

## GJLM317

### 3-TERMINAL 1.5A POSITIVE ADJUSTABLE VOLTAGE REGULATOR

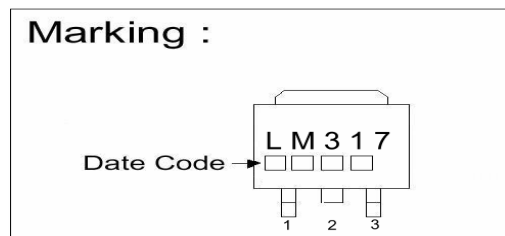
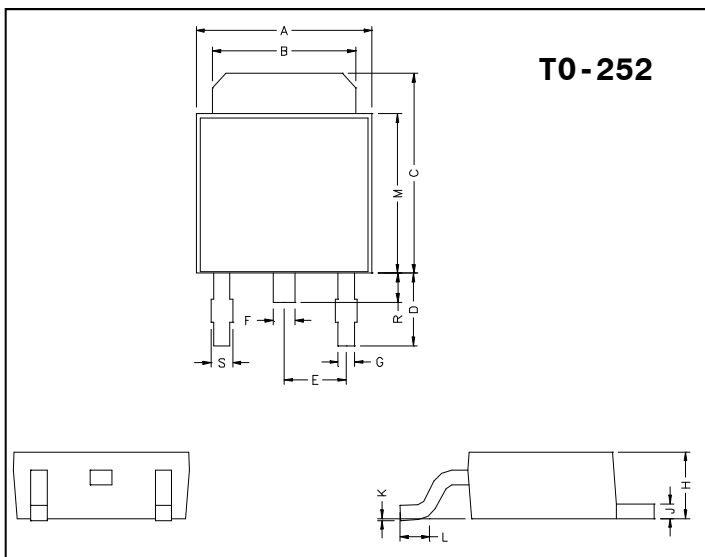
#### Description

The GJLM317 is an adjustable 3-terminal positive voltage regulator, designed to supply more than 1.5A of output current with voltage adjustable from 1.3 to 37V.

#### Features

- \*Output current up to 1.5A.
- \*Output voltage adjustable from 1.3V to 37V.
- \*Internal short circuit protection.
- \*Internal over temperature protection.
- \*Safe-Area compensation for output transistor.

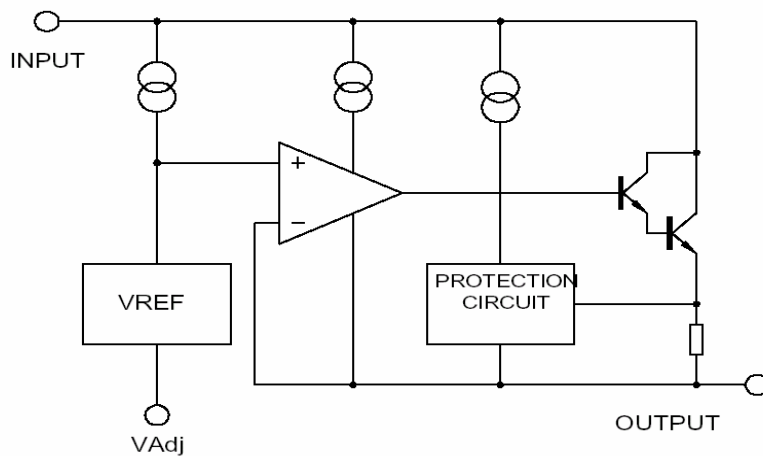
#### Package Dimensions



1.ADJ    2.Output    3.Input

REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	6.40	6.80	G	0.50	0.70
B	5.20	5.50	H	2.20	2.40
C	6.80	7.20	J	0.45	0.55
D	2.20	2.80	K	0	0.15
E	2.30 REF.		L	0.90	1.50
F	0.70	0.90	M	5.40	5.80
S	0.60	0.90	R	0.80	1.20

#### BLOCK DIAGRAM



## Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Ratings	Unit
Input-Output Voltage Difference	Vi-Vo	40	V
Load Temperature	TLEAD	230	°C
Power Dissipation	PD	Internal limited	
Operating Temperature Range	TOPR	0~125	°C
Storage Temperature Range	TSTG	-65 ~ 150	°C

## Electrical Characteristics at Ta = 25°C

(VI-VO=5V, 0°C<Tj<125°C, IO=500mA, IMAX=1.5A, PMAX=20W, unless otherwise specified)

