

/ Descriptions

TO-220 Voltage Regulator in a TO-220 Plastic Package.

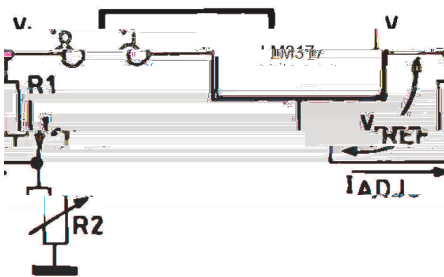
/ Features

1.5A, 1.2 37V
3-Terminal regulators ,output current in excess of 1.5 A, output voltage adjustable over a 1.2-37V.

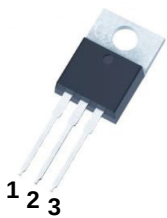
/ Applications

Voltage Regulator.

/ Equivalent Circuit or Application Circuit



/ Pinning



PIN1 ADJ PIN 2 OUT PIN 3 IN

/ Marking

See Marking Instructions

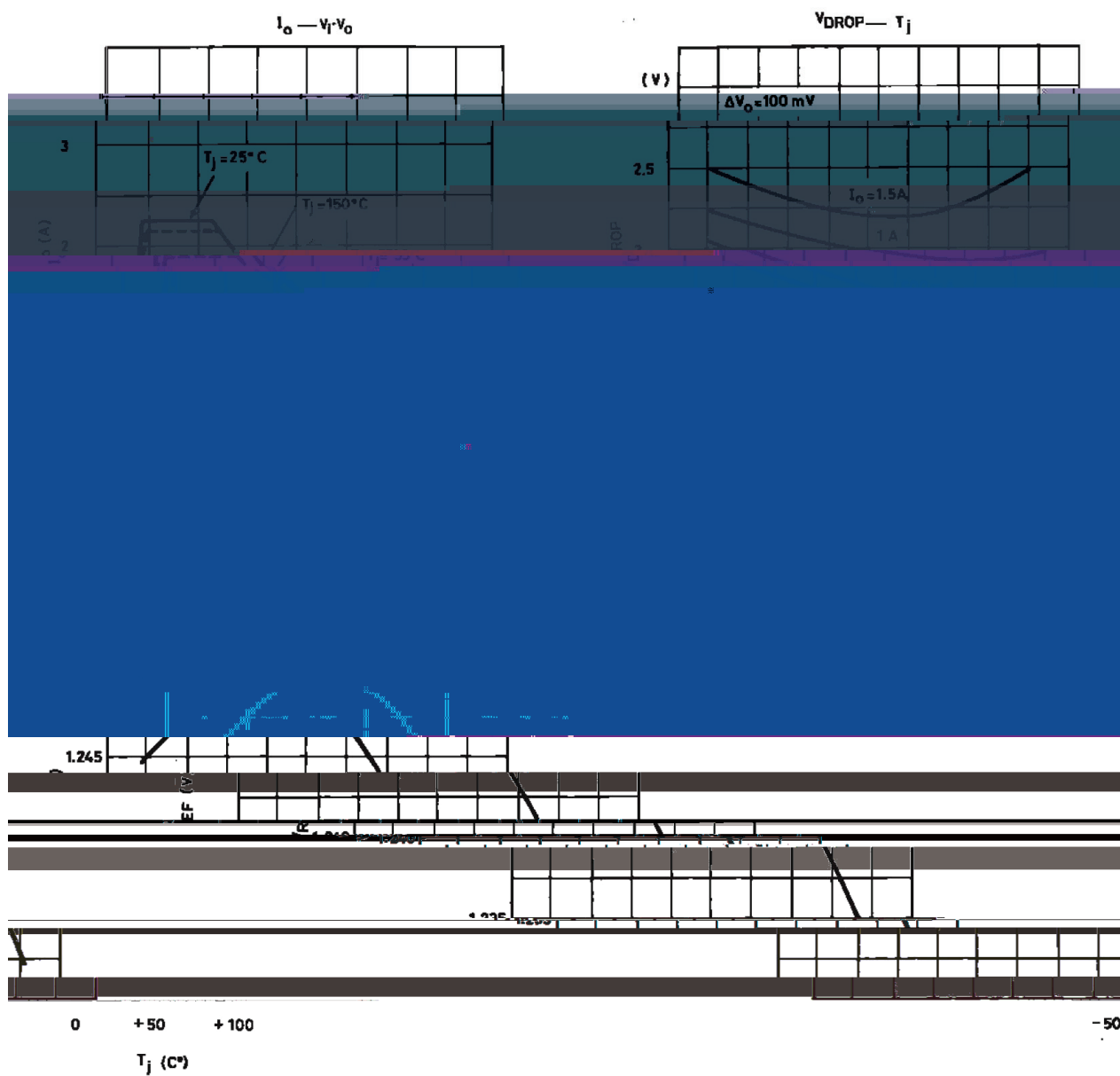
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Input - Output Voltage Difference	V_{i-o}	40	V
Output Current	I_o	Internally Limited	A
Operating Junction Temperature Range	T_J	0 125	
Power Dissipation	P_{tot}	Internally Limited	W
Storage temperature range	T_{stg}	-55 150	

