ACE529C
1A Low Dropout Voltage Linear Regulator

Description

ACE529C series are a group of positive voltage output, high precise, and low power consumption voltage regulator. Voltages are selectable in 100mV steps within a range of 1.2V to 5.0V. It also can be customized on command.

ACE529C series have excellent load and line transient response and good temperature characteristics, which can assure the stability of chip and power system. And it uses trimming technique to guarantee output voltage accuracy within ±2%.

ACE529C series are available in SOT-23-5 package, which is lead (Pb)- free.

Features

- Low Quiescent Current: 100uA at 5V
- High PSRR: 65dB range to 1KHz
- Low Output Noise: 44uVRMS
- Low Dropout: 200mV@Iout=0.8A, Vout=3.3V
- Maximum output current: 1A
- Highly Accurate: ±2%
- Low ESR Ceramic Capacitor Compatible

Application

- Reference Voltage Source
- Battery Powered Equipment
- PC Peripherals
- Wireless Devices
- Instrumentation

Absolute Maximum Ratings

Parameter		Value
Max Input Voltage		6V
Max Operating Junction Temperature (T_J)		140℃
Ambient Temperature (T_A)		-40℃~85℃
Power Dissipation	SOT-23-5	250mW
Storage Temperature (T_S)		-40℃~150℃
Lead Temperature & Time		260℃, 10 Sec

Recommended Work Conditions

Parameter	Value
Input Voltage Range	Max. 6V
Ambient Temperature	-40℃~85℃
Operating Junction Temperature (T_J)	125℃

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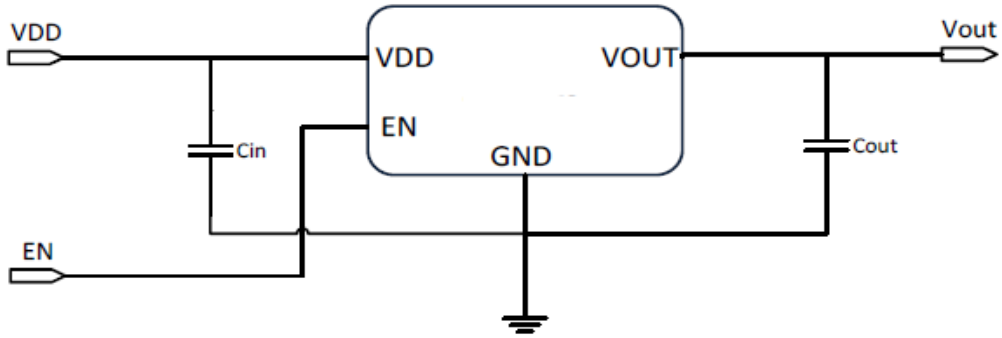
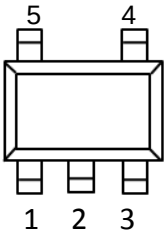
Typical Application



Packaging Type

SOT-23-5



Pin Configuration

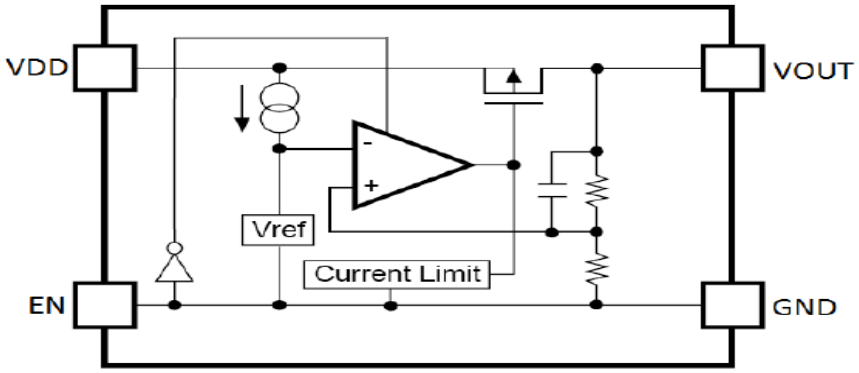
SOT-23-5	Description	Function
1	VDD	Supply Voltage Input
2	GND	Ground Pin
3	EN	Chip Enable
4	NC	No Connection
5	V_{OUT}	Output Voltage

Ordering information

ACE529C X XX XX + H

- Halogen - free
- Pb - free
- BN：SOT23-5
- Output Voltage：1.2V/1.8V….5.0V
- A：±1%
  B：±2%

Block diagram



Electrical Characteristics:

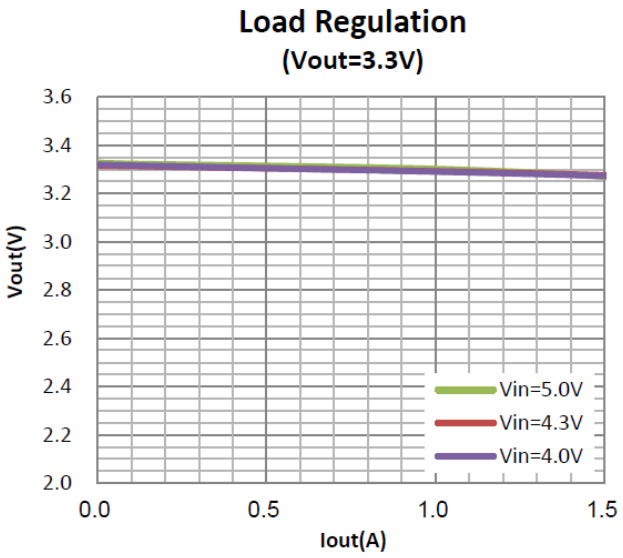
Test Conditions: C_{IN}=4.7uF,C_{OUT}=4.7uF,T_A=25℃, unless otherwise specified.

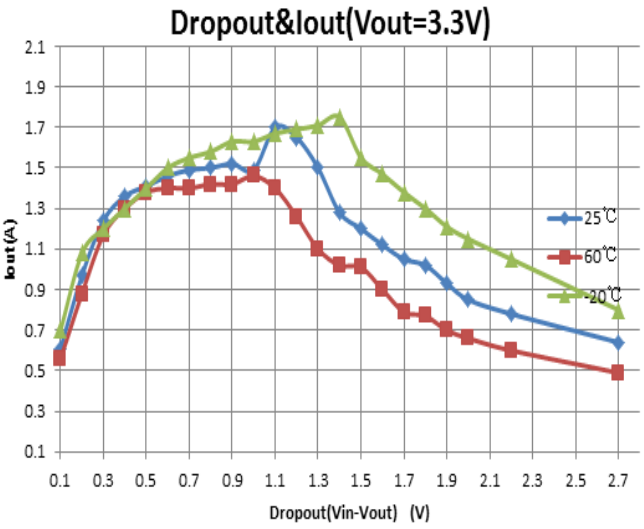
Symbol	Parameter		Conditions	Reference data			Unit
				Min	Typ	Max	
V_{DD}	Input Voltage			1.5(1)		6	V
V_{OUT}	Output Voltage	V_{OUT}>1.5	V_{DD}=Set V_{OUT}+1V 1mA≤I_{OUT}≤10mA	V_{OUT} X0.98	V_{OUT}	V_{OUT} X1.02	V
		V_{OUT}<=1.5		V_{OUT} -0.03		V_{OUT} +0.03	
I_{OUT} (Max.)(2)	Maximum Output Current		V_{DD}-V_{OUT}=1V	1			A
V_{DROP}	Dropout Voltage		V_{OUT}=3.3V, I_{OUT}=1A		300	500	mV
$\frac{\Delta Vout}{\Delta Vin \cdot Vout}$	Line Regulation		I_{OUT}=10mA, 4V≤V_{DD}≤6V		0.05	0.2	%/V
ΔVout	Load Regulation		V_{DD}=Set V_{OUT}+1V 1mA≤I_{OUT}≤2.5A		30	60	mV
Is	Supply Current		V_{DD}=Set V_{OUT}+1V, V_{OUT} Floating		100	150	uA
$\frac{\Delta Vout}{\Delta T \cdot Vout}$	Output Voltage Temperature Coefficient		I_{OUT}=10mA		±100		ppm/℃
PSRR	Ripple Rejection		f=100Hz, Ripple=0.5Vp-p, V_{DD}=Set V_{OUT}+1V		65		dB
en	Output Noise		BW=10Hz~100KHz		44		uVrms

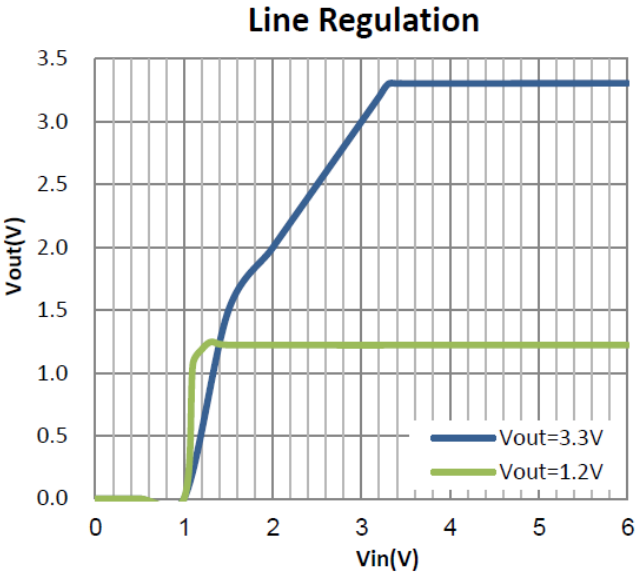
Note:

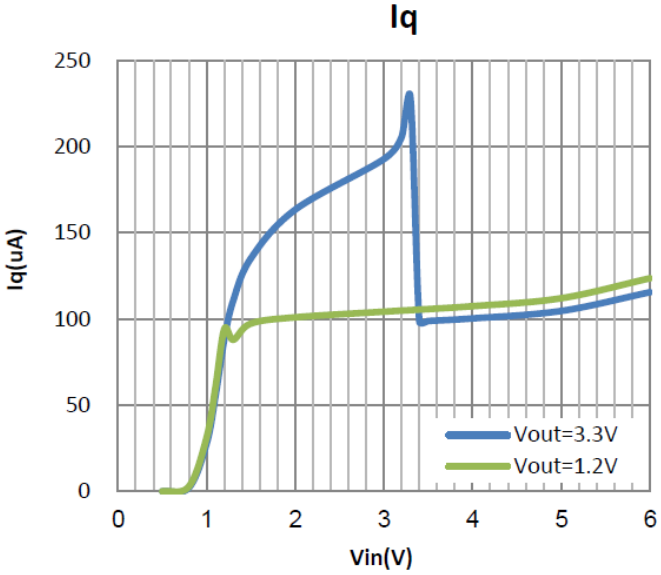
1. Iout=350mA@Vin=1.5V, Vout=1.2V
2. The maximum power rating of each package is a constant, so along with the change of I_{LOAD}, the V_{DD}-V_{OUT} should be controlled to a certain range to ensure the normal operation.

