

/ Descriptions

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

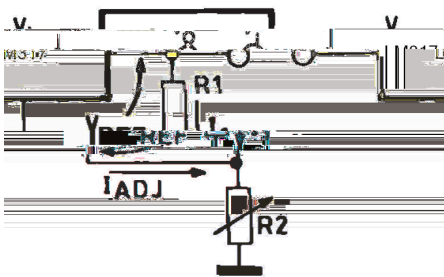
/ Features

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

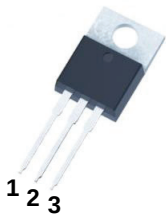
/ Applications

Voltage Regulator.

/ Equivalent Circuit or Application Circuit



/ Pinning



PIN1 ADJ PIN 2 OUT PIN 3 IN

/ Marking

See Marking Instructions

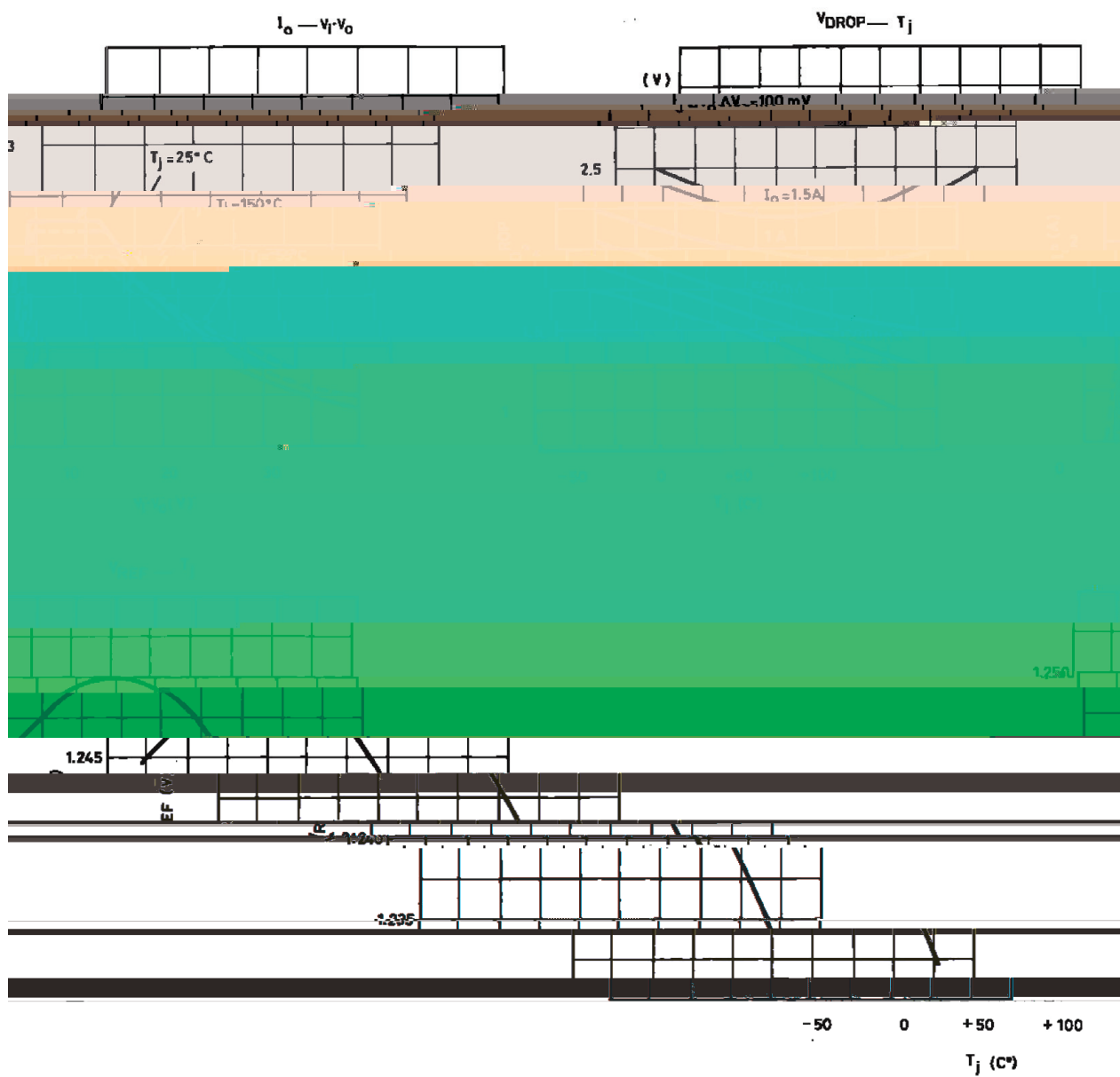
/ Absolute Maximum Ratings(Ta=25)

