



ACE7805

3-Terminal 1A Positive Voltage Regulator

Description

The ACE7805 series of three terminal positive regulators are available in the TO-220 package and with several fixed output voltages, making them useful in a wide range of applications.

Each type employs internal current limiting, thermal shut down and safe operating area protection, making it essentially indestructible. If adequate heat sinking is provided, they can deliver over 1A output current. Although designed primarily as fixed voltage regulators, these devices can be used with fixed voltage regulators, these devices can be used with external components to obtain adjustable voltages and currents.

Features

- Output Current up to 1A
- Output Voltages of 5V
- Thermal Overload Protection
- Short Circuit Protection
- Output Transistor Safe Operating Area Protection

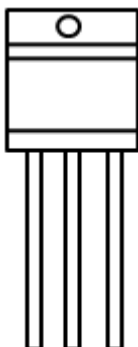
Absolute Maximum Ratings

Parameter	Symbol	Max	Unit
Input Voltage ($V_o=5V$ to $18V$) ($V_o=24V$)	V_i	35	V
		40	
Thermal Resistance Junction-Air	$R_{\theta JA}$	65	$^{\circ}C/W$
Thermal Resistance Junction-Cases	$R_{\theta JC}$	5	$^{\circ}C/W$
Operating Temperature Range	T_{opr}	0~125	$^{\circ}C$
Storage Temperature Range	T_{stg}	-65~150	

* When tested in free air condition, without heat sinking.

Packaging Type

TO-220



1: Input 2: GND 3: Output

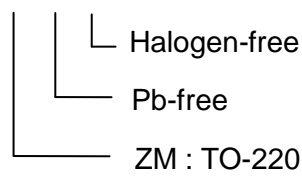


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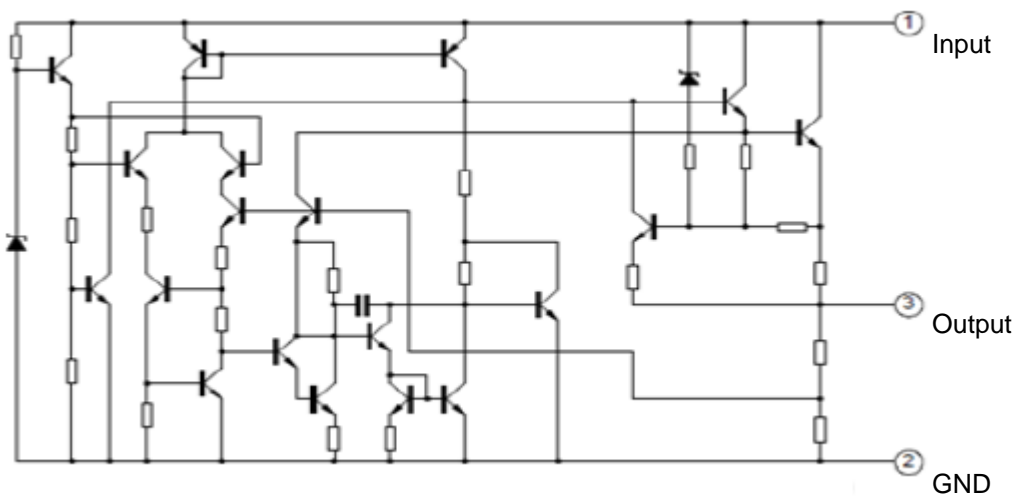
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Ordering information

ACE7805 XX + H



Internal Block Diagram



Electrical Characteristics

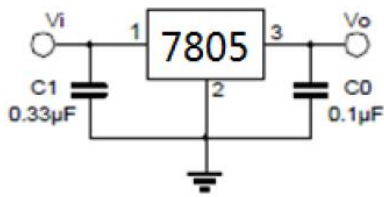
Symbol		Test Condition	Min	Typ	Max	Unit
V _{O1}	A	@ V _{in} =10V, I _o =500mA	4.875	5	5.125	V
	B		4.78	5	5.220	
ΔV _I (Line Regulation)		@ I _o =500mA, 8V ≤ V _{in} ≤ 12V			23	mV
ΔV _I (Load Regulation)		@ 5mA ≤ I _o ≤ 500mA, V _{in} = 10V			39	mV
		@ 5mA ≤ I _o ≤ 999mA, V _{in} = 10V			79	
I _B (Quiescent Current)		@ I _o =5mA, V _{in} = 10V	1.5	3.9	4.7	mA
ΔI _B (Quiescent Current Change)		@ 5mA ≤ I _o ≤ 500mA, V _{in} = 10V		0.3	0.4	mA
		@ 8V ≤ V _{in} ≤ 25V, I _o = 100mA		0.3	0.7	
V _{O2} - V _{O1} (Different Voltage)		@ V _{in} =8V, I _o =5mA, V _{O1} @ V _{in} =7.4V, I _o =1A, V _{O2}	-50		50	mV
I _{cc} (Circuit Current)		@ V _i =36V, I _o =0mA			9	mA
I _{cex} (Leakage Current)		@ V _i -V _{out} =3V			300	μA



