SEMELAB

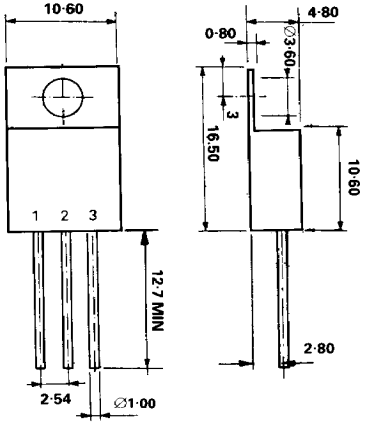
NEW PRODUCT

LM 137–220M

NEGATIVE ADJUSTABLE VOLTAGE REGULATOR TO 220 METAL

MECHANICAL DATA

Dimensions in mm



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

FEATURES

- **HERMETIC TO 220 METAL PACKAGE**
- **HIGH RELIABILTY**
- **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. Input connected to case. Marking SML LM137
TO 220–ISO. Metal case. All leads isolated from case. Marking SML LM137–ISO

ABSOLUTE MAXIMUM RATINGS (T_{CASE} = 25°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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ELECTRICAL CHARACTERISTICS ($V_i - V_o = 5V$, $I_o = 500mA$, unless otherwise stated)

Parameter		Test Conditions		Min.	Typ.	Max.	Unit
ΔV_o	Line regulation	$V_i - V_o = 3$ to 40V	$T_j = 25°C$		0·01	0·02	%/V
					0·02	0·05	
ΔV_o	Load regulation	$V_o \leq 5V$ $I_o = 10mA$ to 1·5A	$T_j = 25°C$		5	15	mV
					20	50	
		$V_o \geq 5V$ $I_o = 10$ mA to 1·5A	$T_j = 25°C$		0·1	0·3	%
					0·3	1	
I_{ADJ}	Adjustment pin current				50	100	µA
ΔI_{ADJ}	Adjustment pin current	$V_i - V_o = 2·5$ to 40V $I_o = 10mA$ to 1·5A			0·2	5	µA
V_{REF}	Reference voltage (between pin 3 and pin 1)	$V_i - V_o = 3$ to 40V $I_o = 10mA$ to 1·5A		1·2	1·25	1·3	V
$\frac{\Delta V_o}{V_o}$	Output voltage temperature stability				1		%
I_o min	Minimum load current	$V_i - V_o = 40V$			3·5	5	mA
I_o 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)	$T_j = 25°C$, 10Hz to 10KHz			0·003		%
SVR	Supply voltage rejection (*)	$T_j = 25°C$ $f = 100Hz$	$C_{ADJ} = 0$		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. 3°C/W
R_{THj-a}	Thermal resistance junction-ambient	Max. 50°C/W

