GJLM317

3-TERMINAL 1.5A POSITIVE ADJUSTABLE VOLTAGE REGULATOR

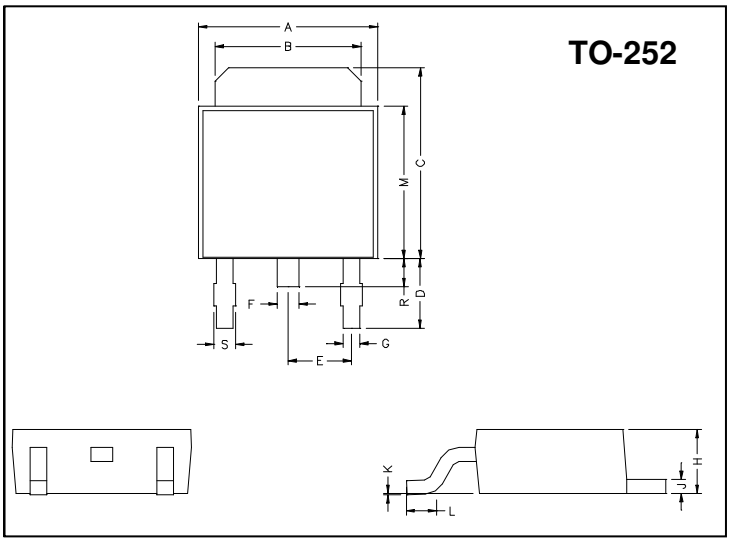
Description

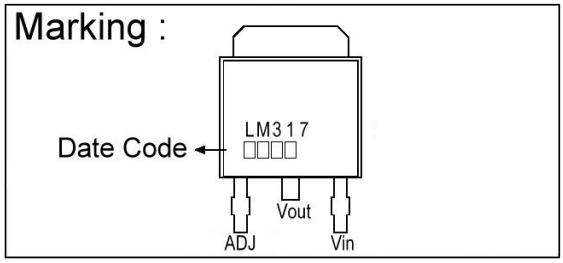
The GJLM317 is an adjustable 3-termial positive voltage regulator, designed to supply more than 1.5A of output current with voltage adjustable from 1.3 to 37V.

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.

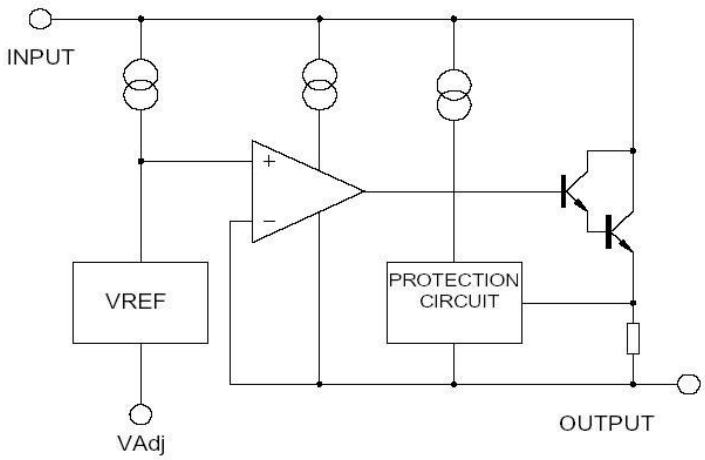
Package Dimensions





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	2.40	3.00	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

Parameter	Symbol	Ratings	Unit
Input-Output Voltage Difference	Vi-Vo	40	V
Load Temperature	Tlead	230	:
Power Dissipation	PD	Internal limited	
Operating Temperature Range	Topr	0~+125	
Storage Temperature Range	Tstg	-65~+150	

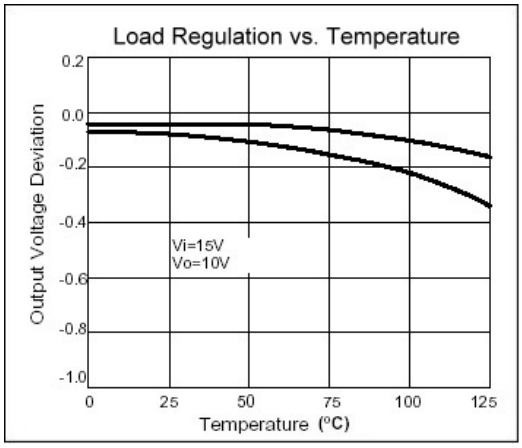
Electrical Characteristics

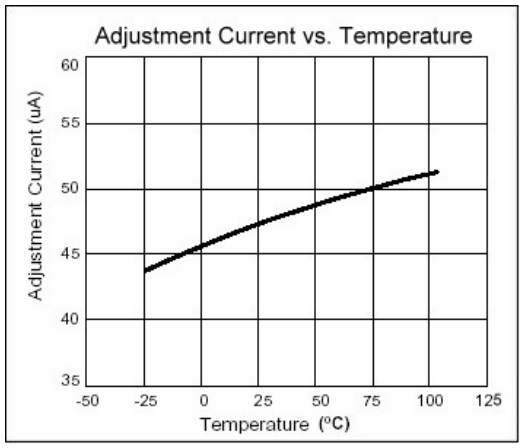
(Vi-Vo=5V, 0 : < Tj < 125 : , Io=500mA, IMax= 1.5A, PMax=20W, unless otherwise specified)

