NIKO-SEM

5A Adjustable Low Dropout Linear Regulator (LDO)

L1084S5
TO-263

GENERAL DESCRIPTION

The L1084 is a positive and low dropout three-terminal voltage regulator with 5A output current capability. This device is designed for use in low voltage applications that offers lower dropout voltage and faster transient response.

This device is fully protected against over current faults, over temperature operation, reversed input polarity, reversed lead insertion, transient voltage spike …etc.

On-Chips trimming the reference voltage to 1% and features the low dropout of maximum 1.45 volts.

The L1084 Series regulators are available in the popular industry standard TO-263 packages.

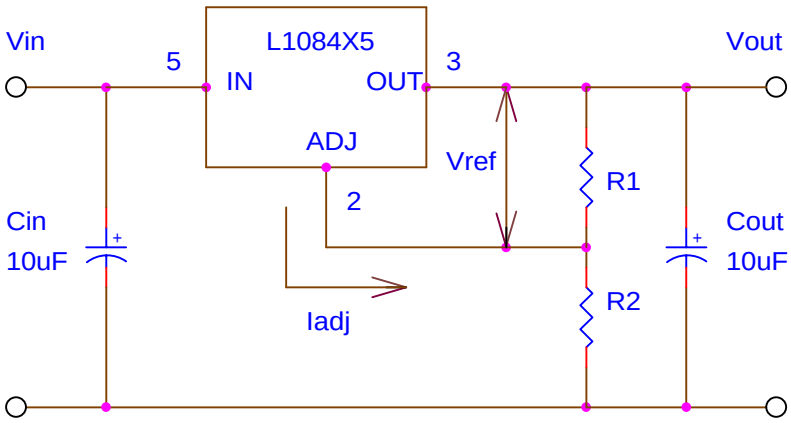
FEATURES

- Very easy to use, it requires only two external resistors to set the output voltage
- Low dropout voltage:
  1.2V typical at up to 5A
- Low ground current
- Fast transient response
- Current & thermal limiting
- Line regulation: 0.5% typical
- Load regulation: 0.5% typical
- TO-263 packages

APPLICATIONS

- High current microprocessor supplies
- Low voltage logic supply
- Powering VGA & sound card
- Portable instrumentation
- Constant current regulator
- Post regulator for switching power supply

TYPICAL APPLICATION



$$Vo = Vref\ (1+R2/R1) + Iadj \times R2$$

1. Cin needed if device is far from filter capacitors.

2. Cout required for stability.

- Basic Adjustable Regulator Circuit -

ABSOLUTE MAXIMUM RATINGS

- Maximum Supply Voltage: 7V
- Power Dissipation: Internally Limited
- Thermal Resistance Junction to Case, θ_{JC}: 2.5 °C/W
- Thermal Resistance Junction to Ambient, θ_{JA} TO-263: 60 °C/W
- Operating Junction Temperature Range: 0 to 125 °C
- Storage Temperature Range: -40 to 150 °C
- Lead Temperature (Soldering, 10 Seconds): 260 °C

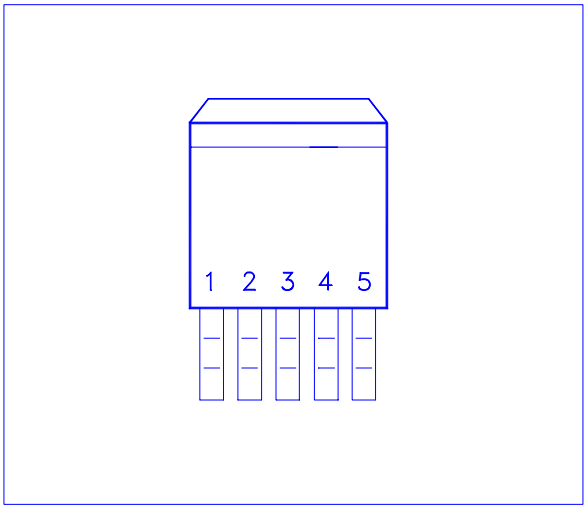
ELECTRICAL CHARACTERISTICS (Unless otherwise specified, T_A = 25 °C.)

Parameter	Symbol	Test Conditions	Typical	Limits
Reference Voltage	V_{REF}	V_{IN} = 5V, I_{OUT} = 10mA	1.25V	1.23V_{Min} 1.27V_{Max}
Dropout Voltage	V_D	$\triangle V_{REF}$ = 1%, I_{OUT} = 5A	1.2V	1.45V
Line Regulation	$REG_{(LINE)}$	(V_{OUT} + 1.5V) ≤ V_{IN} ≤ 7V, I_{OUT} = 10mA	0.5%	2%
Load Regulation	$REG_{(LOAD)}$	(V_{IN} -V_{OUT}) = 3V, 10mA ≤ I_{OUT} ≤ 5A	0.5%	2.5%
Minimum Load Current	I_O	1.5V ≤ (V_{IN} -V_{OUT}) ≤ 5.75V	10mA	
Adjust Pin Current	I_{ADJ}		55µA	100µA
Current Limit	I_{CL}	V_{IN} - V_{OUT} = 2V	7.5A	5.0A (Min)
RMS Output Noise	V_N		0.003% of V_{OUT}	
Ripple Rejection Ratio	R_A	f = 120Hz, C_{ADJ} = 22µF for ADJ pin, V_{IN} = 5V, I_{OUT} = 5A	72dB	60dB (Min)

DEVICE SELECTION GUIDE

Device	L1084S5
Package	TO-263 (5-Lead)
Marking	L1084S5

PIN CONFIGURATIONS



Pin #	Function
1	NC
2	Adjust
3	Output
4	NC
5	Input

Note: TAB is Output Pin

TO-263 (D^2PAK, 5-Lead) MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	14.5	15	15.8	H	1.0	1.5	1.8
B	4.2		4.7	I	9.8		10.3
C	1.20		1.35	J		6.5	
D		2.8		K		1.5	
E	0.3	0.4	0.5	L	0.7	0.85	1.0
F	-0.102		0.203	M	1.57	1.7	1.83
G	8.5	9	9.5	N			

