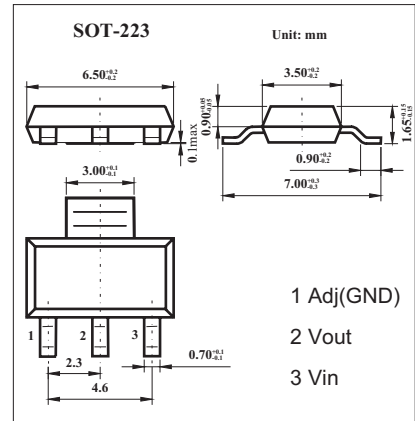




## 1A Low Dropout Positive Adjustable or Fixed-Mode Regulator LMT1117

### ■ Features

- Low dropout voltage
- Maximum output current is 1A
- Output voltage accuracy is within  $\pm 2\%$
- Line regulation: 0.2%
- Load regulation: 0.4%
- Environment Temperature Ta:  $-20^{\circ}\text{C} \sim 70^{\circ}\text{C}$

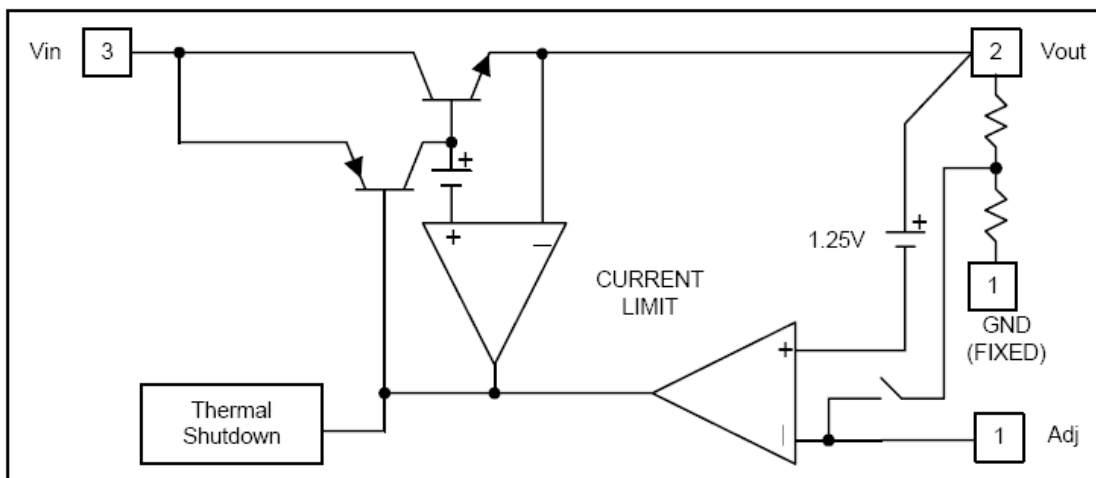


### ■ Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Maximum Input Voltage	V <sub>in</sub>	15	V
Power Dissipation	P <sub>D</sub> *	Internally Limited	w
Operating Junction Temperature Range	T <sub>J</sub>	125	°C
Storage Temperature	T <sub>ST</sub>	-65 to +150	°C
Thermal Resistance	R <sub>θJC</sub>	20	°C/W

Note:\* The actual PD by external environment temperature and package size and PCB copper foil area cooling condition factors.

### ■ Block Diagram



## LMT1117

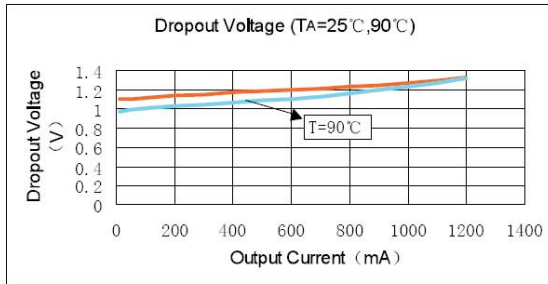
## ■ Electrical Characteristics Ta = 25°C

