ACE78L05S

5V 3-Terminal Positive Voltage Regulator

Description

ACE78L05S circuit is a three-terminal positive voltage regulator, with a 5V fixed output voltage. It can be used as a regulator in many of electrical equipment.

Features

- Few external components and high flexibility
- Internal thermal and overload protection
- Output current up to 100mA

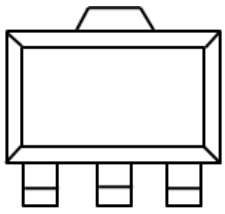
Absolute Maximum Ratings

Unless otherwise specified, Tamb=25℃

Parameter	Max	Unit
Input Voltage (V_{IN})	35	V
Output current (I_O)	200	mA
Operating Temperature	-30 ~ 80	°C
Storage Temperature	- 55 ~ 150	°C
Power Dissipation (P_D)	650	mW

Packaging Type

SOT-89-3

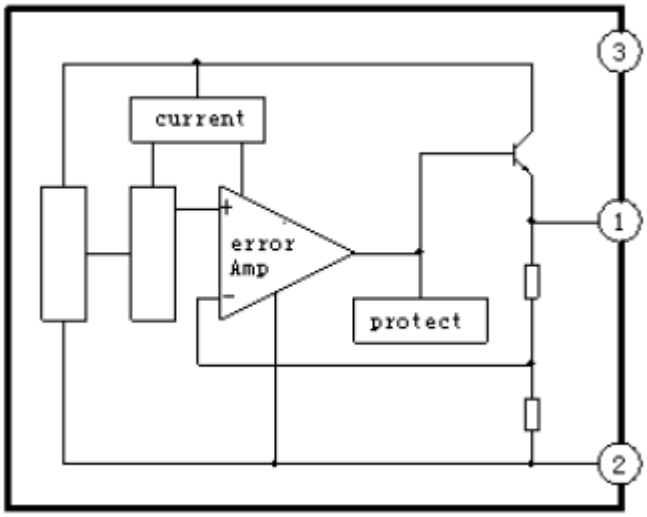


Ordering information

ACE78L05 S XX + H

- Halogen-free
- Pb-free
- AM : SOT-89-3

Block Diagram

