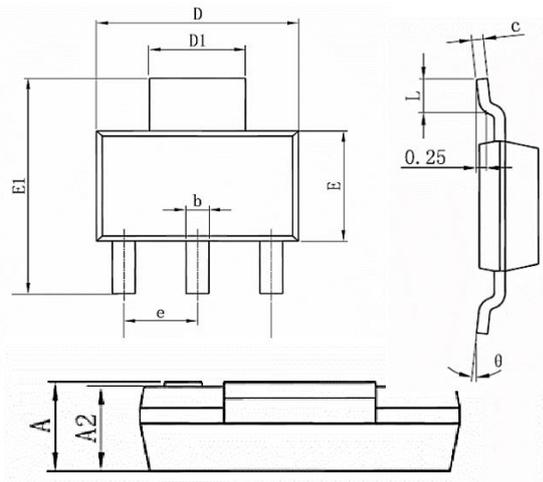


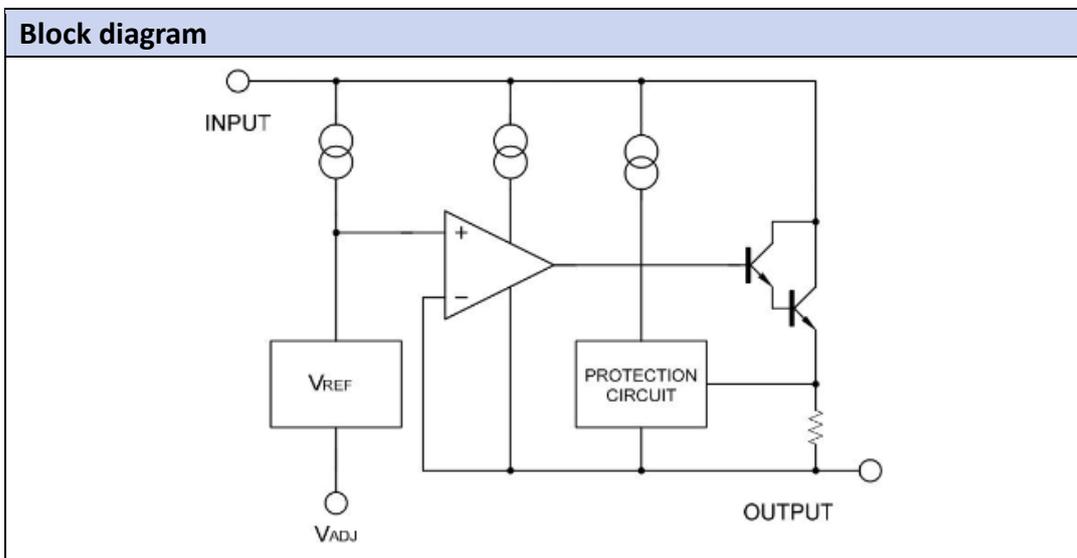
Adjustable Voltage Regulator

Primary characteristics		
Parameter	Value	Unit
Output voltage	1.2 ~ 37	V
Output current	1.5	A

Features

- Pb-free and **RoHS** compliant
- 0.1% line and load regulation voltages
- Complete series of protections:
 - Current limiting;
 - Thermal shutdown;
 - SOA Control;

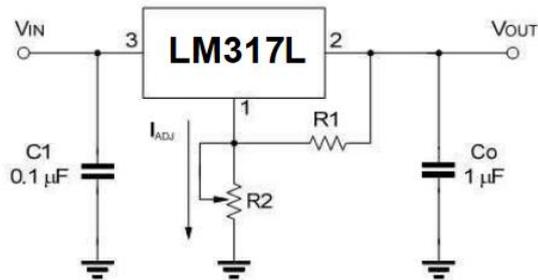
Case dimensions											
											
SOT-223											
Unit	A	A2	b	c	D	D1	E	e	e1	L	e
mm	1.66 ±0.14	1.6 ±0.1	0.74 ±0.08	0.30 ±0.05	6.3 ±0.1	3.0 ±0.1	3.5 ±0.2	2.3 (BSC)	4.6 ±0.1	1.0 +0.15 -0.10	5° ±5



