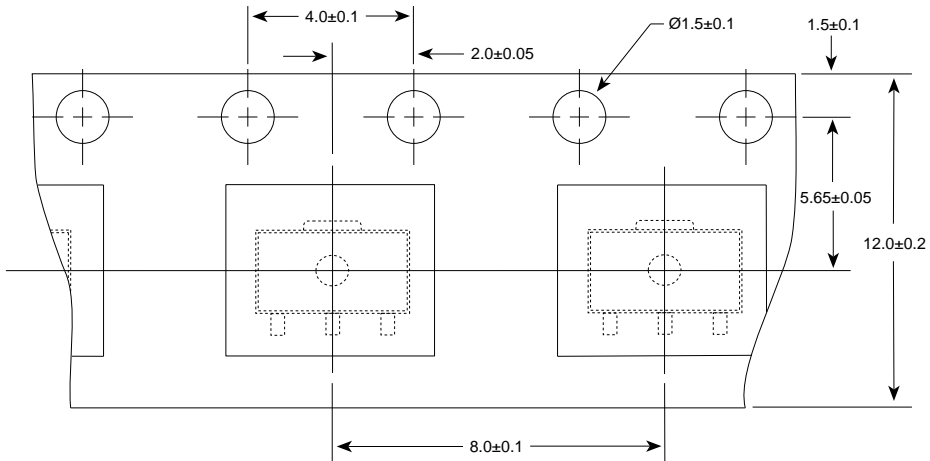
Packaging Information

P Package, SOT-89



Dimensions are in mm.

SOT-89 Tape and Reel Information



Dimensions are in mm.

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