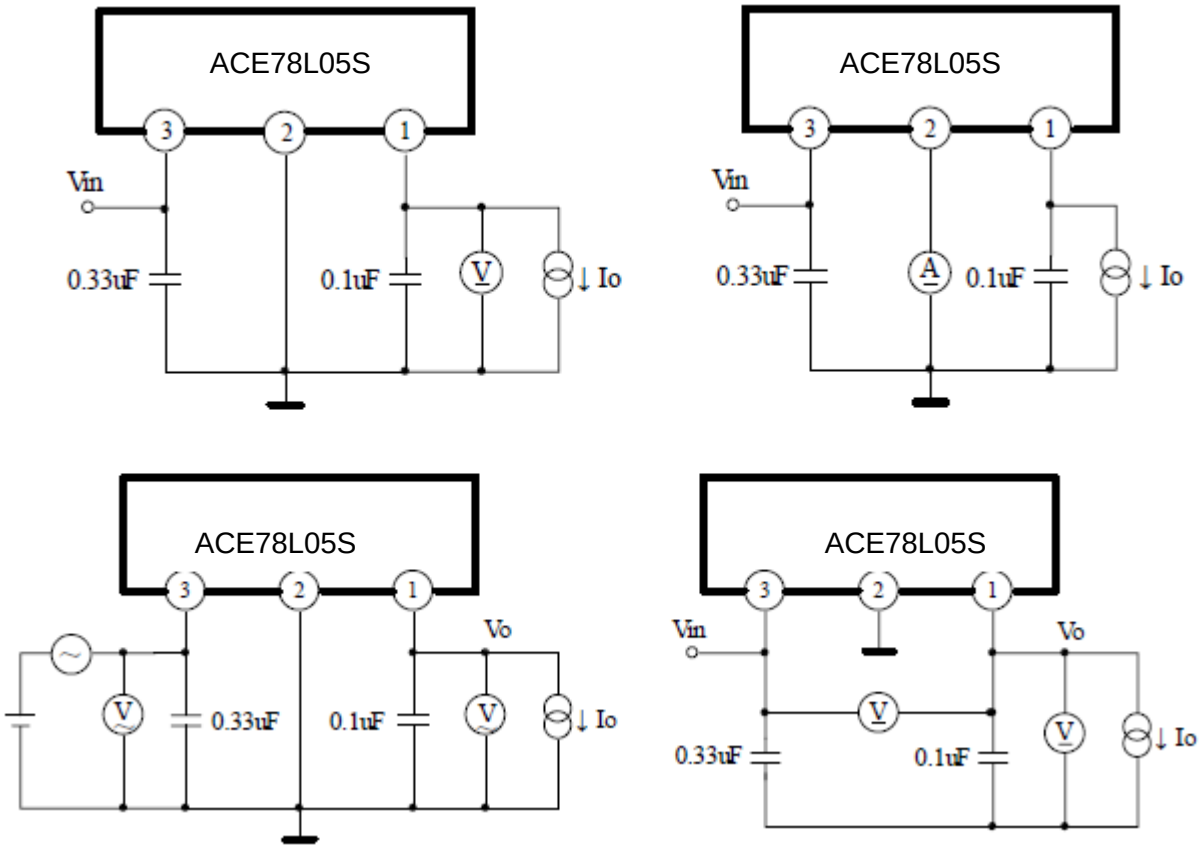


Electrical Characteristics

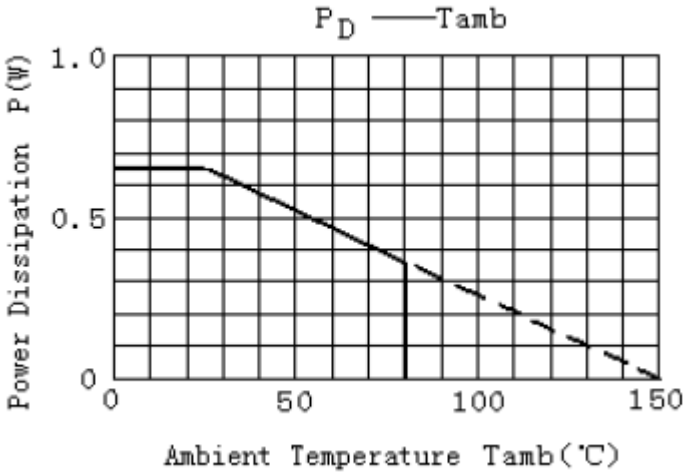
T_{amb}=25℃, I_O=40mA, V_{IN}=10V unless otherwise noted

Symbol		Test Condition	Min	Typ	Max	Unit
Output Voltage (Vo)			4.9	5.0	5.1	V
		Vin=7.5~20V V I_O=1~70mA	4.85		5.15	
Line Regulation (REGv)		Vin=7.5~20V		55	150	mV
		Vin=8.0~20V		45	100	
Load Regulation (REG_L)		I_O=1~100mA		11	60	mV
		I_O=1~40mA		5	30	
Quiescent Current (I_B)				3	6	mA
Quiescent Current Change	△I_{BV}	Vin=8.0~20V			1.0	mA
	△I_{BL}	I_O=1~40mA			0.1	
Output Noise Voltage (V_{NO})		f=10Hz~100kHz		40		μV
Ripple Rejection (R.R)		Vin=8.0~18V f=120Hz	47	57		dB
Dropout Voltage (V_{DIFmin})				1.7		V
Short Circuit Current Limit (I_{OS})		Vin=35V		140		mA
Average Temperature Coefficient of Output Voltage (△Vo/△T)		I_O= 5mA Tj= 0~125℃		-0.6 5		mA/℃

