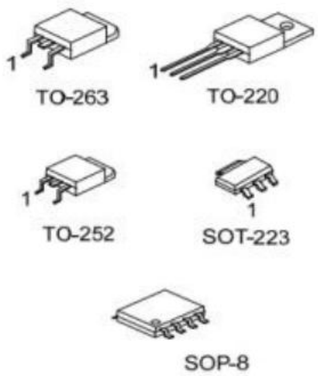
General Description

The XBLW LM317M is an adjustable 3-terminal positive voltage regulator , designed to supply 500mA of output current with voltage adjustable from 1 . 25V ~ 37V。

Features

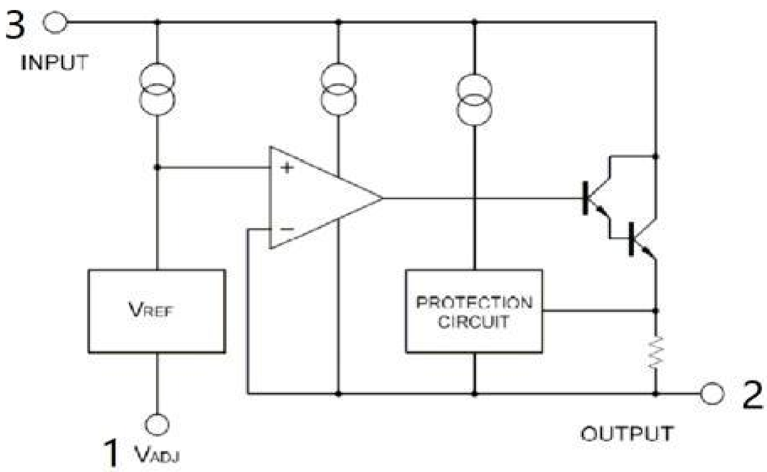
- Output Voltage Adjustable From 1 . 25V ~ 37V
- Output Current In Excess of 500mA
- Internal Thermal Overload Protection
- Internal Short Circuit Current Limiting
- Output Transistor Safe Area Compensation



Ordering Information

Product Model	Package Type	Marking	Packing	Packing Qty
XBLW LM317M	TO-220	LM317M	Tabe	1000PCS/Box
XBLW LM317MCDTR	TO-263	LM317M	Tape	1000PCS/Reel
XBLW LM317MGDTR	TO-252	LM317M	Tape	2500PCS/Reel
XBLW LM317MTDTR	SOT-223	LM317M	Tape	2500PCS/Reel
XBLW LM317MSDTR	SOP-8	LM317M	Tape	2500PCS/Reel

Block Diagram



Absolute Maximum Ratings (Ta=25°C) *

Characteristic	Symbol	Prtings	Unit
Input - Output Voltage Difference	V_{IN}-V_{OUTt}	40	V
Power Dissipation	P_D	Internal limited	W
Junction Temperature	T_J	+150	℃
Operating Temperature	T_{OPR}	-40~+125	℃
Storage temperature	T_{STG}	-40~+150	℃

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged . Absolute maximum ratings are stress ratings only and functional device operation is not implied.

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Parameter		Symbol	Patings	Unit
Junction to Ambient	SOT223	θ$_{JA}$	165	℃/W
	SOP8		175	
	TO220/TO263		65	
	TO252		112	
Junction to Case	SOT223	θ$_{JC}$	24	℃/W
	SOP8		27	
	TO220/TO263		5.5	
	TO252		13	

Electrical Characteristics(VIN -VOUT= 5V , IOUT = 0.1A ,Ta = 25 ° C , unless other wise specified .)

(V_{IN}-V_{OUT}=5V, I_{OUT}=0.1A, T_A=25°C, unless otherwise specified.)

PARAMETER	SYMBOL	TEST CONDITIONS		MIN	TYP	MAX	UNIT
Line Regulation	$\Delta V_{OUT}/V_{OUT}$	3V≦V_{IN}-V_{OUT}≦40V			0.01	0.04	%/V
Load Regulation	ΔV_{OUT}	10mA≦I_{OUT}≦0.5A	V_{OUT}≦5V		5	25	mV
			V_{OUT}≧5V		0.1	0.5	%
Adjustable Pin Current	I_{ADJ}				50	100	μA
Adjustable Pin Current Change	ΔI_{ADJ}	3V≦V_{IN}-V_{OUT}≦40V, 10mA≦I_{OUT}≦0.5A, P_D<7.5W			0.2	5	μA
Reference Voltage	V_{REF}	3V≦V_{IN}-V_{OUT}≦40V, 10mA≦I_{OUT}≦0.5A, P_D<7.5W		1.20	1.25	1.30	V
Temperature Stability		T_{MIN}≦T_J≦T_{MAX}			0.7		%/V_{OUT}
Minimum Load Current for Regulation	$I_{L(MIN)}$	V_{IN}-V_{OUT}=40V			3.5	10	mA
Maximum Output Current	$I_{O(MAX)}$	V_{IN}-V_{OUT}=40V, P_D≦7.5W		0.1	0.2		A
RMS Noise vs. %of V_{OUT}	eN	10Hz≦f≦10KHz			0.003		%/V_{OUT}
Ripple Rejection	RR	V_{OUT}=10V,f=120Hz	C_{ADJ}=0		65		dB
			C_{ADJ}=10μF	66	80		

