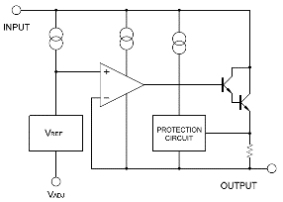
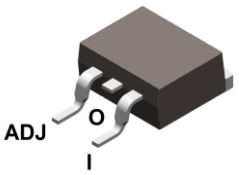
Features

- Output voltage adjustable from 1.3V ~ 37V
- Output current in excess of 1.5A
- Internal short circuit protection
- Internal over temperature protection
- Output transistor safe area compensation

HF





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Mechanical Data

- Case: TO-263
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
LM317B	TO-263	50 pcs / Tube & 800 pcs / Tape & Reel	LM317

Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Input - Output Voltage Difference	V_{IN}- V_{OUT}	40	V

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation (T_A = 25°C)	P_D	1.54	W
Thermal Resistance Junction-to-Air	$R_{\theta JA}$	65	°C/W
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	5	°C/W
Junction Temperature	T_J	125	°C
Operating Temperature Range	T_{OPR}	0 ~ +125	°C
Storage Temperature Range	T_{STG}	-40 ~ +150	°C

Electrical Characteristics (V_{IN}-V_{OUT} = 5V, I_{OUT} = 10mA @ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Line Regulation	$\Delta V_{OUT}/ V_{OUT}$	3V ≤ V_{IN}-V_{OUT} ≤ 40V	-	-	0.04	%/V
Load Regulation	ΔV_{OUT}	10mA ≤ I_{OUT} ≤ 1A, V_{OUT} ≤ 5V	-	-	25	mV
		10mA ≤ I_{OUT} ≤ 1A, V_{OUT} ≥5V	-	-	0.5	%
Adjustable Pin Current	I_{ADJ}		-	-	100	μA
Adjustable Pin Current Change	ΔI_{ADJ}	3V ≤ V_{IN}-V_{OUT} ≤ 40V 10mA ≤ I_{OUT} ≤ 1A, P_D ≤ 20W	-	-	5	μA
Reference Voltage	V_{REF}	3V ≤ V_{IN}-V_{OUT} ≤ 40V 10mA ≤ I_{OUT} ≤ 1A, P_D ≤ 20W	1.20	1.25	1.30	V
Temperature Stability		T_{MIN} ≤ T_J ≤ T_{MAX}	-	0.7	-	%/VOUT
Minimum Load Current for Regulation	$I_{L(MIN)}$	V_{IN}-V_{OUT} = 40V	-	-	10	mA
Maximum Output Current	$I_{O(MAX)}$	V_{IN}-V_{OUT} = 40V, P_D ≤ 20W	0.2	-	-	A

Ratings and Characteristics Curves (@ T_A = 25°C unless otherwise specified)

