



5A LOW DROPOUT POSITIVE REGULATOR

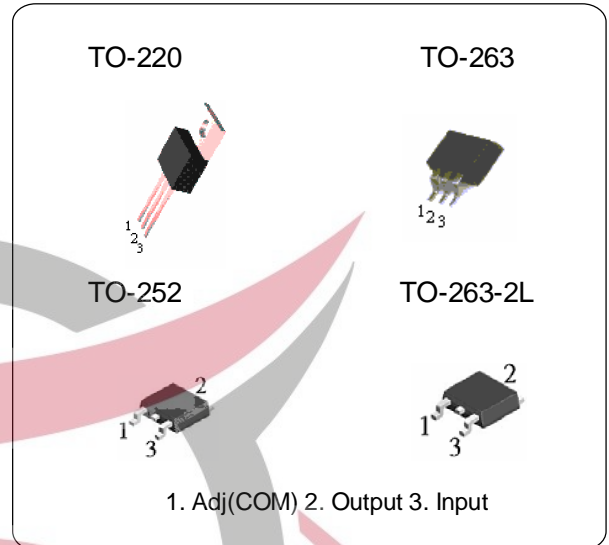
LM1084-XX

Features

1. Dropout Voltage 1.3V at 5A Output Current.
2. Fast Transient Response.
3. Extremely Tight Line and Load Regulation.
4. Current Limiting and Thermal Protection.
5. Adjustable Output Voltage or Fixed 1.5V, 1.8V, 2.5V, 3.3V, 5.0V.
6. Standard 3-Pin Power Packages.

DESCRIPTION

The LM1084 is a low dropout three terminal regulator with 5A output current capability. The output voltage is adjustable with the use of a resistor divider or fixed 1.5V, 1.8V, 2.5V, 3.3V and 5.0V. Dropout voltage is guaranteed to be at maximum of 1.4V with the maximum output current. Its low dropout voltage and fast transient response make it ideal for low voltage microprocessor applications. Current limit and thermal protection provide protection against any overload condition that would create excessive junction temperatures.



Electrical Characteristics (Ta = 25 °C)

(VIN=5V, TJ=25° C, IO=10mA, unless otherwise specified) (Note1)

| PARAMETER | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|--------------------------------------|--|-------|-------|-------|------|
| Reference Voltage | LM1084 (ADJ) | 1.225 | 1.25 | 1.275 | V |
| | LM1084-15, VIN=4.5V | 1.470 | 1.50 | 1.530 | |
| | LM1084-18, VIN=4.8V | 1.764 | 1.80 | 1.836 | |
| | LM1084-25, VIN=5.5V | 2.450 | 2.50 | 2.55 | |
| | LM1084-33, VIN=6.3V | 3.235 | 3.30 | 3.365 | |
| Line Regulation | ADJ : 2.65V ≤ VIN ≤ 7V VOUT=1.25V | - | 0.015 | 0.2 | % |
| | Fix : VOUT+1.4V ≤ VIN ≤ 7V | | | | |
| Load Regulation | 10mA < IO < 5A | | | 0.6 | % |
| Dropout Voltage | ΔVOUT, ΔVREF=1% 10mA ≤ IO ≤ 5A | | 1.3 | 1.4 | V |
| Current Limit | | 5.0 | 6.0 | | A |
| GND Current (Fix) | 2.65V ≤ VIN ≤ 7V | 2.0 | | 10 | mA |
| Adjusted Pin Current | 2.65V ≤ VIN ≤ 7V | | 55 | 120 | uA |
| Adjusted Pin Current Change (Δ IADJ) | 2.65V ≤ VIN ≤ 7V | | 0.2 | 5.0 | uA |
| Temperature Stability | IO=0.5A | | 0.5 | | % |
| Minimum Load Current | | | 5.0 | 10 | mA |
| RMS Output Noise (% of VOUT) | | | 0.003 | | % |
| Ripple Rejection Ratio | 120Hz input ripple COUT=25 μ F (VIN-VOUT)=3V | 60 | 72 | | dB |

Note:

Specifications are production tested at TA=25° C. Specifications over the -40° C to 85° C operating temperature range are assured by design, characterization and correlation with Statistical Quality Controls (SQC).