

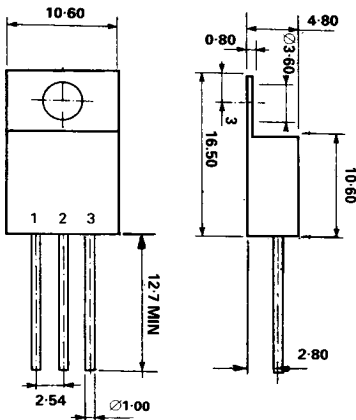
NEW PRODUCT

LM 117-220M

POSITIVE ADJUSTABLE VOLTAGE REGULATOR TO 220 METAL

MECHANICAL DATA

Dimensions in mm



PIN 1 – Adjust PIN 2 – Output PIN 3 – Input

FEATURES

- HERMETIC TO 220 METAL PACKAGE
- HIGH RELIABILITY
- ISOLATED OPTION
- MILITARY OPTION
- SCREENING OPTIONS
- OUTPUT VOLTAGE RANGE 1.2 TO 37V
- OUTPUT CURRENT IN EXCESS OF 1.5A
- 0.1% LINE AND LOAD REGULATION
- FLOATING OPERATION FOR HIGH VOLTAGES
- COMPLETE SERIES OF PROTECTIONS:
CURRENT LIMITING, THERMAL SHUTDOWN
AND SOA CONTROL

TO 220M. Metal case. Output connected to case. Marking SML LM117
TO 220-ISO. Metal case. All leads isolated from case. Marking SML LM117-ISO

ABSOLUTE MAXIMUM RATINGS ($T_{CASE} = 25^{\circ}C$ unless otherwise stated)

V_{i-o}	Input-output differential voltage	40V
I_o	Output current	Internally limited
P_D	Power dissipation	Internally limited
T_J	Junction temperature	150°C
T_{stg}	Storage temperature	-65 to 150°C

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9.87

ELECTRICAL CHARACTERISTICS ($V_i - V_o = 5V$, $I_o = 500mA$, unless otherwise stated)

Parameter	Test Conditions		Min.	Typ.	Max.	Unit
ΔV_o Line regulation	$V_i - V_o = 3 \text{ to } 40V$	$T_j = 25^\circ C$		0.01	0.02	%V
				0.02	0.05	
ΔV_o Load regulation	$V_o \leq 5V$ $I_o = 10mA \text{ to } 1.5A$	$T_j = 25^\circ C$		5	15	mV
				20	50	
	$V_o \geq 5V$ $I_o = 10 \text{ mA to } 1.5A$	$T_j = 25^\circ C$		0.1	0.3	%
				0.3	1	
I_{ADJ} Adjustment pin current				50	100	μA
ΔI_{ADJ} Adjustment pin current	$V_i - V_o = 2.5 \text{ to } 40V$ $I_o = 10mA \text{ to } 1.5A$			0.2	5	μA
V_{REF} Reference voltage (between pin 3 and pin 1)	$V_i - V_o = 3 \text{ to } 40V$ $I_o = 10mA \text{ to } 1.5A$		1.2	1.25	1.3	V
$\frac{\Delta V_o}{V_o}$ Output voltage temperature stability				1		%
$I_o \text{ min}$ Minimum load current	$V_i - V_o = 40V$			3.5	5	mA
$I_o \text{ max}$ Maximum load current	$V_i - V_o \leq 15V$		1.5	2.2		A
	$V_i - V_o = 40V$			0.4		
e_N Output noise (percentage of V_o)	$T_j = 25^\circ C$, 10Hz to 10KHz			0.003		%
SVR Supply voltage rejection (*)	$T_j = 25^\circ C$ $f = 100Hz$	$C_{ADJ} = 0$		65		dB
		$C_{ADJ} = 10 \mu F$	66	80		

(*) C_{ADJ} is connected between pin 1 and ground.

THERMAL DATA

$R_{THj-case}$	Thermal resistance junction–case	Max. 4°C/W
R_{THj-a}	Thermal resistance junction–ambient	Max. 50°C/W