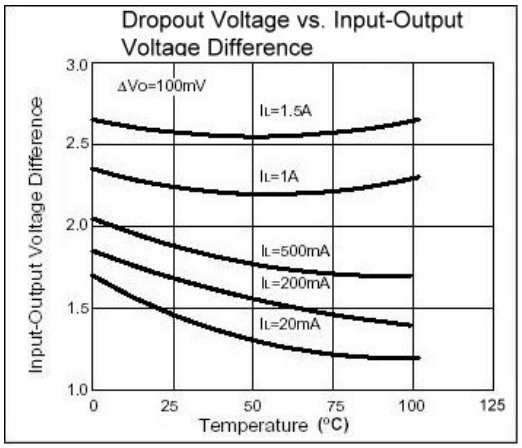
Parameter	Symbol	Test Conditions		Min	TYP	Max	Unit
Line Regulation	ΔVo	Ta=25 : , 3V ≤ Vi-Vo ≤ 40V		-	0.01	0.04	%/V
		Ta=0~125 : , 3V ≤ Vi-Vo ≤ 40V		-	0.02	0.07	%/V
Load Regulation	ΔVo	Ta=25 :	Vo ≤ 6V	-	18	25	mV
		10mA ≤ Io ≤ IMax	Vo ≥ 5V	-	0.4	0.5	%/Vo
		10mA ≤ Io ≤ IMax	Vo ≤ 5V	-	40	70	mV
			Vo ≥ 6V	-	0.8	1.5	%/Vo
Adjustable Pin Current	IADJ			-	46	100	μA
Adjustable Pin Current Change	ΔIADJ	2.5V ≤ Vi-Vo ≤ 40V, 10mA ≤ Io ≤ IMax, PD ≤ PMax		-	2.0	5	μA
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 :		0.15	0.4	-	
RMS Noise v.s. % of Vout	eN	Ta=25 : , 10Hz ≤ f ≤ 10KHz		-	0.003	0.01	%/Vo
Ripple Rejection	RR	Vo=10V, f=120Hz		-	60	-	dB
		Vo=10V, f=120Hz, Cadj=10μF		66	75	-	
Long-term Stability, Tj=Thigh	ST	Ta=25 : ,1000hr		-	0.3	1	%
Junction to Case Thermal Resistance	Rθjc	-		-	5	-	: /W

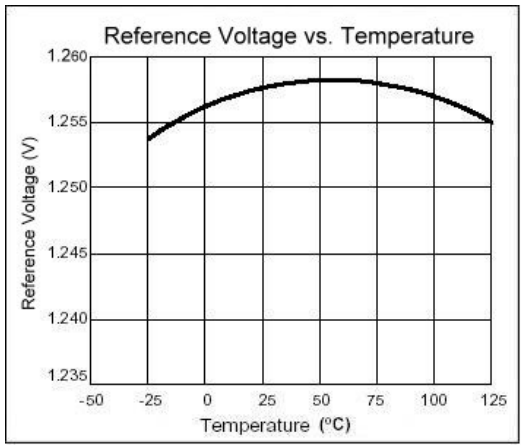
*Note: Testing with low duty pulse should be used to avoid heating effect.

Characteristics Curve









Application Circuit

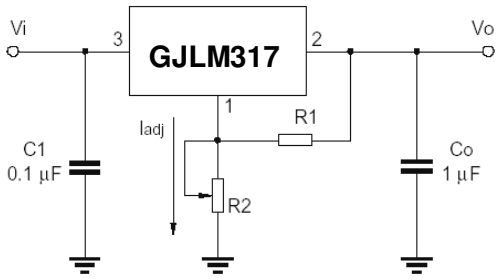


Fig.1 Programmable voltage regulator
Vo=1.25V*(1+R2/R1)+Iadj*R2
C1 is required when regulator is located an appreciated distance from power supply. Co is needed to improve transient response.

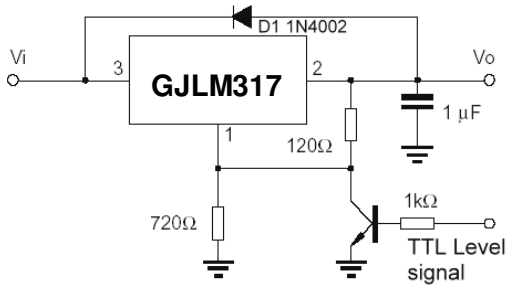


Fig.2 Regulator with On-off control

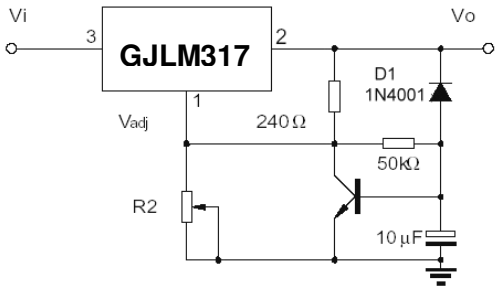


Fig.3 Soft start application

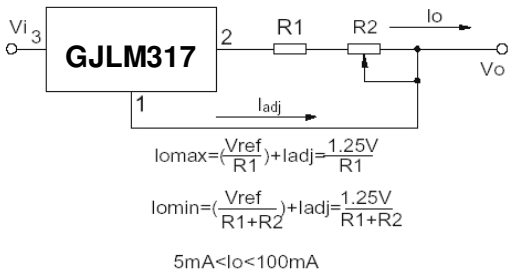


Fig.4 Constant current application

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