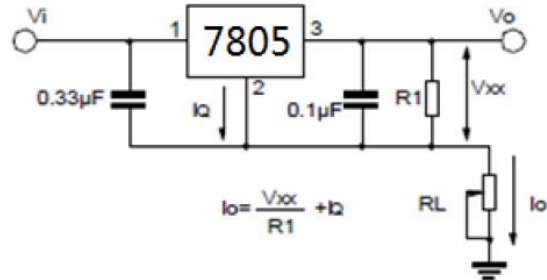
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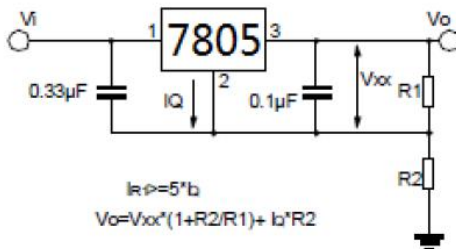
Typical Applications



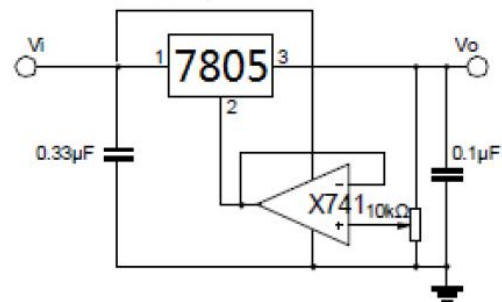
DC Parameters



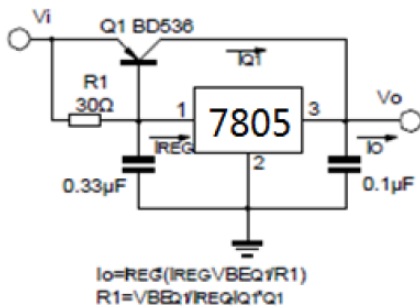
Fixed Output Regulator



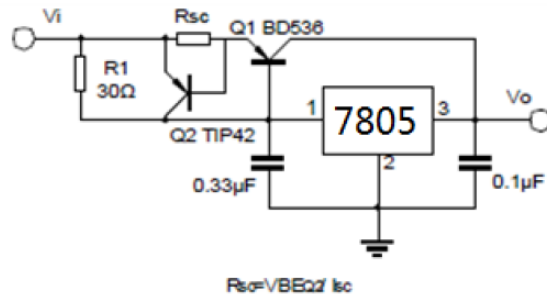
Circuit for Increasing Output Voltage



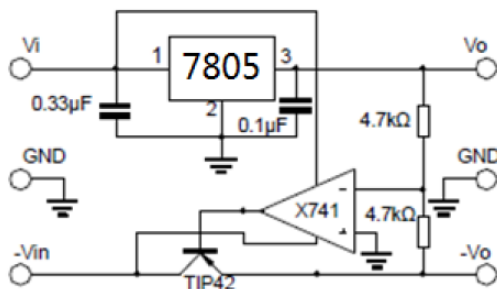
Adjustable Output Regulator



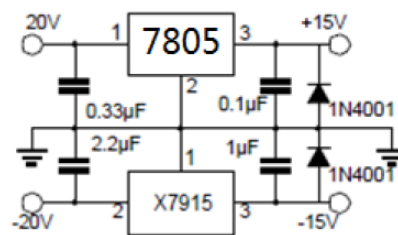
High Current Voltage Regulator



High Output Current with Short Circuit Protection



Tracking Voltage Regulator

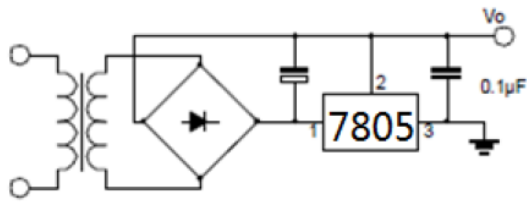


Split Power Supply

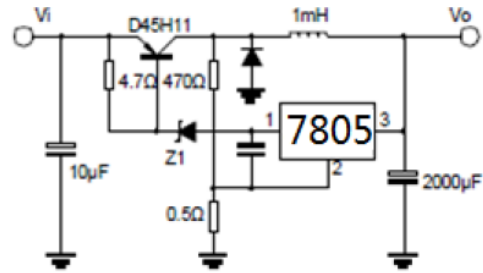


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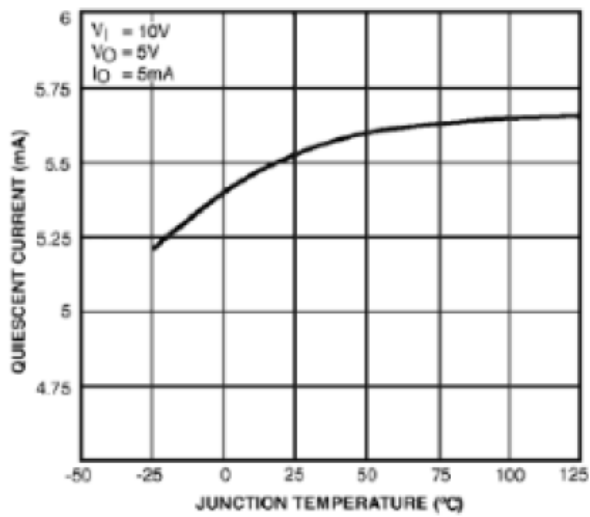