PARAMETER	Symbol	Test Conditions	MIN	TYPE	Max.	UNIT
Line Regulation	ΔVO	Ta=25°C, 3V<=VI-VO=40V		0.01	0.04	%V
		Ta=0-125°C, 3V<=VI-VO<=40V		0.02	0.07	%V
Load Regulation	ΔVO	Ta=25°C		18	25	mV
		10mA<=IO<=IMAX	VO>=5V	0.4	0.5	%VO
		10mA<=IO<=IMAX	VO<=5V	40	70	mV
		VO>=6V	0.8	1.5	%VO	
Adjustable Pin Current	IADJ			46	100	uA
Adjustable Pin Current Change	ΔIADJ	2.5V<=VI-VO<=40V , 10mA<=IO<=IMAX, PD<=PMAX		2.0	5	uA
Reference Voltage	VREF	3V<=VI-VO<=40V, 10mA<=IO<=IMAX, PD<=PMAX	1.20	1.25	1.30	V
Temperature Stability	STT			0.7		%VO
Minimum Load Current for Regulation	IL(MIN)	VI-VO=40V		3.5	10	mA
Maximum Output Current	IO(MAX)	VI-VO<=15V, PD<=PMAX	1.5	2.2		A
		VI-VO<=15V, PD<=PMAX, Ta=25°C	0.15	0.4		
RMS Noise v.s.%of Vout	eN	TA=25°C, 10HZ<=f<=10KHZ		0.003	0.01	%VO
Ripple Rejection	RR	VO=10V, f=120HZ,		60		dB
		VO=10V, f=120HZ, CADJ=10uF	66	75		
Long-term Stability, TJ=THIGH	ST	TA=25°C, 1000hr		0.3	1	%
Junction to Case Thermal Resistance	R θ JC			5		°C/W

\*Note: Testing with low duty pulse should be used to avoid heating effect.