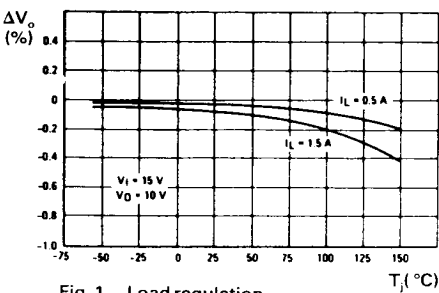


Fig. 1 Load regulation

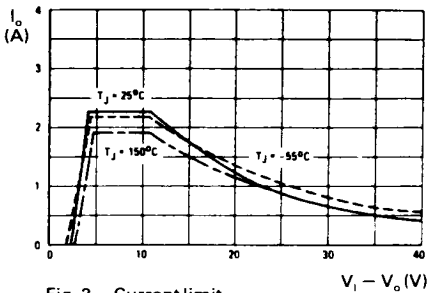


Fig. 2 Current limit

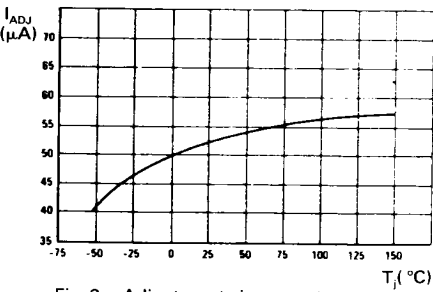


Fig. 3 Adjustment pin current

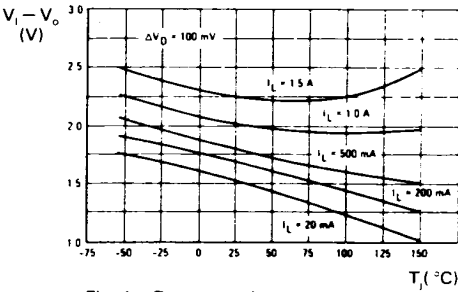


Fig. 4 Dropout voltage

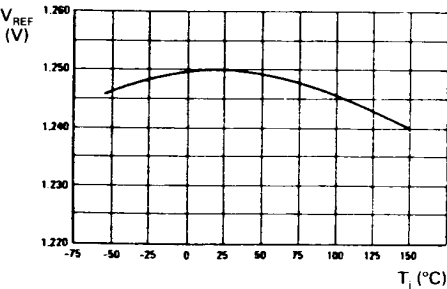


Fig. 5 Temperature stability

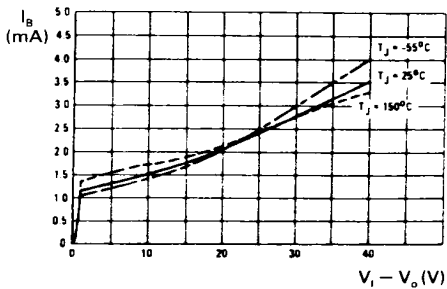


Fig. 6 Minimum operating current

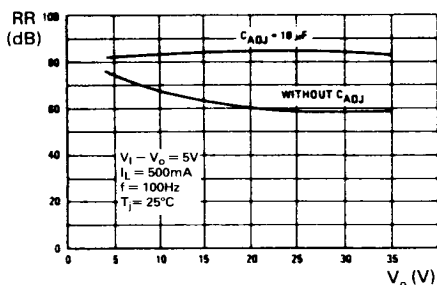


Fig. 7 Ripple Rejection versus Output Voltage

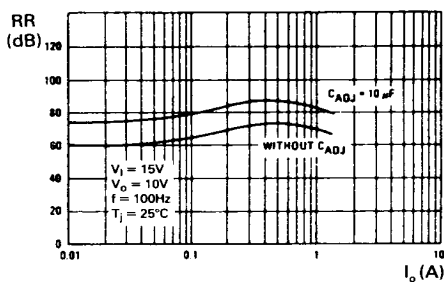


Fig. 8 Ripple Rejection versus Output Current

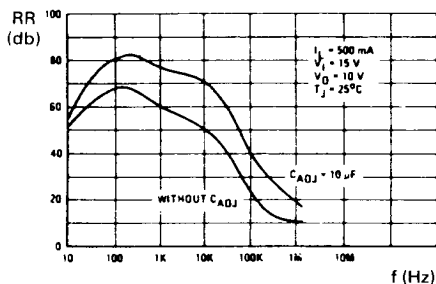


Fig. 9 Ripple Rejection versus Frequency

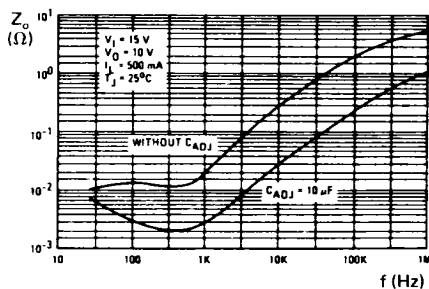


Fig. 10 Output impedance

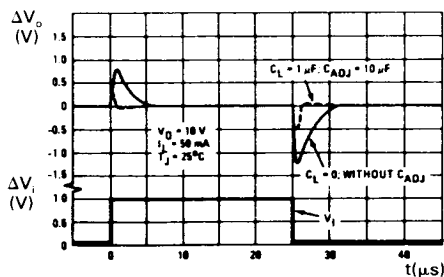


Fig. 11 Line transient response

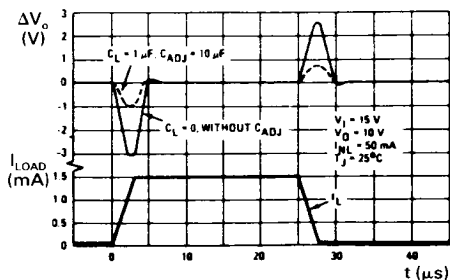


Fig. 12 Load transient response