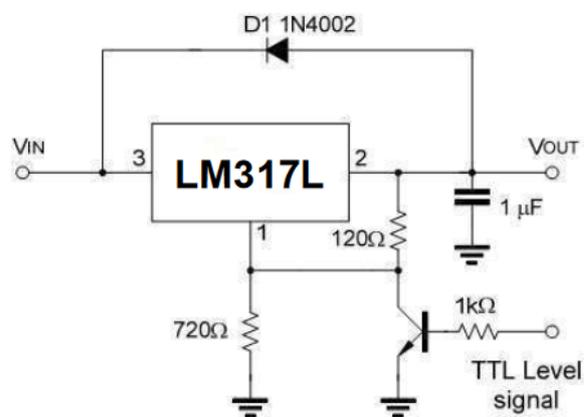
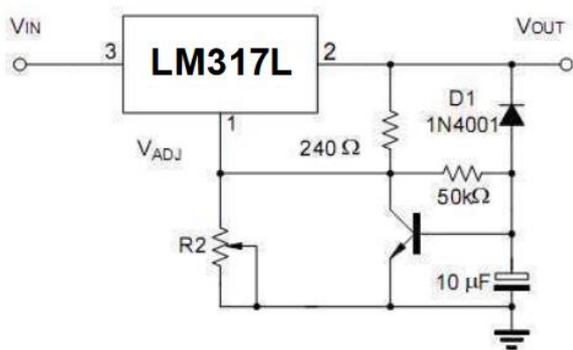
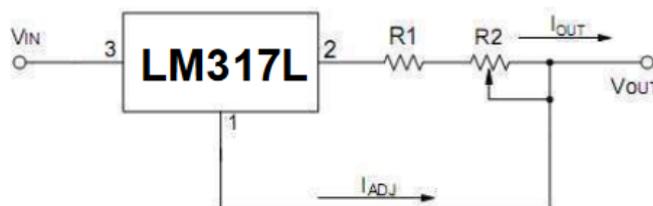
Absolute maximum ratings			
Parameter	Symbol	Rating	Unit
Input-output voltage differential	$V_{IN}-V_{OUT}$	40	V
Output current	I_O	Internally limited	
Operating temperature	T_{OPR}	0 ~ +125	°C
Storage Temperature	T_{STG}	-60 ~ +150	°C

Electrical characteristics
 $V_{IN}-V_{OUT}=5.0V$, $I_{OUT}=500mA$, $I_{MAX}=1.5A$ and $P_{MAX}=20W$, unless otherwise specified

Parameter	Symbol	Test conditions	Min.	Typ.	Max.	Unit
Line regulation	$\Delta V_{OUT}/V_{OUT}$	$3V \leq V_{IN}-V_{OUT} \leq 40V$	-	-	0.04	%/V
Load regulation	ΔV_{OUT}	$10mA \leq I_{OUT} \leq 1.5A$; $T_J=25^\circ C$	-	-	25	mV
			-	-	0.5	%
Adjustable pin current	I_{ADJ}	$T_J=25^\circ C$	-	-	100	μA
Adjustable pin current change	ΔI_{ADJ}	$2.5V \leq V_{IN}-V_{OUT} \leq 40V$ $10mA \leq I_{OUT} \leq 1.5A$	-	-	5.0	μA
Output voltage drift	$\Delta V/\Delta T$	$I_{OUT}=5.0mA$	-	-0.8	-	mV/ $^\circ C$
Reference voltage (between PIN 3 and PIN 1)	V_{REF}	$2.5V \leq V_{IN}-V_{OUT} \leq 40V$ $10mA \leq I_{OUT} \leq 1.5A$	1.2	1.25	1.3	V
Output voltage temperature stability	$\Delta V_{OUT}/\Delta T_{OUT}$		-	1.0	-	%
Minimum load current for regulation	$I_{O(MIN)}$	$V_{IN}-V_{OUT}=40V$	-	-	10	mA
Maximum output current	$I_{O(MAX)}$	$V_{IN}-V_{OUT} \leq 15V$, $P_D < P_{MAX}$	1.5	-	-	A
		$V_{IN}-V_{OUT}=40V$, $P_D < P_{MAX}$, $T_J=25^\circ C$	-	0.4	-	