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Line regulation	V_o	$V_i-V_o=3\text{to}40\text{V}$ $T_J=25$		0.01	0.04	%/V
		$V_i-V_o=3\text{to}40\text{V}$		0.02	0.07	%/V
Load Regulation	V_o	$V_o \leq 5\text{V}$ $I_o=10\text{mA}$ to I_{oMAX} $T_J=25$		5	25	mV
		$V_o \leq 5\text{V}$ $I_o=10\text{mA}$ to I_{oMAX}		20	70	mV
		$V_o \geq 5\text{V}$ $I_o=10\text{mA}$ to I_{oMAX} $T_J=25$		0.1	0.5	%
		$V_o \geq 5\text{V}$ $I_o=10\text{mA}$ to I_{oMAX}		0.3	1.5	%
Adjustable Pin Current	I_{ADJ}			50	100	μA
Adjustable Pin Current Change	I_{ADJ}	$V_i-V_o=2.5\text{to}40\text{V}$ $I_o=10\text{mA}$ to I_{oMAX}		0.2	5	μA
Reference Voltage	V_{REF}	$V_i-V_o=2.5\text{to}40\text{V}$ $I_o=10\text{mA}$ to I_{oMAX} $P_D \leq P_{MAX}$	1.2	1.25	1.3	V
Line Regulation	$\frac{\Delta V_o}{V_o}$			1		%
Minimum Load Current for Regulation	$I_{o(min)}$	$V_i-V_o=40\text{V}$		3.5	10	mA
Maximum Output Current	$I_{o(max)}$	$V_i-V_o \leq 15\text{V}$ P_D P_{MAX}	1.5	2.2		A
		$V_i-V_o=40\text{V}$ P_D P_{MAX} $T_J=25$		0.4		A
RMS Noise vs. %of VOUT	e_N	$B=10\text{Hz}$ to 10KHz $T_J=25$		0.003		%
Ripple Rejection	SVR	$T_J=25$ $f=120\text{Hz}$ $C_{ADJ}=0$ $C_{ADJ}=10\mu\text{F}$		65		dB
			66	80		dB

/ Electrical Characteristic Curve



/ Internal circuit diagram

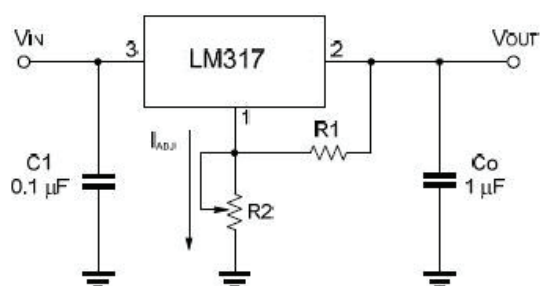


Fig.1 Programmable voltage regulator

$V_{OUT} = 1.25V \cdot (1 + R2/R1) + I_{ADJ} \cdot R2$
C1 is required when regulator is located
an appreciated distance from power

