



 [Products](#) > [Analog - Regulators](#) > [Linear Regulators - Standard/NPN](#) > [Positive Voltage - Adjustable](#) > **LM117**

LM117 Product Folder

3-Terminal Adjustable Regulator

General Description	Features	Datasheet	Package & Models	Samples & Pricing	Application Notes
-------------------------------------	--------------------------	---------------------------	--------------------------------------	---------------------------------------	-----------------------------------

Parametric Table

Temperature Min (deg C)	-55
Temperature Max (deg C)	125
Multiple Output Capability	No
On/Off Pin	No
Error Flag	No
InputMin Voltage (Volt)	4.20

Parametric Table

InputMax Voltage (Volt)	40
Output Current (mA)	500, 1500
Watchdog	No
RegType	Linear Regulator
Output Min (Volt)	1.20
Output Max (Volt)	37

Datasheet

	Size in Kbytes	Date	 View Online	 Download	 Receive via Email
LM117/LM317A/LM317 3-Terminal Adjustable Regulator	1136 Kbytes	7-Jun-05	View Online	Download	Receive via Email
LM117 Mil-Aero (JAN) Datasheet MJLM117-H	120 Kbytes		View Online	Download	Receive via Email
LM117 Mil-Aero (JAN) Datasheet MJLM117-K	128 Kbytes		View Online	Download	Receive via Email

JM38510/11703BXA	TO-39	3	MSL/RoHS	Full production		N/A	N/A		50 +		tray of 20	NS ZSSXXYYA 27014 QL JM38510/11703BXA >
				8 weeks	100							
JM38510/11704BYA	TO-3	2	MSL/RoHS	Full production		N/A	N/A		50 +		tray of 50	NSZSSXXYYA JM38510/ 11704BYA 27014 QS >
				8 weeks	100							
JM38510/11703SXA	TO-39	3	MSL/RoHS	Full production		N/A	N/A		50 +		tray of 20	NS ZSSXXYYA> JM38510/11703SXA
				N/A	N/A							
5962R9951703VXA	TO-39	3	MSL/RoHS	Full production		N/A	N/A		50 +		tray of 20	NSZSSXXYYA 03VXA LM117HRQMLV >
				N/A	N/A							
JM38510/11704SYA	TO-3	2	MSL/RoHS	Full production		N/A	N/A		50 +		tray of 50	NSZSSXXYYA JM38510/ 11704SYA 27014 Q>
				N/A	N/A							
LM117KRQMLV	TO-3	2	MSL/RoHS	Full production		N/A	N/A		50 +		tray of 50	NSZSSXXYYA 5962R99517 04VYA LM11 7KRQMLV >
				N/A	N/A							
5962-9951703VZA	CERPACK	16	MSL/RoHS	Full production		N/A	N/A		50 +		tray of 42	NSZSSXXYYA> LM117WG- QMLV 5962- 9951703VZA
				N/A	N/A							
5962R9951703VZA	CERPACK	16	MSL/RoHS	Full production		N/A	N/A		50 +		tray of 42	NSZSSXXYYA> LM117WGR QMLV 5962R 9951703VZA
				N/A	N/A							
LM117H MD8	Unpackaged Die			Full production		N/A	N/A				tray of N/A	-
				N/A	N/A							
LM117H MDS	Unpackaged Die			Full production		N/A	N/A				tray of N/A	-
				N/A	N/A							
LM117K MDS	Unpackaged Die			Full production		N/A	N/A				tray of N/A	-
				N/A	N/A							

LM117KG MD8	Unpackaged Die	Full production		N/A	N/A				tray of N/A	-
		N/A	N/A							
LM117H MW8	Wafer	Full production		N/A	N/A				wafer jar of N/A	-
		N/A	N/A							
LM117KG MW8	Wafer	Full production		N/A	N/A				wafer jar of N/A	-
		N/A	N/A							

Obsolete Parts

Obsolete Part	Alternate Part or Supplier	Source	Last Time Buy Date
LM117AH	LM117H	NATIONAL SEMICONDUCTOR	06/14/94
LM117AH/883	LM117H/883	NATIONAL SEMICONDUCTOR	10/01/94
LM117AK	LM117K STEEL	NATIONAL SEMICONDUCTOR	06/14/94
LM117AK/883	LM117K/883	NATIONAL SEMICONDUCTOR	10/01/94
LM117H-MLS	JL117SXA	NATIONAL SEMICONDUCTOR	12/08/98
LM117H-SMD	LM177H/883	NATIONAL SEMICONDUCTOR	12/16/98
LM117HVH-SMD	LM117HVH/883	NATIONAL SEMICONDUCTOR	12/16/98
LM117HVK-SMD	LM117HVK/883	NATIONAL SEMICONDUCTOR	12/16/98
LM117HVK STEEL	LM317HVK STEEL	NATIONAL SEMICONDUCTOR	07/15/95
LM117HVKG MW8	LM117HVK/883	NATIONAL SEMICONDUCTOR	03/06/2001
LM117K-SMD	LM117K/883	NATIONAL SEMICONDUCTOR	12/16/98

General Description

The LM117 series of adjustable 3-terminal positive voltage regulators is capable of supplying in excess of 1.5A over a 1.2V to 37V output range. They are exceptionally easy to use and require only two external resistors to set the output voltage. Further, both line and load regulation are better than standard fixed regulators. Also, the LM117 is packaged in standard transistor packages which are easily mounted and handled.