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

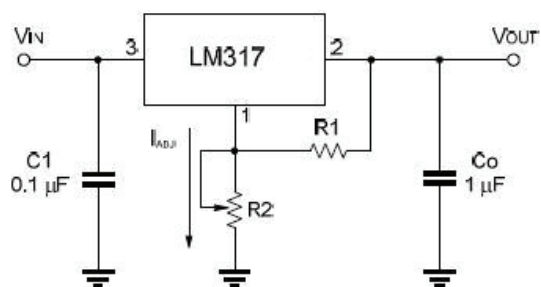


Fig.1 Programmable voltage regulator

$$V_{OUT} = 1.25V \cdot (1 + R_2/R_1) + I_{ADJ} \cdot R_2$$

C1 is required when regulator is located
an appreciated distance from power

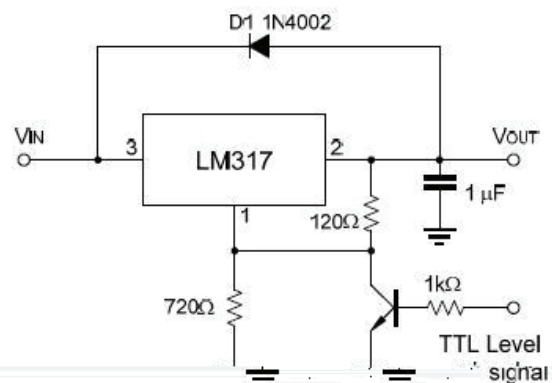
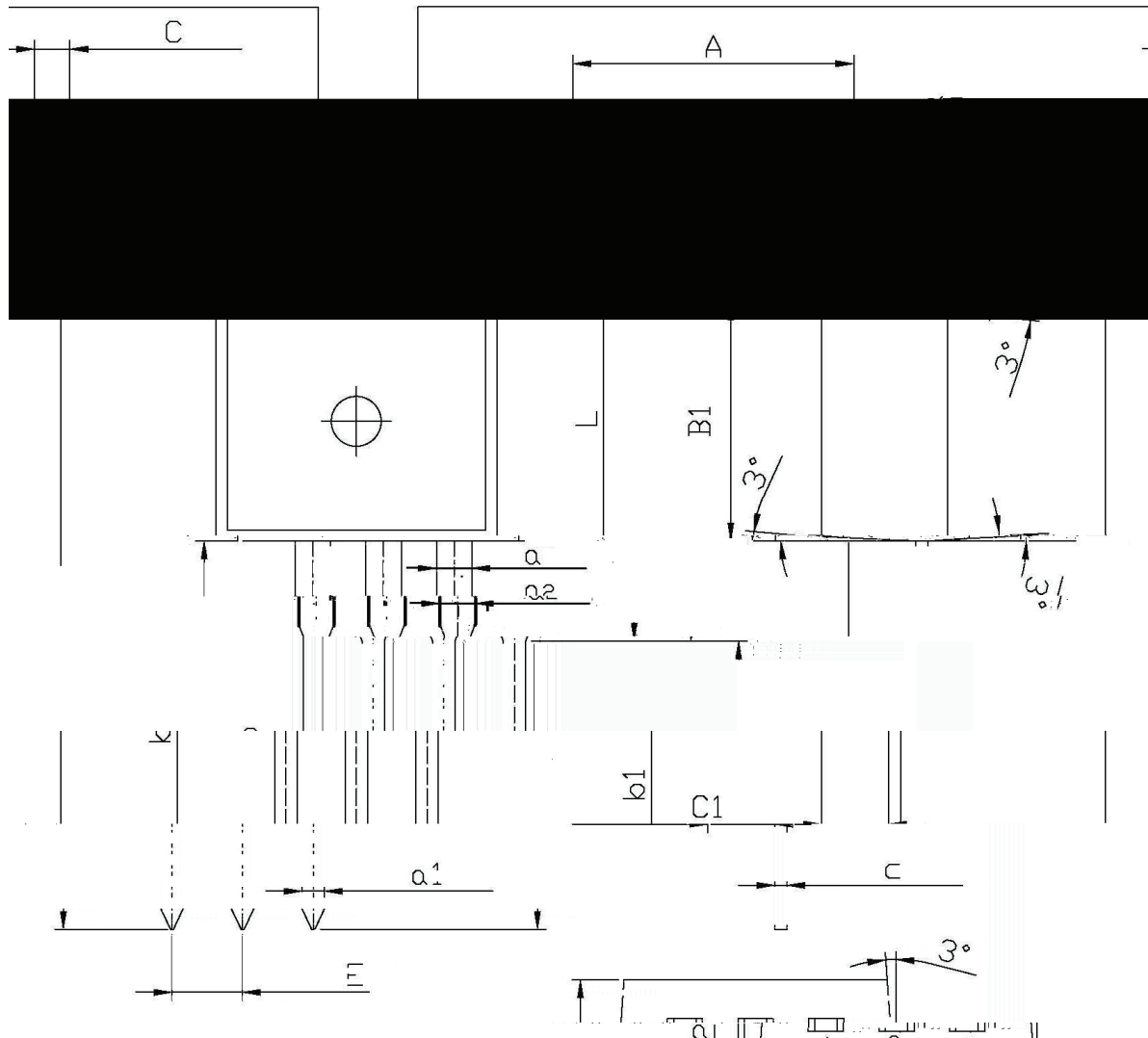