## Characteristics Curve

Fig.1. Load Regulation vs temperature

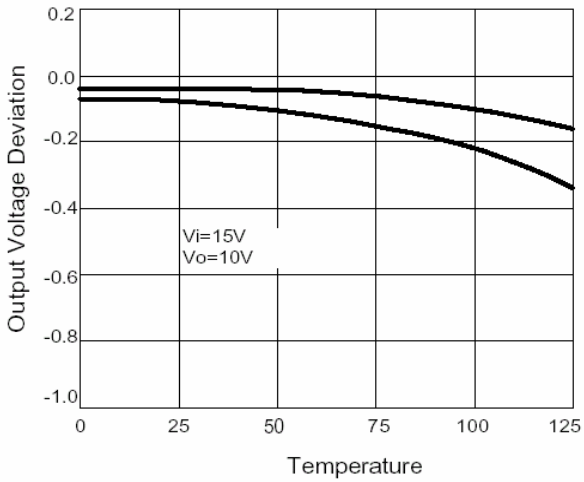


Fig.2 Adjustment Current vs Temperature

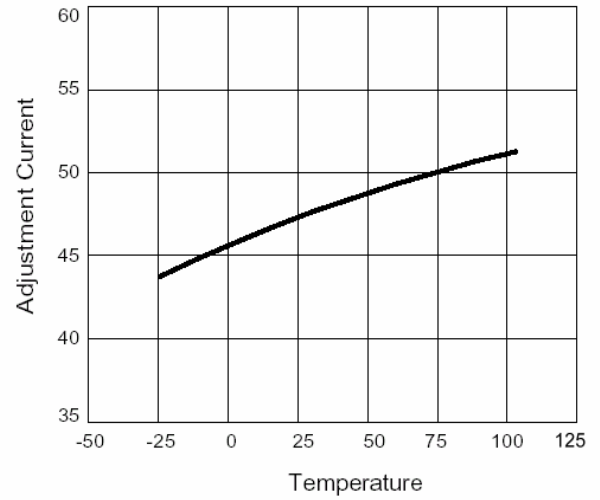


Fig.3. Dropout Voltage vs Input-Output Voltage Difference

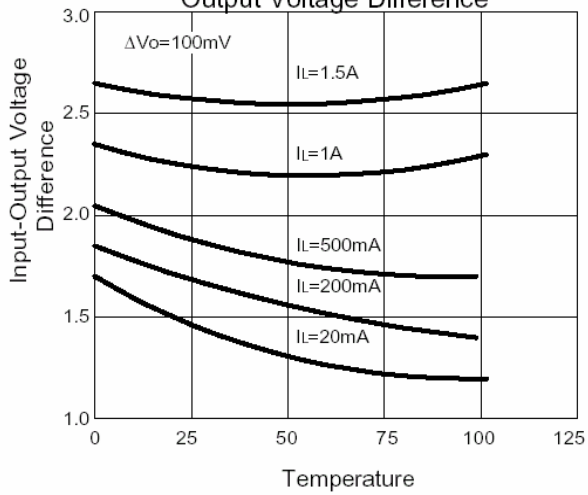
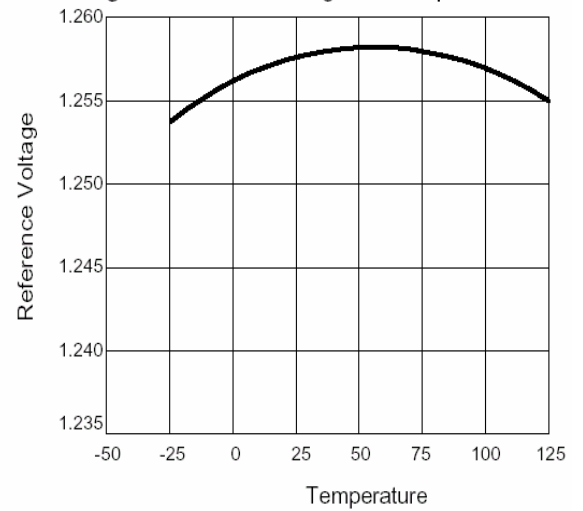


Fig.4 Reference Voltage vs Temperature



## Application Circuit

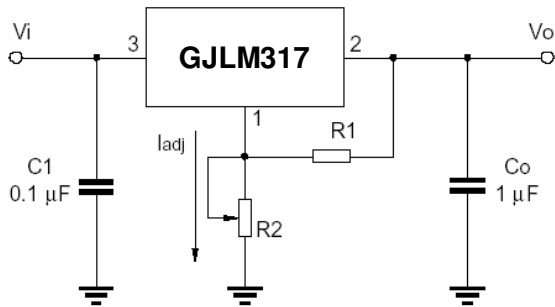


Fig.5 Programmable voltage regulator  
 $V_o = 1.25V * (1 + R_2/R_1) + I_{adj} * R_2$   
 C1 is required when regulator is located an appreciated distance from power supply. Co is needed to improve transient response.

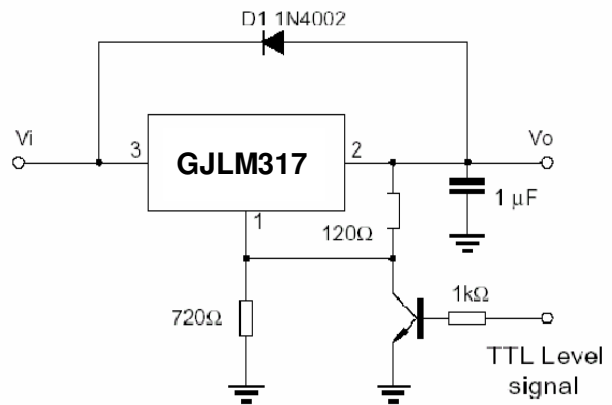


Fig.6 Regulator with On-off control

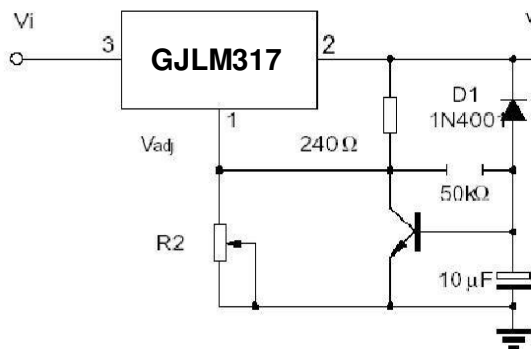


Fig.7 Soft start application

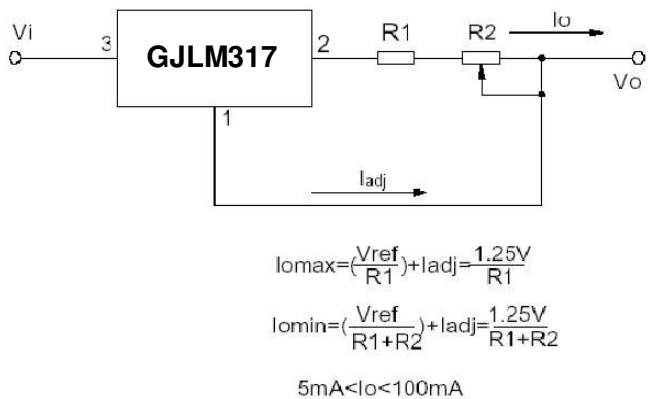


Fig.8 Constant current application

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