Negative Output Voltage Circuit

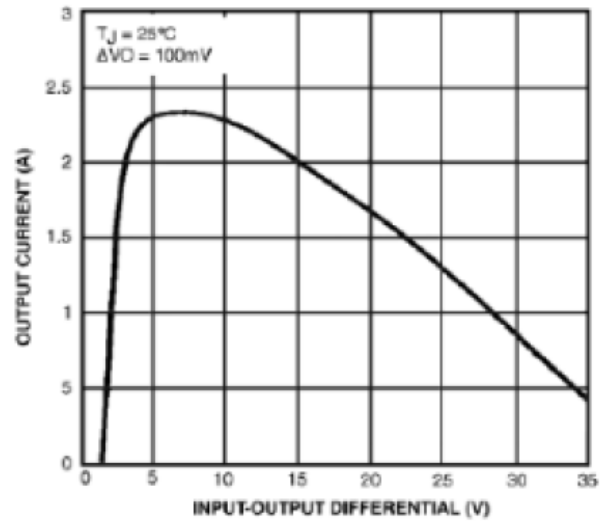


Switching Regulator

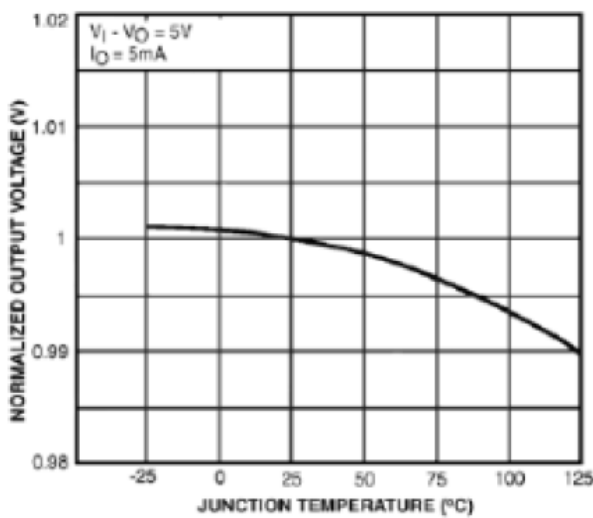
Typical Performance Characteristics



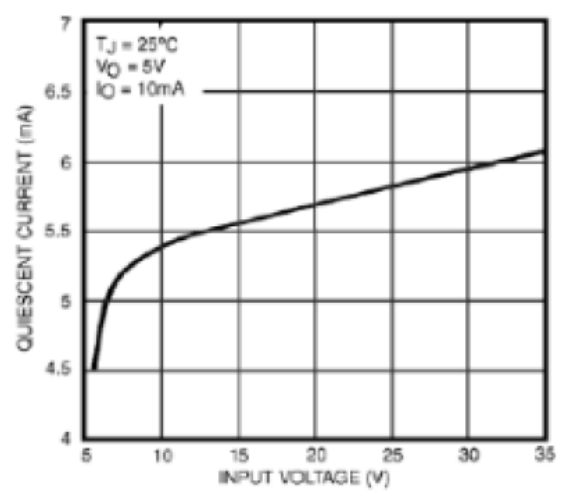
Quiescent Current



Peak Output Current



Output Voltage



Quiescent Current

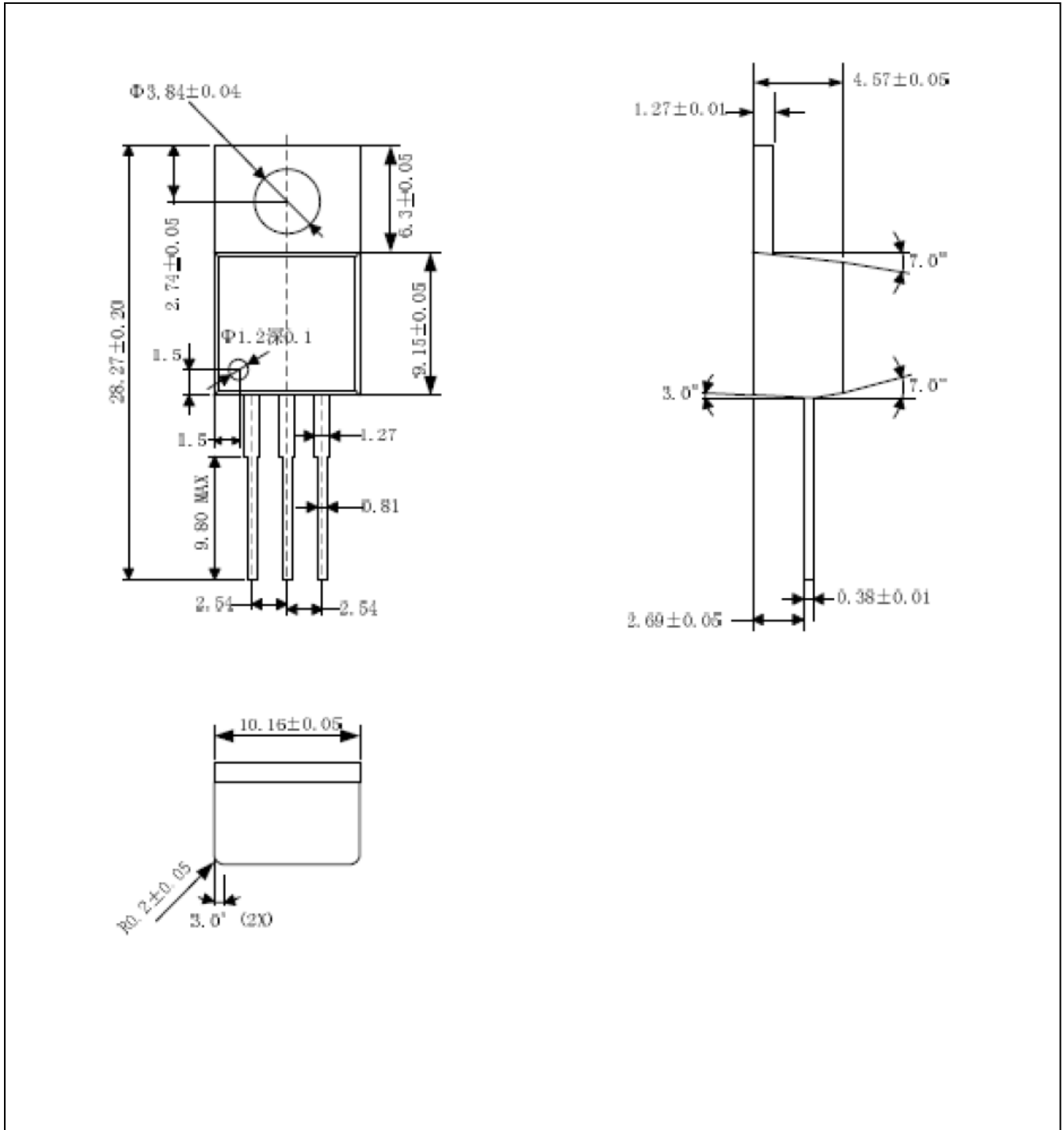


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Packing Information

TO-220





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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 used 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 whose 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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