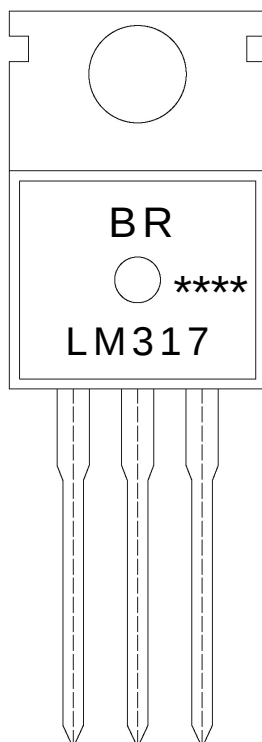
Fig.2 Regulator with On-off control

位: mm TO-220 单



Symbol		Dimensions in Millimeters		Symbol		Dimensions in Millimeters	
		Min	Max			Min	Max
A		9.8	10.2	C		1.2	1.4
B		9.8	9.8	D		6.3	6.3
E		9.8	9.8	F		6.3	6.3
G		9.8	9.8	H		6.3	6.3
I		9.8	9.8	J		6.3	6.3
K		9.8	9.8	L		6.3	6.3
M		9.8	9.8	N		6.3	6.3
O		9.8	9.8	P		6.3	6.3
Q		9.8	9.8	R		6.3	6.3
S		9.8	9.8	T		6.3	6.3
U		9.8	9.8	V		6.3	6.3
W		9.8	9.8	X		6.3	6.3
Y		9.8	9.8	Z		6.3	6.3
AA		9.8	9.8	AB		6.3	6.3
AC		9.8	9.8	AD		6.3	6.3
AE		9.8	9.8	AF		6.3	6.3
AG		9.8	9.8	AH		6.3	6.3
AI		9.8	9.8	AJ		6.3	6.3
AK		9.8	9.8	AL		6.3	6.3
AM		9.8	9.8	AN		6.3	6.3
AO		9.8	9.8	AP		6.3	6.3
AQ		9.8	9.8	AR		6.3	6.3
AS		9.8	9.8	AT		6.3	6.3
AU		9.8	9.8	AV		6.3	6.3
AW		9.8	9.8	AX		6.3	6.3
AY		9.8	9.8	AZ		6.3	6.3
BA		9.8	9.8	BB		6.3	6.3
BC		9.8	9.8	BD		6.3	6.3
BE		9.8	9.8	BF		6.3	6.3
BG		9.8	9.8	BH		6.3	6.3
BI		9.8	9.8	BJ		6.3	6.3
BK		9.8	9.8	BL		6.3	6.3