In addition to higher performance than fixed regulators, the LM117 series offers full overload protection available only in IC's. Included on the chip are current limit, thermal overload protection and safe area protection. All overload protection circuitry remains fully functional even if the adjustment terminal is disconnected.

Normally, no capacitors are needed unless the device is situated more than 6 inches from the input filter capacitors in which case an input bypass is needed. An optional output capacitor can be added to improve transient response. The adjustment terminal can be bypassed to achieve very high ripple rejection ratios which are difficult to achieve with standard 3-terminal regulators.

Besides replacing fixed regulators, the LM117 is useful in a wide variety of other applications. Since the regulator is "floating" and sees only the input-to-output differential voltage, supplies of several hundred volts can be regulated as long as the maximum input to output differential is not exceeded, i.e., avoid short-circuiting the output.

Also, it makes an especially simple adjustable switching regulator, a programmable output regulator, or by connecting a fixed resistor between the adjustment pin and output, the LM117 can be used as a precision current regulator. Supplies with electronic shutdown can be achieved by clamping the adjustment terminal to ground which programs the output to 1.2V where most loads draw little current.

For applications requiring greater output current, see LM150 series (3A) and LM138 series (5A) data sheets. For the negative complement, see LM137 series data sheet.

Features

- Guaranteed 1% output voltage tolerance (LM317A)
- Guaranteed max. 0.01%/V line regulation (LM317A)
- Guaranteed max. 0.3% load regulation (LM117)
- Guaranteed 1.5A output current
- Adjustable output down to 1.2V
- Current limit constant with temperature
- P+ Product Enhancement tested
- 80 dB ripple rejection
- Output is short-circuit protected

Application Notes

Title	Size in Kbytes	Date	 View Online	 Download	 Receive via Email

AN-1148: Application Note 1148 Linear Regulators: Theory of Operation and Compensation	200 Kbytes	25-Sep-02	View Online	Download	Receive via Email
AN-1149: Application Note 1149 Layout Guidelines for Switching Power Supplies	113 Kbytes	26-Sep-02	View Online	Download	Receive via Email
Application Note 1149 Layout Guidelines for Switching Power Supplies (JAPANESE) 本サイトの日本語版データシートは最新版ではない場合があります。ご検討およびご採用にあたっては、最新の英語版データシートを必ずご確認ください。	90 Kbytes		オンラインで見る	ダウンロード	Eメールで受けとる
AN-173: Application Note 173 IC Zener Eases Reference Design	83 Kbytes	1-Oct-02	View Online	Download	Receive via Email
AN-178: Application Note 178 Applications for an Adjustable IC Power Regulator	115 Kbytes	3-Oct-02	View Online	Download	Receive via Email
AN-181: Application Note 181 3-Terminal Regulator is Adjustable	165 Kbytes	3-Oct-02	View Online	Download	Receive via Email
AN-182: Application Note 182 Improving Power Supply Reliability with IC Power Regulators	56 Kbytes	3-Oct-02	View Online	Download	Receive via Email
AN-556: Application Note 556 Introduction to Power Supplies	159 Kbytes	25-Sep-02	View Online	Download	Receive via Email
Application Note 556 Introduction to Power Supplies (JAPANESE) 本サイトの日本語版データシートは最新版ではない場合があります。ご検討およびご採用にあたっては、最新の英語版データシートを必ずご確認ください。	171 Kbytes		オンラインで見る	ダウンロード	Eメールで受けとる
LB-35: Linear Brief 35 Adjustable 3-Terminal Regulator for Low-Cost Battery Charging Systems	70 Kbytes	3-Oct-02	View Online	Download	Receive via Email
LB-46: Linear Brief 46 A New Production Technique for Trimming Voltage Regulators	71 Kbytes	3-Oct-02	View Online	Download	Receive via Email
LB-47: Linear Brief 47 High Voltage Adjustable Power Supplies	52 Kbytes	3-Oct-02	View Online	Download	Receive via Email

If you have trouble printing or viewing PDF file(s), see [Printing Problems](#).

[Information as of 24-Oct-2005]