GULM317

3-TERMINAL 1.5A POSITIVE ADJUSTABLE VOLTAGE REGULATOR

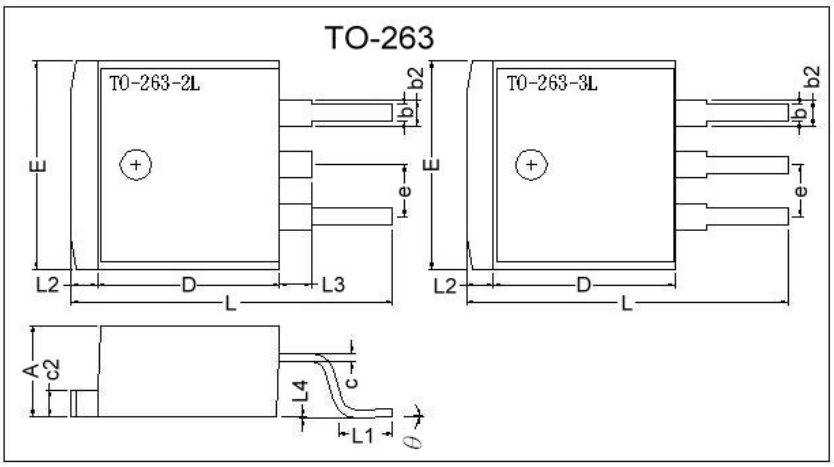
Description

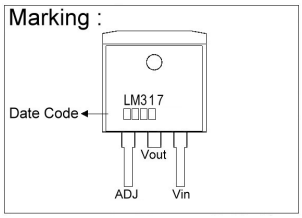
The GULM317 is an adjustable 3-termial positive voltage regulator, designed to supply more than 1.5A of output current with voltage adjustable from 1.3 to 37V.

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.

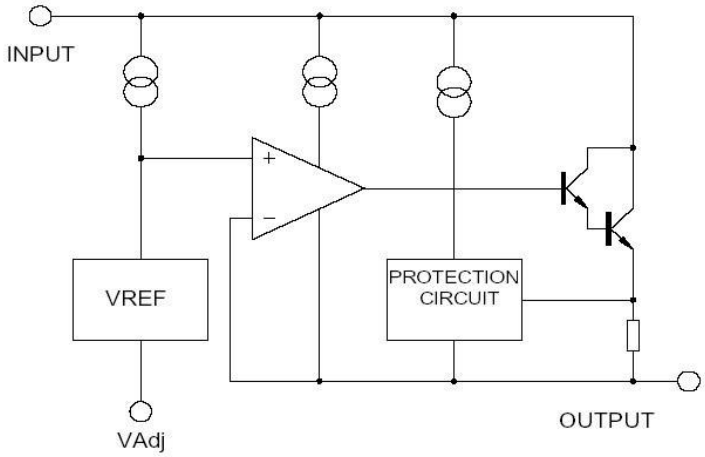
Package Dimensions





REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	4.40	4.80	c2	1.25	1.45
b	0.76	1.00	b2	1.17	1.47
L4	0.00	0.30	D	8.6	9.0
c	0.36	0.5	e	2.54 REF.	
L3	1.50 REF.		L	14.6	15.8
L1	2.29	2.79	θ	0°	8°
E	9.80	10.4	L2	1.27 REF.	

Block Diagram



Absolute Maximum Ratings at Ta = 25℃

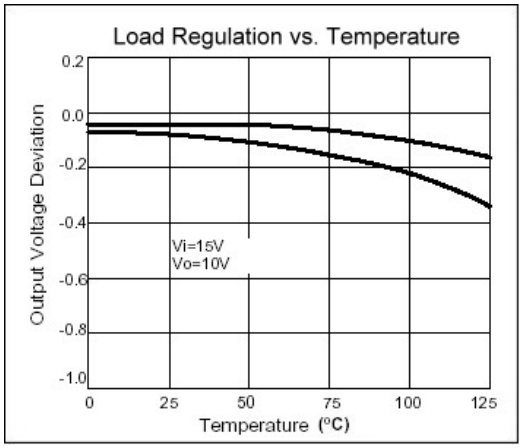
Parameter	Symbol	Ratings	Unit
Input-Output Voltage Difference	Vi-Vo	40	V
Load Temperature	Tlead	230	℃
Power Dissipation	PD	Internal limited	
Operating Temperature Range	Topr	0 ~ +125	℃
Storage Temperature Range	Tstg	-65 ~ +150	℃

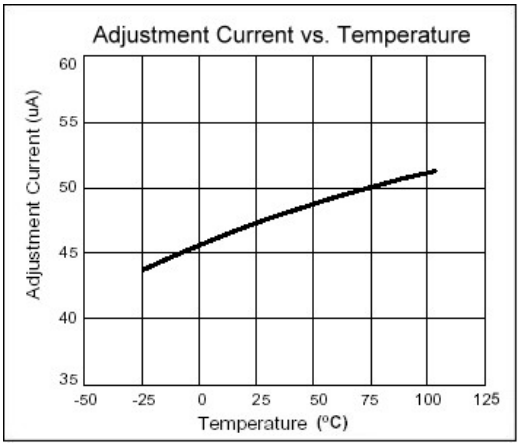
Electrical Characteristics (Vi-Vo=5V, 0℃< Tj <125℃, Io=500mA, IMax=1.5A, PMax=20W, unless otherwise specified)