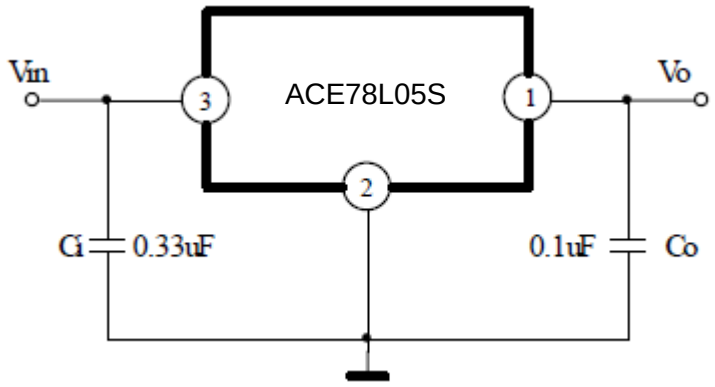
Test Circuit



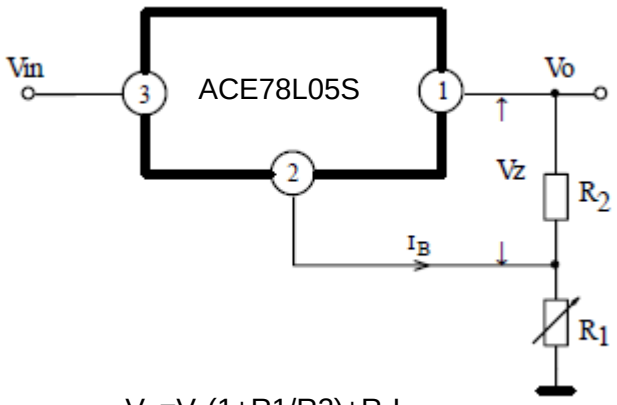
Characteristics Curve



Typical Application Circuit

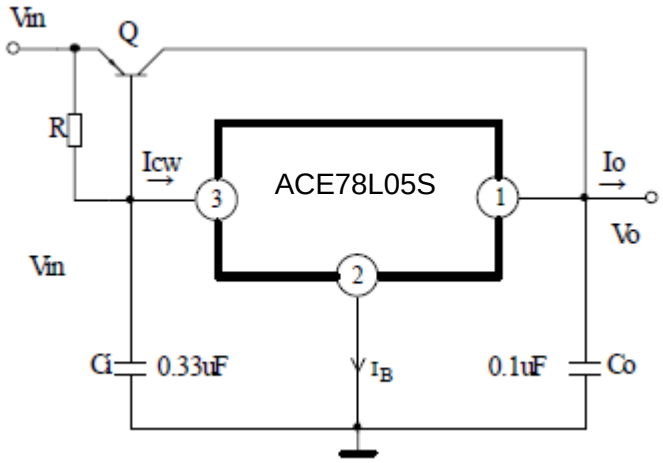


Voltage Boost Regulator



$V_O=V_Z(1+R1/R2)+R_1I_B$

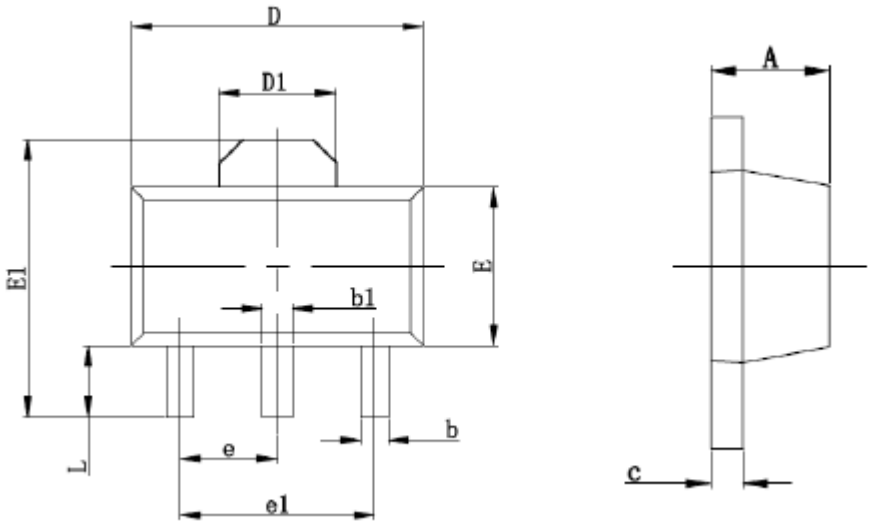
Current Boost Regulator



$I_O=(1+\beta)\ I_{CW}-\beta\ V_{BE}-R-I_b$

Packing Information

SOT-89-3



Symbol	Min.（mm）	Max.（mm）	Symbol	Min.（mm）	Max.（mm）
A	1.40	1.60	E	2.35	2.55
b	0.35	0.52	E1	3.94	4.25
b1	0.40	0.58	e	1.50TYP	
c	0.35	0.44	e1	3.00TYP	
D	4.40	4.60	L	0.90	1.10
D1	1.55（Reference value）				

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.

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