Note: CADJ is connected between Adjust pin and Ground

Application Circui

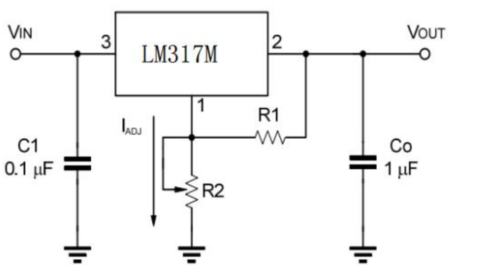


Fig.1 Programmable voltage regulator

VOUT= 1.25V*(1+R2/R1)+I_{ADJ}*R2
C1 is required when regulator is located an appreciated distance from power supply. Co is needed to improve transient response.

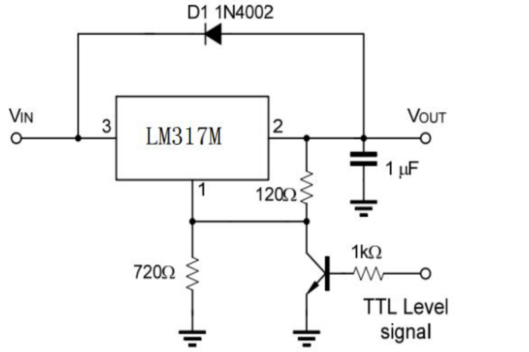


Fig.2 Regulator with On-off control

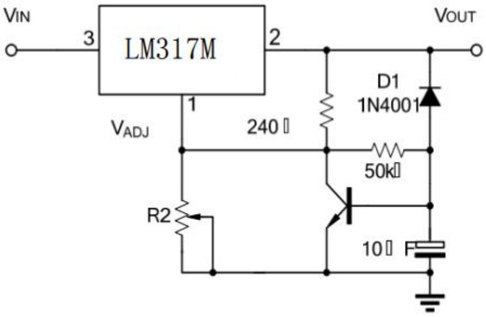
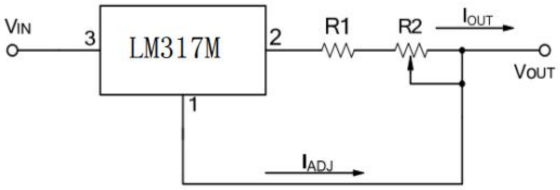


Fig.3 Soft Start Application

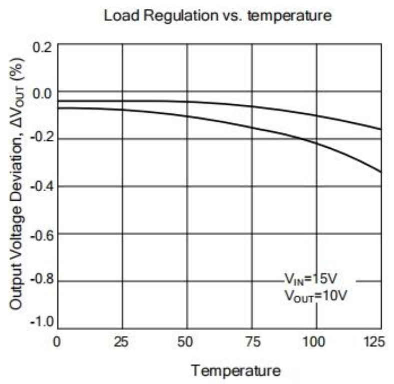


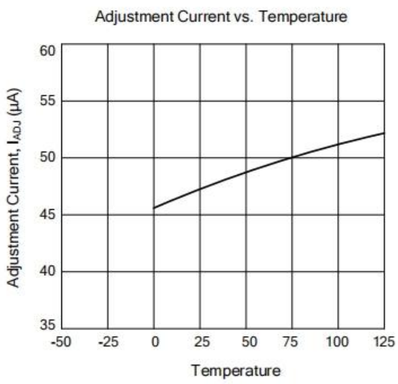
$$I_{O(MAX)}=\left(\frac{V_{REF}}{R1}\right)+I_{ADJ}=\frac{1.25V}{R1}$$

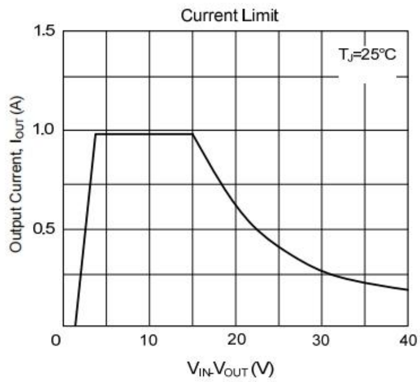
$$I_{O(MIN)}=\left(\frac{V_{REF}}{R1+R2}\right)+I_{ADJ}=\frac{1.25V}{R1+R2}$$

Fig.4 Constant Current Application

Characteristic Curve







Statement：

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✧ Any semiconductor product is liable to fail or malfunction under certain conditions, and the buyer shall be responsible for complying with safety standards in the system design and whole machine manufacturing using Shenzhen xinbole electronics co., ltd products, and take appropriate security measures to avoid the potential risk of failure may result in personal injury or property losses of the situation occurred!

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