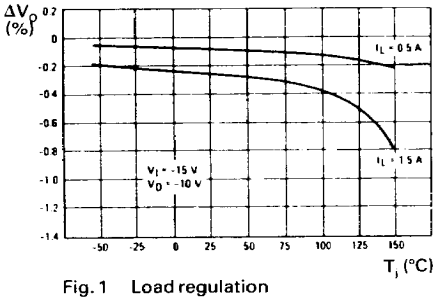

Fig. 1 Load regulation

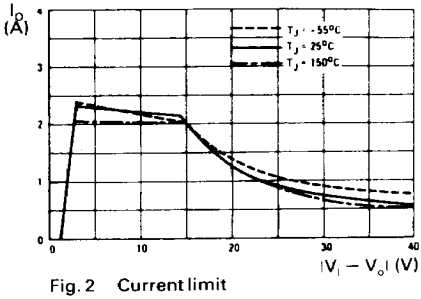

Fig. 2 Current limit

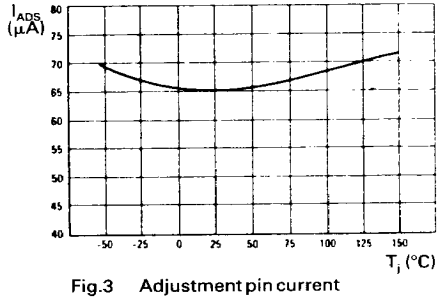

Fig.3 Adjustment pin current

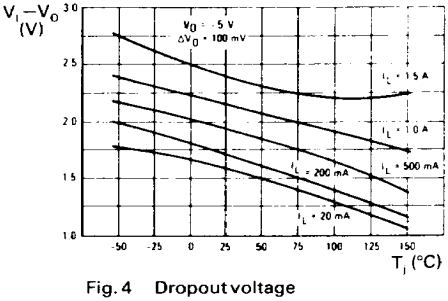

Fig. 4 Dropout voltage

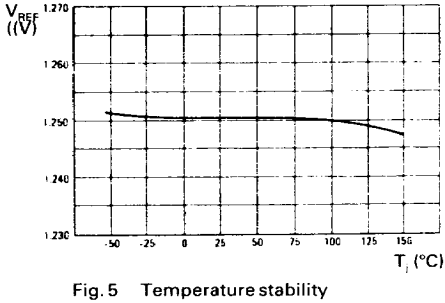

Fig. 5 Temperature stability

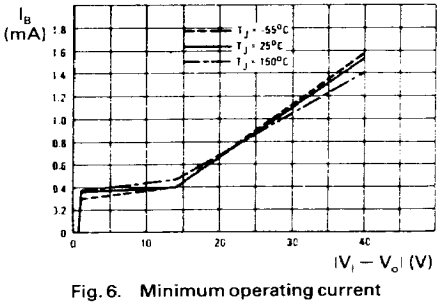

Fig. 6. Minimum operating current

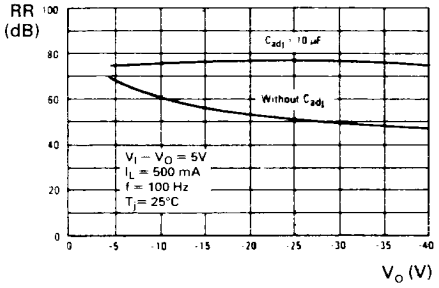

Fig. 7 Ripple reflection vs output voltage

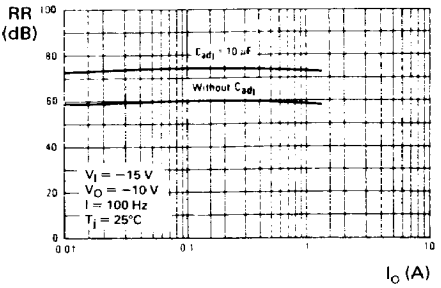

Fig. 8 Ripple rejection vs output current

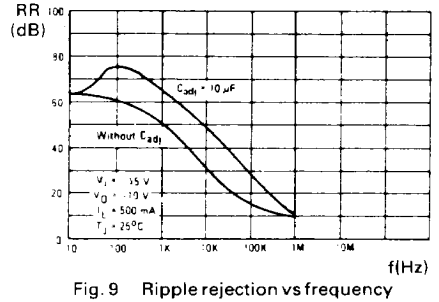

Fig. 9 Ripple rejection vs frequency

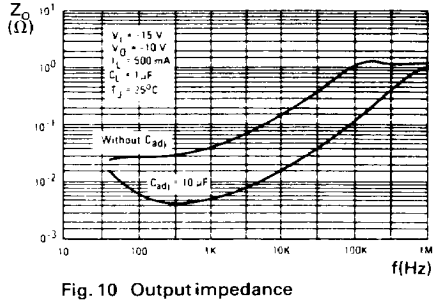

Fig. 10 Output impedance

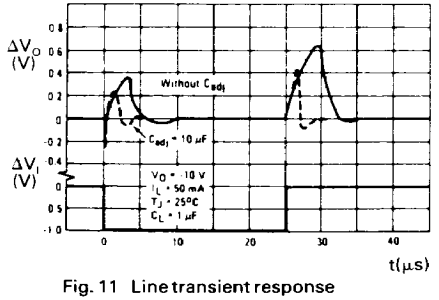

Fig. 11 Line transient response

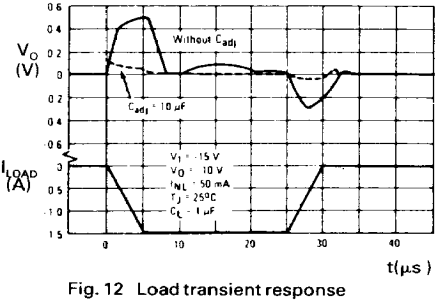

Fig. 12 Load transient response