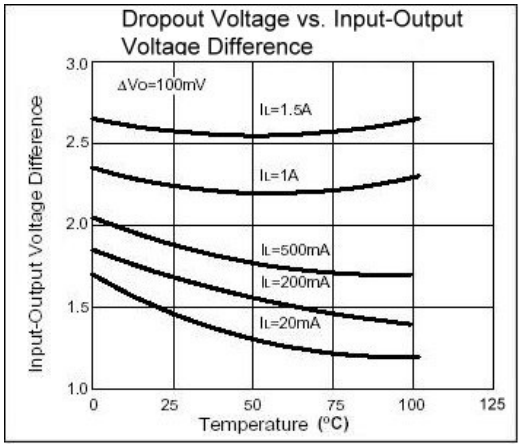
Parameter	Symbol	Test Conditions		Min	TYP	Max	Unit
Line Regulation	ΔVo	Ta=25℃, 3V≦Vi-Vo≦40V		-	0.01	0.04	%/V
		Ta=0~125℃, 3V≦Vi-Vo<≦40V		-	0.02	0.07	%/V
Load Regulation	ΔVo	Ta=25℃	Vo≦6V	-	18	25	mV
		10mA≦Io≦IMax	Vo≧5V	-	0.4	0.5	%/Vo
		10mA≦Io≦IMax	Vo≦5V	-	40	70	mV
			Vo≧6V	-	0.8	1.5	%/Vo
Adjustable Pin 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		1.225	1.25	1.275	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

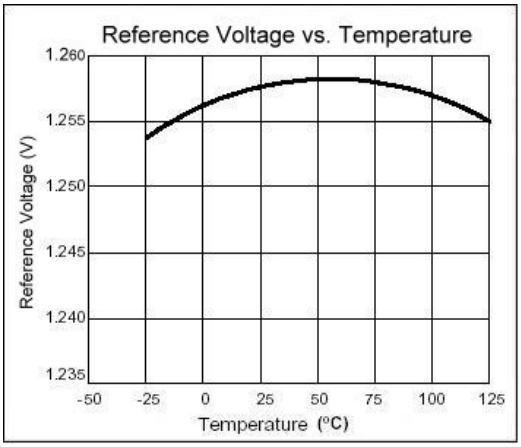
*Note: Testing with low duty pulse should be used to avoid heating effect.

Characteristics Curve









Application Circuit

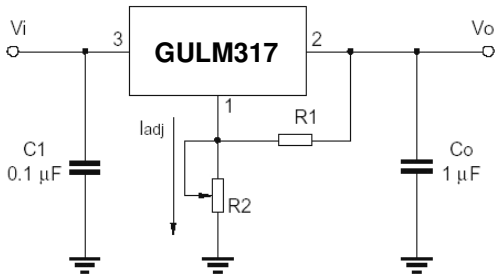


Fig.1 Programmable voltage regulator
Vo=1.25V*(1+R2/R1)+Iadj*R2
C1 is required when regulator is located an appreciated distance from power supply. Co is needed to improve transient response.

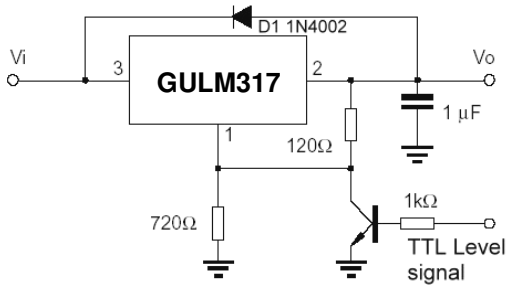


Fig.2 Regulator with On-off control

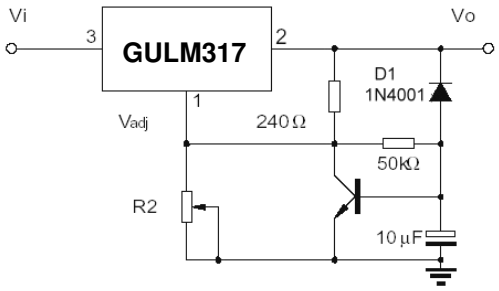


Fig.3 Soft start application

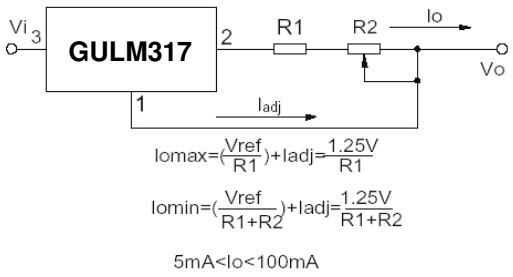


Fig.4 Constant current application

Head Office And Factory:
- **Taiwan**: No. 17-1 Tatung Rd. Fu Kou Hsin-Chu Industrial Park, Hsin-Chu, Taiwan, R. O. C.
  TEL : 886-3-597-7061 FAX : 886-3-597-9220, 597-0785
- **China**: (201203) No.255, Jang-Jiang Tsai-Lueng RD. , Pu-Dung-Hsin District, Shang-Hai City, China
  TEL : 86-21-5895-7671 ~ 4 FAX : 86-21-38950165