Parameter		Test conditions	Min	Typ	Max	Unit
Reference Voltage	Vref	LMT1117-ADJ 10mA ≤ Iout ≤ 1A, 1.5V ≤ Vin - Vout ≤ 12V	1.225	1.250	1.275	V
Output Voltage	Vout	LMT1117-1.2 0 ≤ Iout ≤ 1A, 2.6V ≤ Vin ≤ 12V	1.175	1.200	1.225	V
		LMT1117-1.5 0 ≤ Iout ≤ 1A, 2.9V ≤ Vin ≤ 12V	1.470	1.500	1.530	V
		LMT1117-1.8 0 ≤ Iout ≤ 1A, 3.2V ≤ Vin ≤ 12V	1.764	1.800	1.836	V
		LMT1117-1.9 0 ≤ Iout ≤ 1A, 3.3V ≤ Vin ≤ 12V	1.862	1.900	1.938	V
		LMT1117-2.5 0 ≤ Iout ≤ 1A, 3.9V ≤ Vin ≤ 12V	2.450	2.500	2.550	V
		LMT1117-2.85 0 ≤ Iout ≤ 1A, 4.25V ≤ Vin ≤ 12V	2.79	2.85	2.907	V
		LMT1117-3.3 0 ≤ Iout ≤ 1A, 4.75V ≤ Vin ≤ 12V	3.234	3.300	3.366	V
		LMT1117-5.0 0 ≤ Iout ≤ 1A, 6.5V ≤ Vint ≤ 12V	4.900	5.000	5.100	V
Line Regulation	ΔVout	LMT1117-ADJ Iout=10mA, 1.5V ≤ Vin - Vout ≤ 13.775V		0.035	0.2	%
		LMT1117-1.2 Iout=10mA, 2.6V ≤ Vin ≤ 15V		9	12	mV
		LMT1117-1.5 Iout=10mA, 2.9V ≤ Vin ≤ 15V		9	12	mV
		LMT1117-1.8 Iout=10mA, 3.2V ≤ Vin ≤ 15V		9	12	mV
		LMT1117-1.9 Iout=10mA, 3.3V ≤ Vin - Vout ≤ 15V		9	12	mV
		LMT1117-2.5 Iout=10mA, 3.9V ≤ Vin - Vout ≤ 15V		9	12	mV
		LMT1117-2.85 Iout=10mA, 4.25V ≤ Vin ≤ 15V		9	12	mV
		LMT1117-3.3 Iout=10mA, 4.75V ≤ Vin ≤ 15V		9	12	mV
LMT1117-5.0 Iout=10mA, 6.5V ≤ Vin ≤ 15V		9	12	mV		
Load Regulation	ΔVout	LMT1117-ADJ Vin - Vout = 3V, 10mA ≤ Iout ≤ 1A		0.2	0.4	%
		LMT1117-1.2 Vin = 2.6V, 0 ≤ Iout ≤ 1A		3	10	mV
		LMT1117-1.5 Vin = 2.9V, 0 ≤ Iout ≤ 1A		3	10	mV
		LMT1117-1.8 Vin = 3.2V, 0 ≤ Iout ≤ 1A		3	10	mV
		LMT1117-1.9 Vin = 3.3V, 0 ≤ Iout ≤ 1A		3	10	mV
		LMT1117-2.5 Vin = 3.9V, 0 ≤ Iout ≤ 1A		3	10	mV
		LMT1117-2.85 Vin = 4.25V, 0 ≤ Iout ≤ 1A		3	10	mV
		LMT1117-3.3 Vin = 4.75V, 0 ≤ Iout ≤ 1A		3	10	mV
LMT1117-5.0 Vin = 6.5V, 0 ≤ Iout ≤ 1A		3	10	mV		
Dropout Voltage	Vin - Vout	LMT1117-ADJ ΔVout, ΔVref = 1%, Iout = 100mA		1.11	1.2	V
		LMT1117-XXX ΔVout, ΔVref = 1%, Iout = 500mA		1.18	1.25	V
		LMT1117-XXX ΔVout, ΔVref = 1%, Iout = 1A		1.26	1.3	V
Current Limit	Ilimit	LMT1117-XXX Vin - Vout = 5V, Tj = 25°C	1.25	1.4	1.6	A
Minimum Load Current		LMT1117-XXX LMT1117-ADJ		5	10	mA
Quiescent current	Iq	LMT1117-1.2 Vin - Vout = 1.25V		4	8	mA
		LMT1117-1.5 Vin - Vout = 1.25V		4	8	mA
		LMT1117-1.8 Vin - Vout = 1.25V		4	8	mA
		LMT1117-1.9 Vin - Vout = 1.25V		4	8	mA
		LMT1117-2.85 Vin - Vout = 1.25V		4	8	mA
		LMT1117-2.5 Vin - Vout = 1.25V		4	8	mA
		LMT1117-3.3 Vin - Vout = 1.25V		4	8	mA
LMT1117-5.0 Vin - Vout = 1.25V		4	8	mA		
Adjust Pin Current (Adjustable Version)	Iadj			55	120	μA
Adjust Pin Current Change	Ichange			0.2		μA