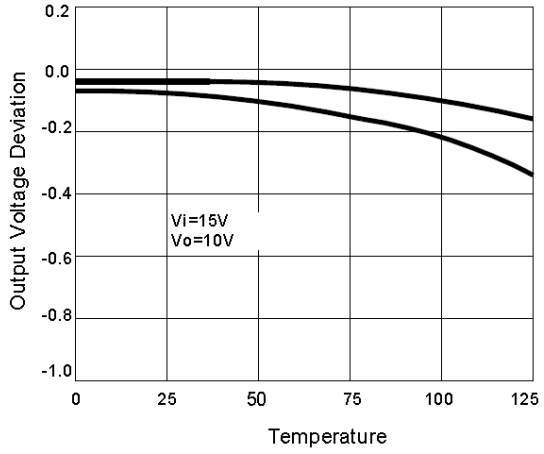


Fig 1 Load Regulation vs Temperature

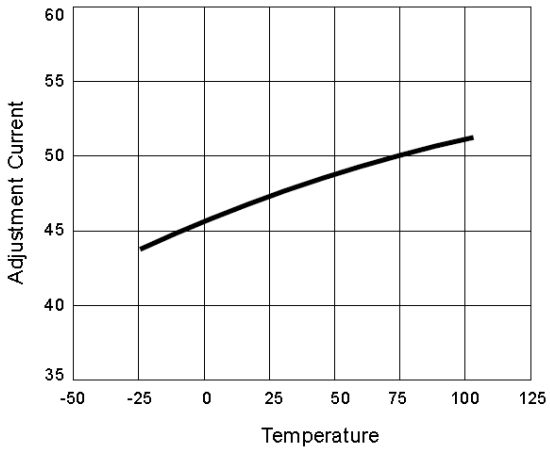


Fig 2 Adjustment Current vs Temperature

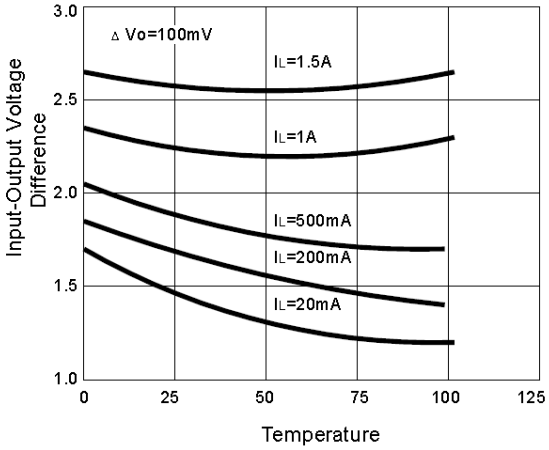


Fig 3 Dropout Voltage vs Input-Output Voltage Difference

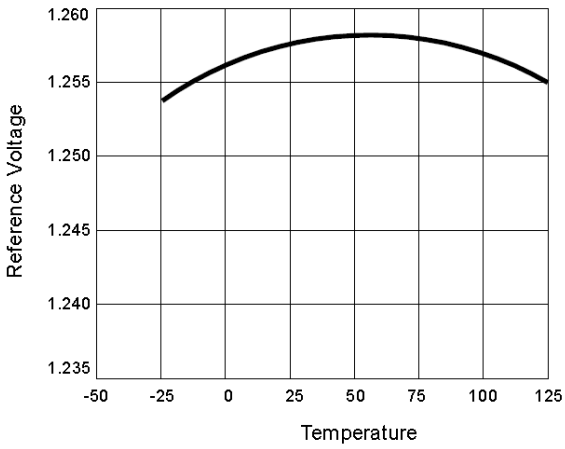
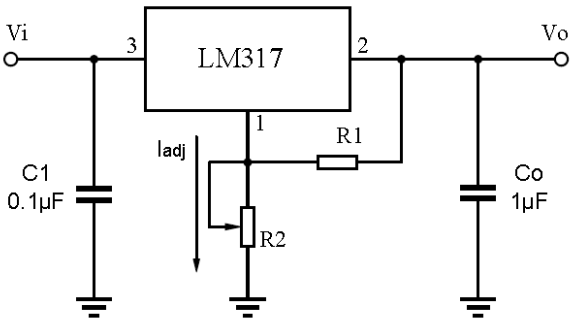


Fig 4 Reference Voltage vs Temperature



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 5 Programmable voltage regulator

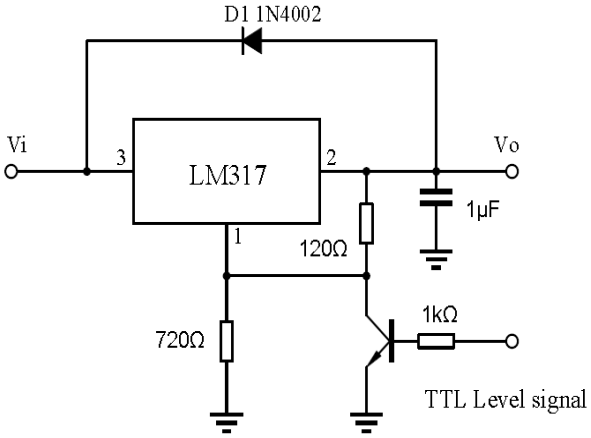


Fig 6 Regulator with On-off control

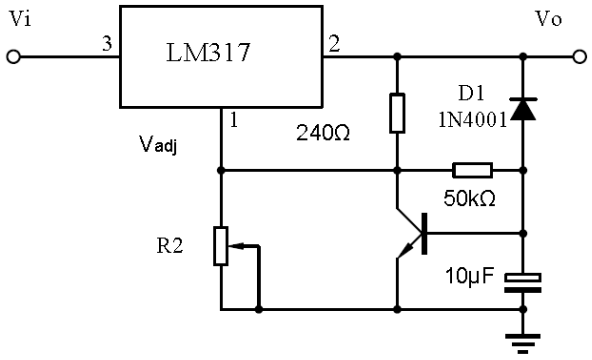


Fig 7 Soft start application

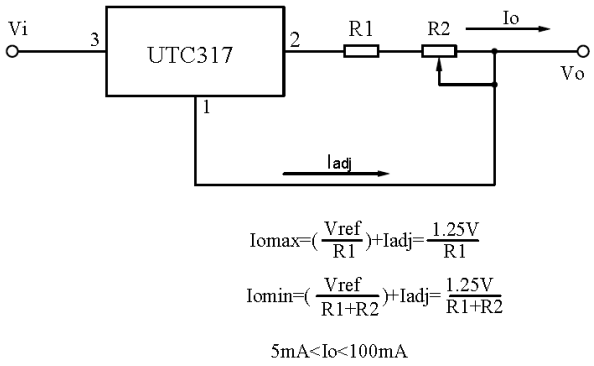
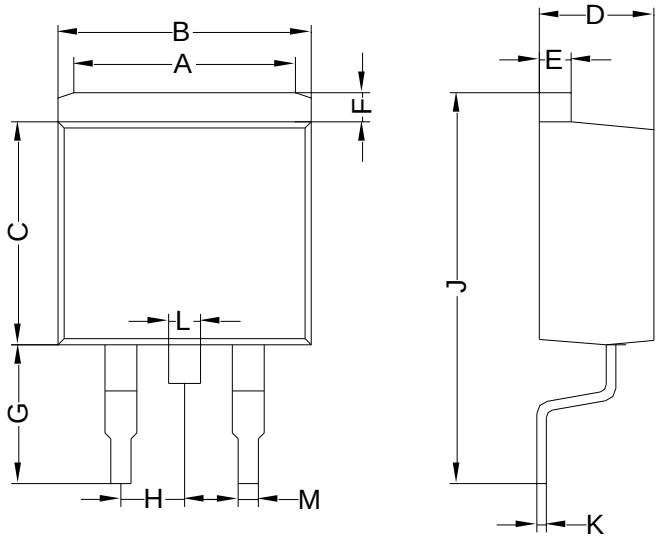


Fig 8 Constant current application

Package Outline Dimensions (Unit: mm)



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Dimension	**Min.**	**Max.**
A	6.00	8.00
B	9.90	10.30
C	8.50	9.10
D	4.37	4.77
E	1.07	1.47
F	1.07	1.47
G	5.34	5.74
H	2.44	2.64
J	15.30	15.90
K	0.28	0.48
L	1.17	1.37
M	0.71	0.91

Mounting Pad Layout (Unit: mm)

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