Typical Performance Characteristics

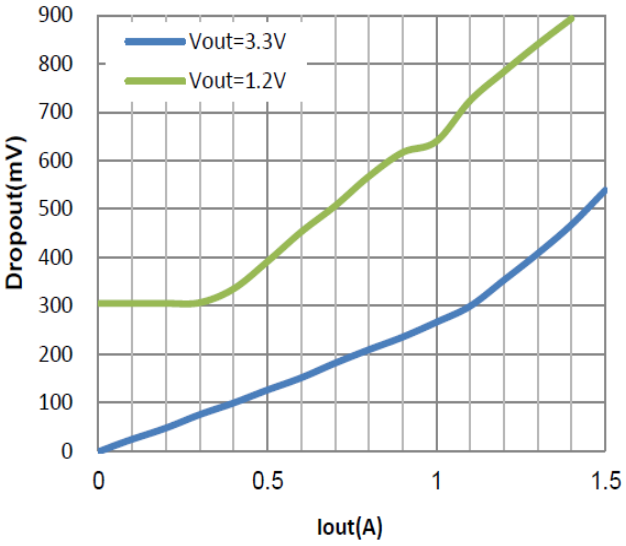




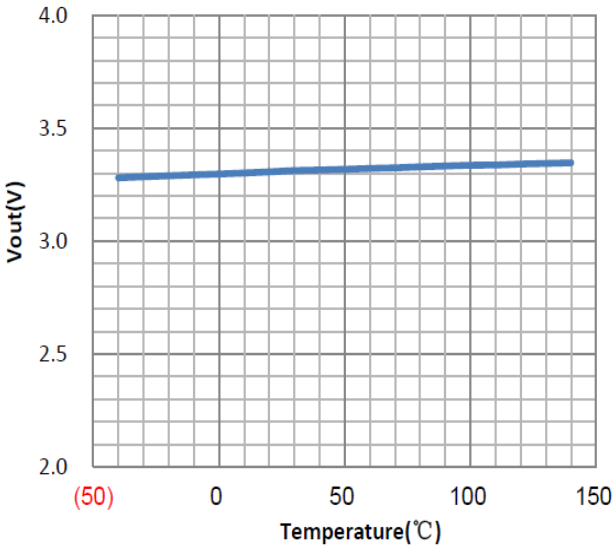




Dropout Voltage

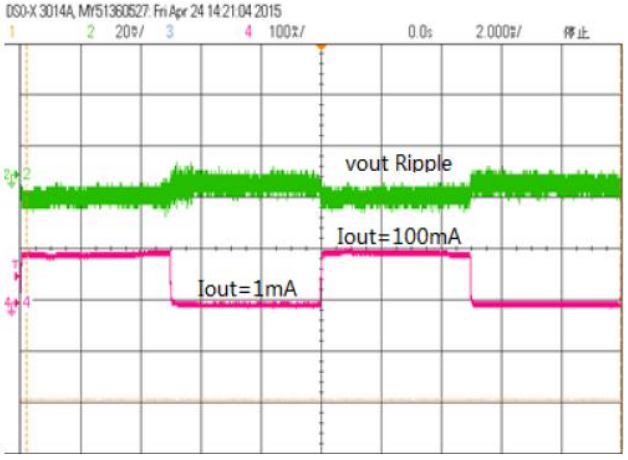


Vout vs. Temperature



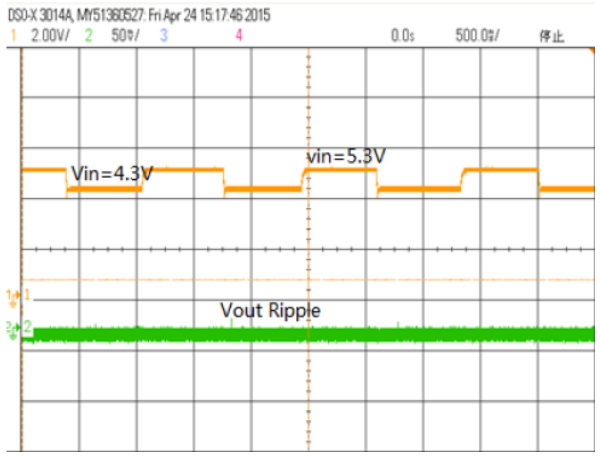
Load Transient Response (Vin=5V,Vout=3.3V)

Cin=1uF,Cout=1uf,Iout=1mA-100mA



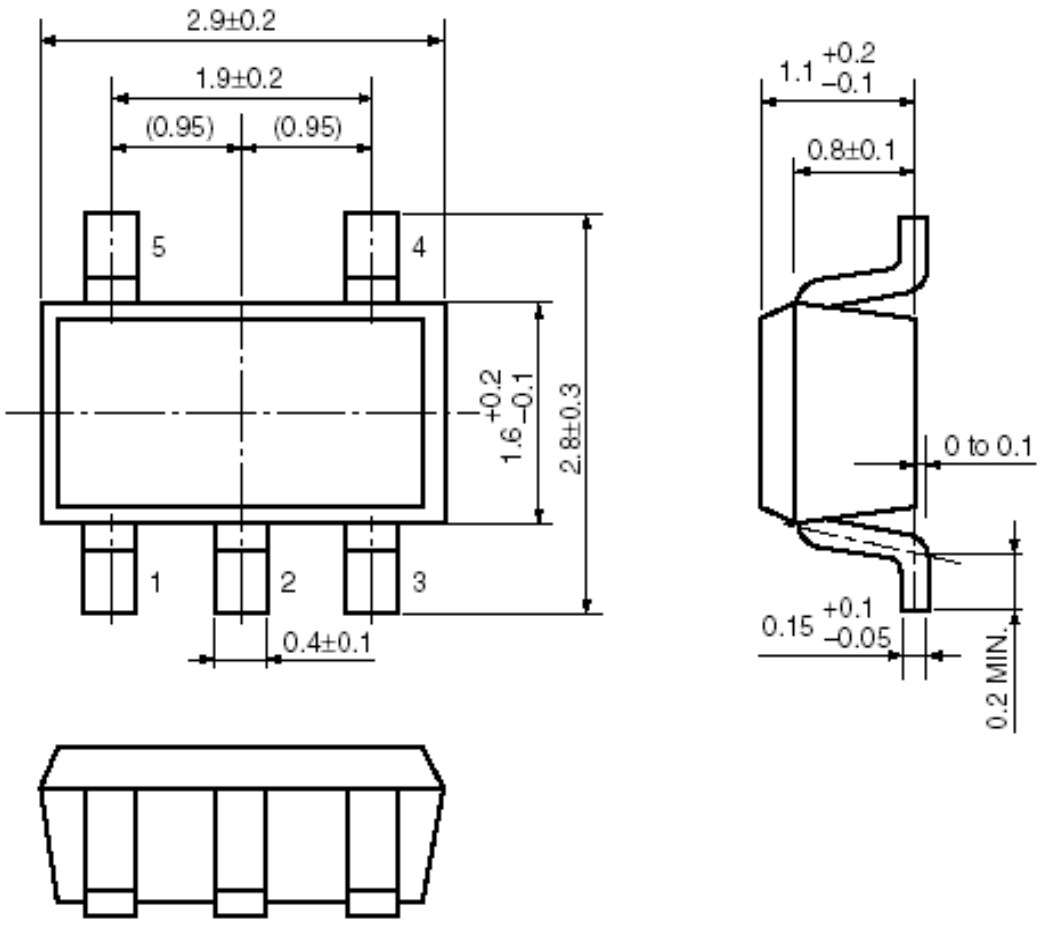
Line Transient Response(Vin=5V,Vout=3.3V)

Cin=1uF,Cout=1uf,Iout=10mA,Vin=4.3V-5.3V



Packing Information

SOT23-5



Notes

ACE does not assume any responsibility for use as critical components in life support devices or systems without the express written approval of the president and general counsel of ACE Electronics Co., LTD. As sued herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and shoes failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury to the user.
2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.