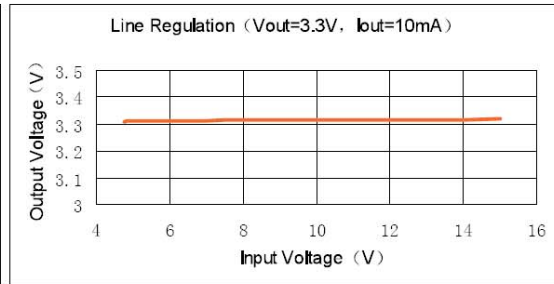
# LMT1117

## Typical Characteristics

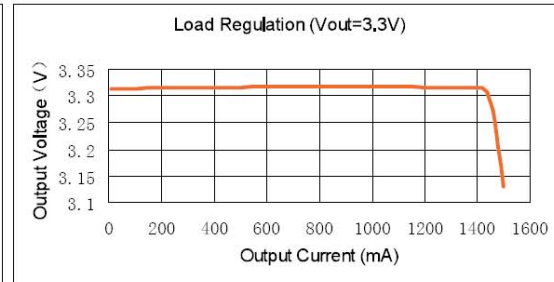
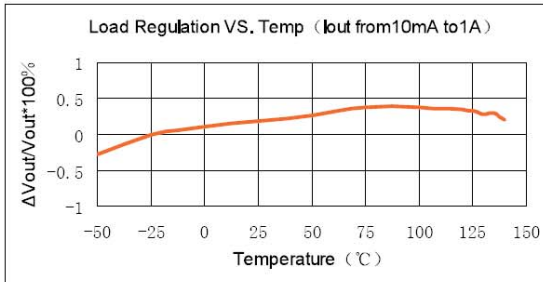
Dropout Voltage



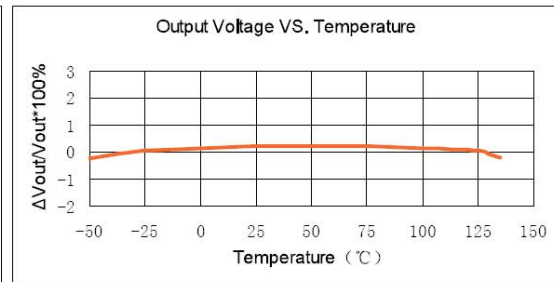
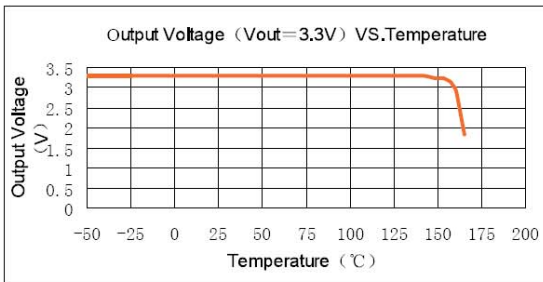
Line Regulation



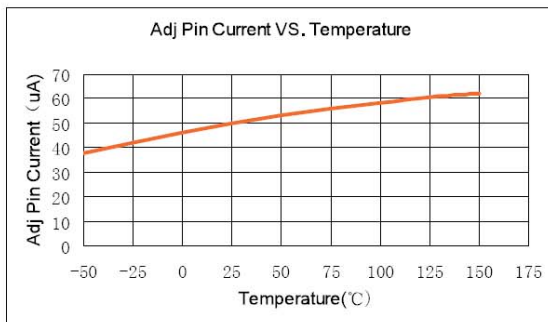
Load Regulation



Temperature Stability



Pin Current VS. Temperature



Load Transient Response