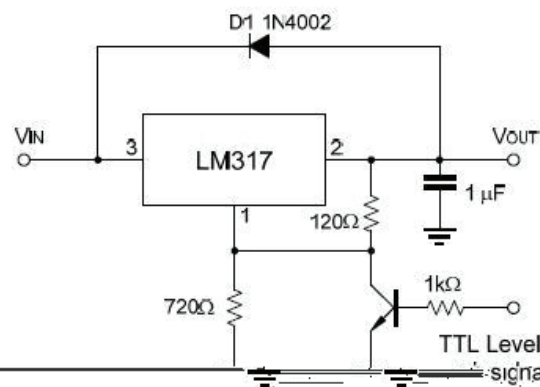
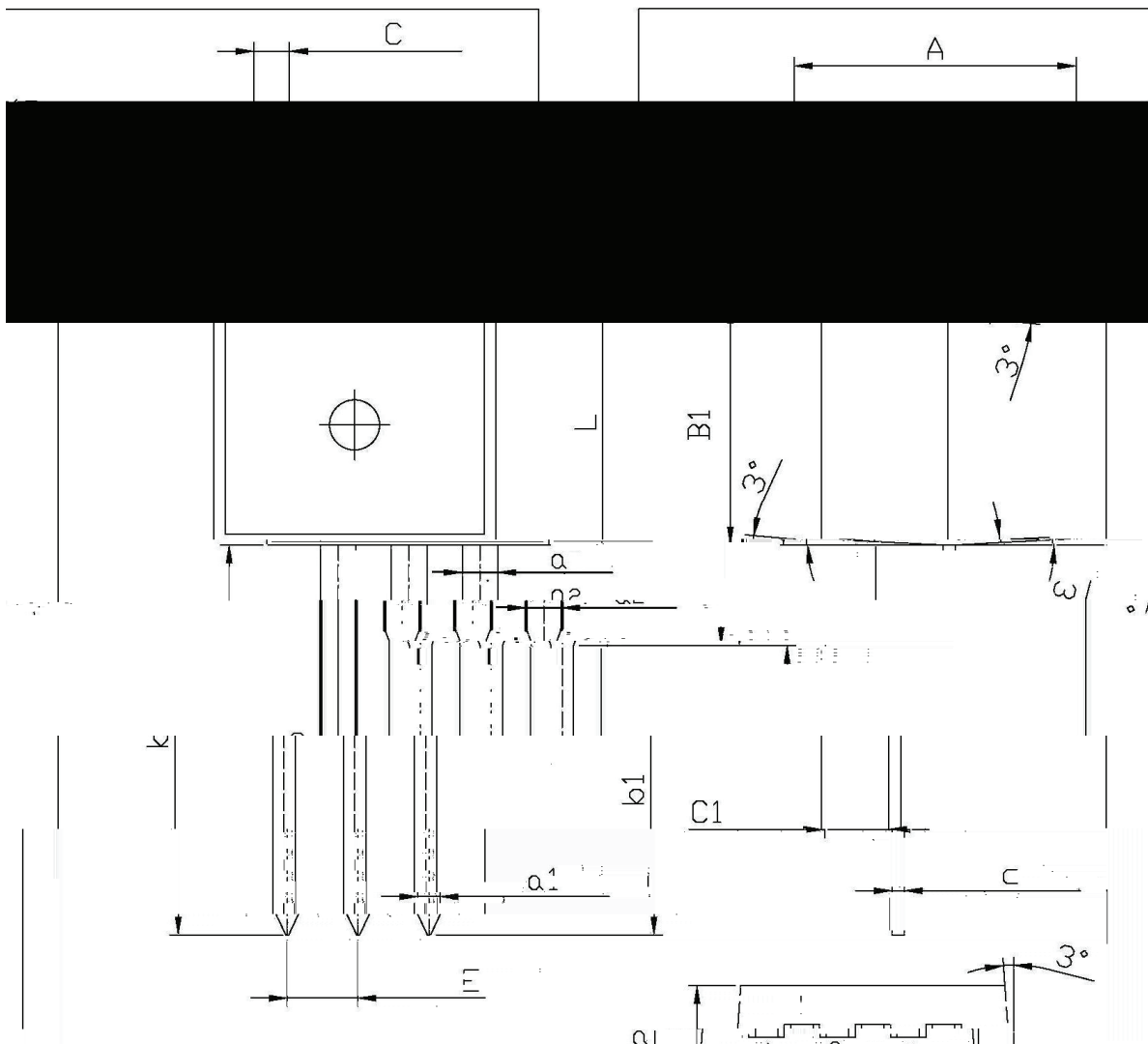