BM		9.8	9.8	BN		6.3	6.3
BO		9.8	9.8	BP		6.3	6.3
BQ		9.8	9.8	BR		6.3	6.3
BS		9.8	9.8	BT		6.3	6.3
BU		9.8	9.8	BV		6.3	6.3
BW		9.8	9.8	BX		6.3	6.3
BY		9.8	9.8	BZ		6.3	6.3
CA		9.8	9.8	CB		6.3	6.3
CC		9.8	9.8	CD		6.3	6.3
CE		9.8	9.8	CF		6.3	6.3
CG		9.8	9.8	CH		6.3	6.3
CI		9.8	9.8	CJ		6.3	6.3
CK		9.8	9.8	CL		6.3	6.3
CM		9.8	9.8	CN		6.3	6.3
CO		9.8	9.8	CP		6.3	6.3
CQ		9.8	9.8	CR		6.3	6.3
CS		9.8	9.8	CT		6.3	6.3
CU		9.8	9.8	CV		6.3	6.3
CW		9.8	9.8	CX		6.3	6.3
CY		9.8	9.8	CZ		6.3	6.3
DA		9.8	9.8	DB		6.3	6.3
DC		9.8	9.8	DD		6.3	6.3
DE		9.8	9.8	DF		6.3	6.3
DG		9.8	9.8	DH		6.3	6.3
DI		9.8	9.8	DJ		6.3	6.3
DK		9.8	9.8	DL		6.3	6.3
DM		9.8	9.8	DN		6.3	6.3
DO		9.8	9.8	DP		6.3	6.3
DQ		9.8	9.8	DR		6.3	6.3
DS		9.8	9.8	DT		6.3	6.3
DU		9.8	9.8	DV		6.3	6.3

/ Marking Instructions



BR

LM317

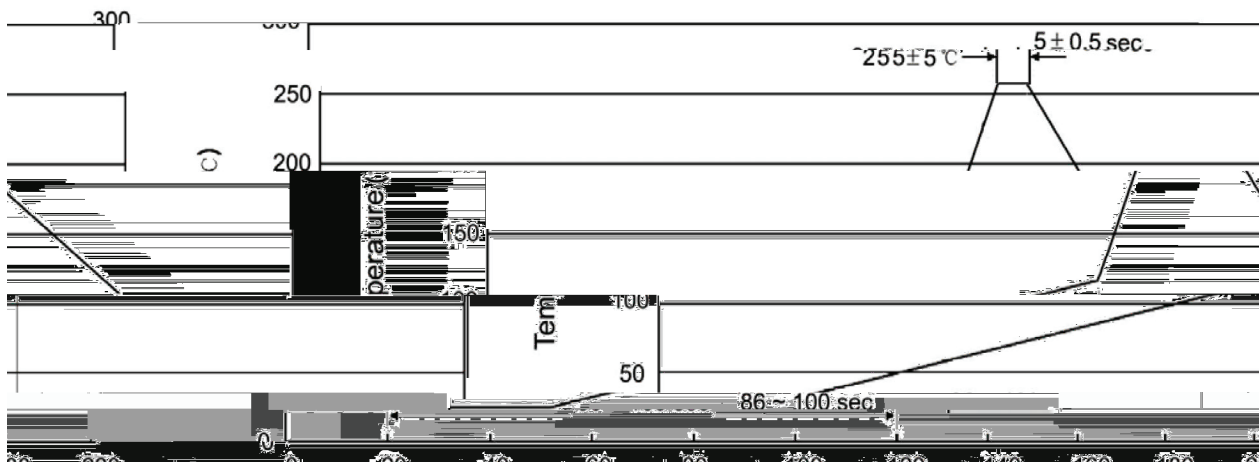
Note:

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)

/ TUBE

Package Type	Units					Dimension		(unit mm3)