Application circuits
Programmable voltage regulator


$$V_{OUT} = 1.25 \times \left(1 + \frac{R_2}{R_1}\right) + I_{ADJ} \times R$$

Regulator with ON-OFF control

Soft start application

Constant current application


Performance curves

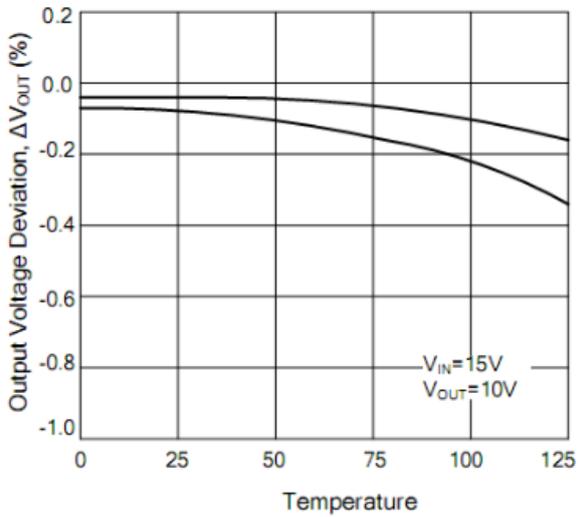


Fig.1. Load Regulation vs. temperature

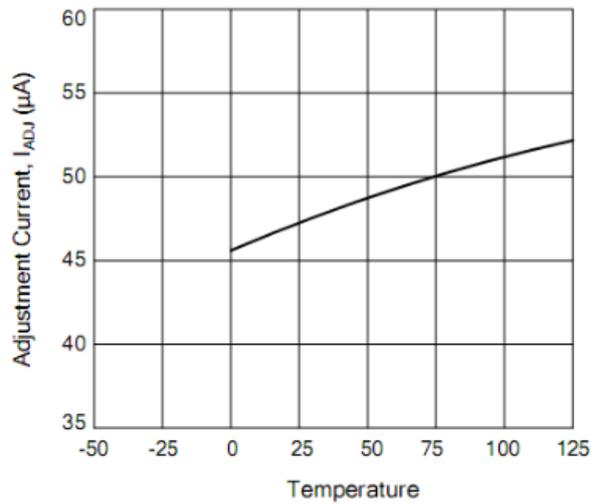


Fig.2. Adjustment Current vs. Temperature

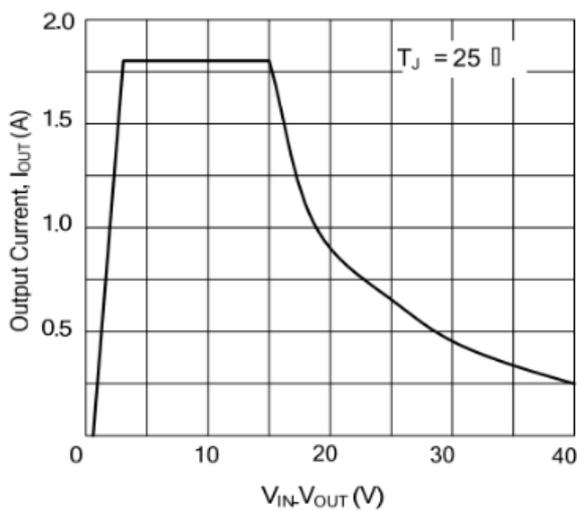


Fig.3. Currents Limit

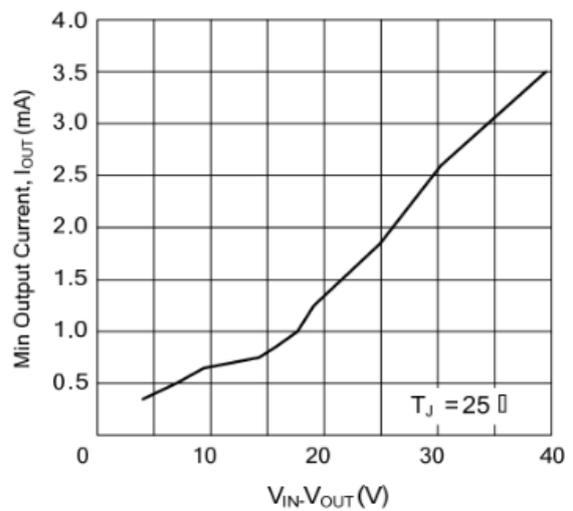
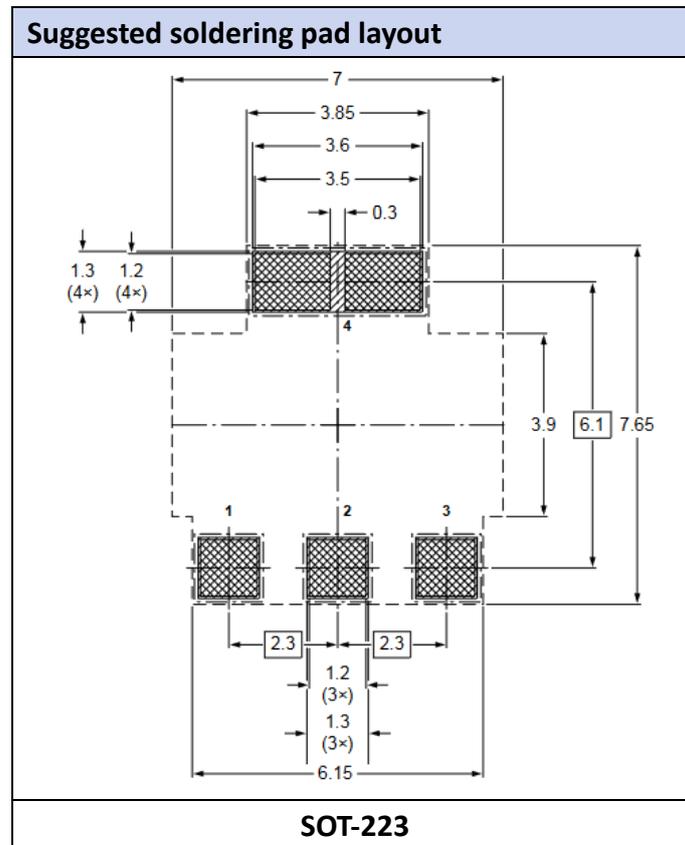


Fig.4. Minimum Operating Current



Ordering information			
Part Number	Package	Shipping Quantity	Dimensions
LM317	SOT-223	2500	---

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