Fig.2 Regulator with On-off control

/ Package Dimensions

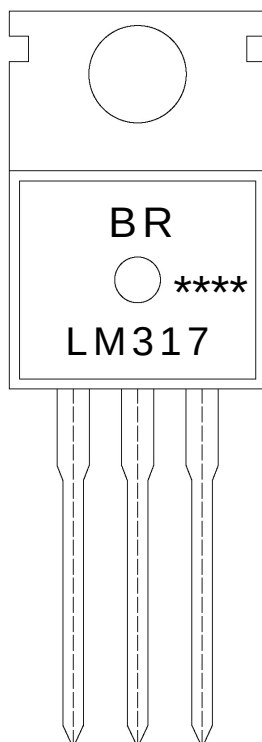
单位: mm

T0-220



Dimensions in Millimeters			Dimensions in Millimeters		
Symbol	Min	Max	Symbol	Min	Max
A	9.8	10.2	C	1.2	1.4
B	3.56	3.64	B1	6.3	6.7
L	1.61	1.93	C1	0.4	0.6
a	1.22	1.32	a1	1.25	1.45
b1	1.25	1.45			

/ Marking Instructions



BR

LM317

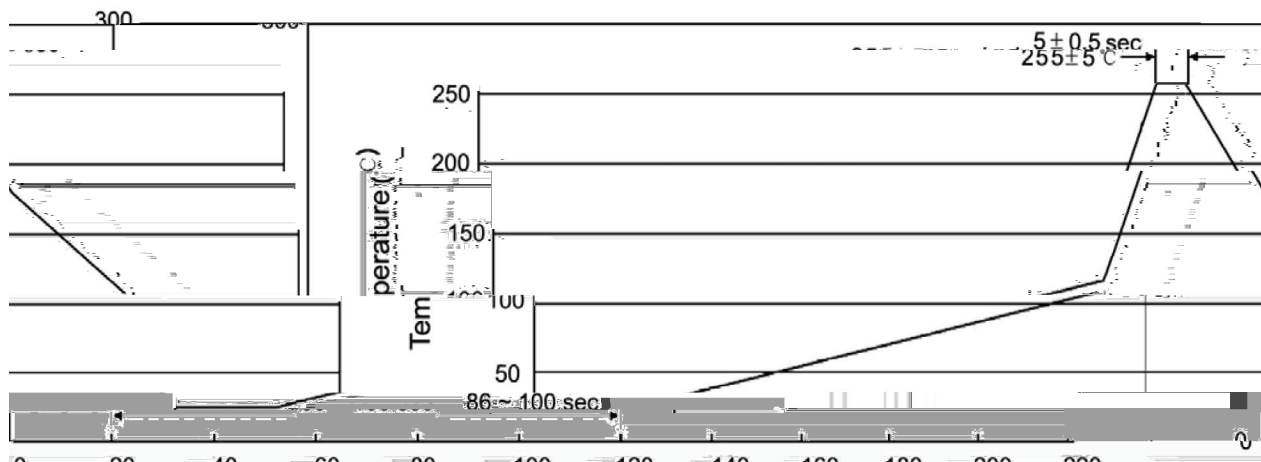
Note:

BR: Company Code.

LM317: Product Type.

****: Lot No. Code, code change with Lot No.

() / Temperature Profile for Dip Soldering(Pb-Free)



Note:

- | | | | | | |
|---|-----|-----|----|----------|---|
| 1 | 25 | 150 | 60 | 90sec; | 1.Preheating:25~150 , Time:60~90sec. |
| 2 | 255 | 5 | 5 | 0.5sec; | 2.Peak Temp.:255 5 , Duration:5 0.5sec. |
| 3 | | | 2 | 10 /sec. | 3. Cooling Speed: 2~10 /sec. |

/ Resistance to Soldering Heat Test Conditions

270 5 10 1 sec. Temp:270±5 Time:10±1 sec

/ Packaging SPEC.

/ BULK

Package Type	Units					Dimension (unit mm3)		
	Units/Bag /	Bags/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Bag	Inner Box	Outer Box
TO-220/F	200	10	2,000	5	10,000	135×190	237×172×102	560×245×195

/ TUBE

Package Type	Units	Dimension	(unit mm3)
57c-0.9(57c07.9102			