SEMELAB

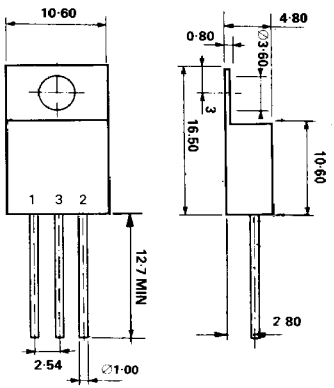
NEW PRODUCT

LM 7900–220M SERIES

NEGATIVE VOLTAGE REGULATOR TO 220 METAL

MECHANICAL DATA

Dimensions in mm



PIN 1 – Ground PIN 2 – Output PIN 3 – Input

FEATURES

- **HERMETIC TO 220 METAL PACKAGE**
- **HIGH RELIABILTY**
- **ISOLATED OPTION**
- **MILITARY OPTION**
- **SCREENING OPTIONS**

- **OUTPUT CURRENT UP TO 1·5A**
- **OUTPUT VOLTAGES OF −5, −12, −15, −24V**
- **THERMAL OVERLOAD PROTECTION**
- **SHORT CIRCUIT PROTECTION**
- **OUTPUT TRANSISTOR SOA PROTECTION**

TO220M. Metal case. Input connected to case. Marking SML LM79XX
TO220–ISO. Metal case. All leads isolated from case. Marking SML LM79XX–ISO

ABSOLUTE MAXIMUM RATINGS (T_{CASE} = 25° unless otherwise stated)

V_i	DC input voltage (for V_o = −5 to −15V)	−35V
	(for V_o = −24V)	−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

SEMELAB LTD., TELEPHONE (04555) 4711. TELEX: 341927. FAX: (04555)2612

ELECTRICAL CHARACTERISTICS (T_{CASE} = 25°C unless otherwise stated)

OUTPUT VOLTAGE		−5	−12	−15	−24	
INPUT VOLTAGE (unless otherwise specified)		−10	−19	−23	−33	Unit
Parameter	**Test conditions**	**Min. Typ. Max.**	**Min. Typ. Max.**	**Min. Typ. Max.**	**Min. Typ. Max.**	
V_o Output voltage	T_j = 25°C	−4·8 −5 −5·2	−11·5 −12 −12·5	−14·4 −15 −15·6	−23 −24 −25	V
	I_o = 5mA to 1A, $P_o \leq$ 15W	−4·75 −5 −5·25 (V_i = −8 to −20V)	−11·4 −12 −12·6 (V_i = −15·5 to −27V)	−14·3 −15 −15·7 (V_i = −18·5 to −30V)	−22·8 −24 −25·2 (V_i = −27 to −38V)	
ΔV_o Line regulation	T_j = 25°C	100 (V_i = −7 to −25V)	240 (V_i = −14·5 to −30V)	300 (V_i = −17·5 to −30V)	480 (V_i = −27 to −38V)	mV
		50 (V_i = −8 to −12V)	120 (V_i = −16 to −22V)	150 (V_i = −20 to −26V)	240 (V_i = −30 to −36V)	
ΔV_o Load regulation	T_j = 25°C, I_o = 5mA to 1·5A	100	240	300	480	mV
	T_j = 25°C, I_o = 250 to 750mA	50	120	150	240	
I_d Quiescent current	T_j = 25°C	2	3	3	3	mA
ΔI_d Quiescent current change	I_o = 5mA to 1A	0·5	0·5	0·5	0·5	mA
		1·3 (V_i = −8 to −25V)	1 (V_i = −15 to −30V)	1 (V_i = −18·5 to −30V)	1 (V_i = −27 to −38V)	
$\frac{\Delta V_o}{\Delta T}$ Output voltage drift	I_o = 5mA	−0·4	−0·8	−0·9	−1	mV/°C
e_N Output noise voltage	B = 10Hz to 100 KHz, T = 25°C	100	200	250	400	µV
SVR Supply voltage rejection	f = 100 Hz, ΔV_i = 10V	54 60	54 60	54 60	54 60	dB
V_d Dropout voltage	T_j = 25°C, I_o = 1A, ΔV_o = 100mV	2	1·1	1·1	1·1	V
I_{sc} Short circuit current	V_i = 35V, T_j = 25°C	2·1	1·5	1·3	1·1	mA
I_{scp} Short circuit peak current	T_j = 25°C	2·5	2·5	2·2	2·2	A

TYPICAL CHARACTERISTICS
(T_A =25°C unless otherwise stated)

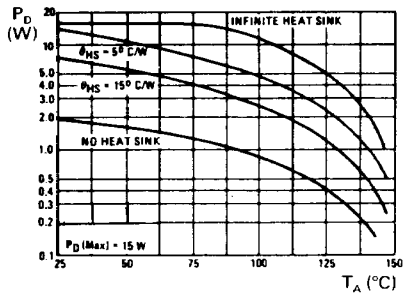


Fig. 1 Worst case Power Dissipation versus Ambient Temperature

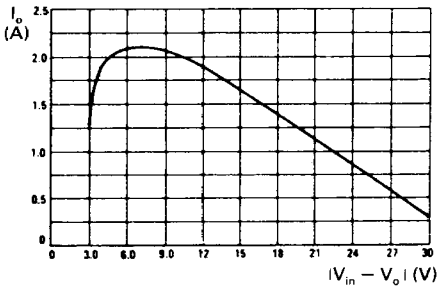


Fig. 2 Peak output current as a function of input-output differential voltage

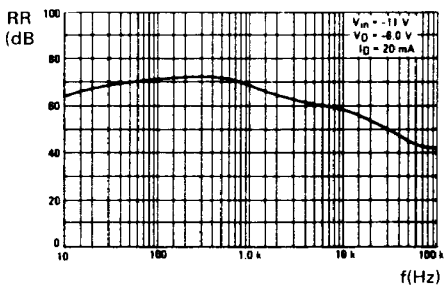


Fig. 3 Ripple rejection as a function of frequency

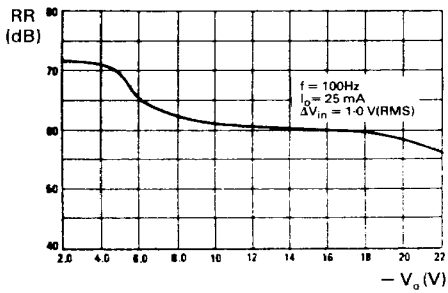


Fig. 4 Ripple rejection as a function of output voltages

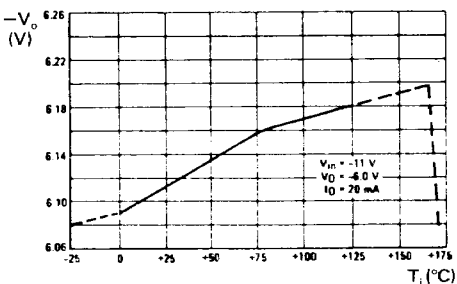


Fig. 5 Output voltage as a function of junction temperature

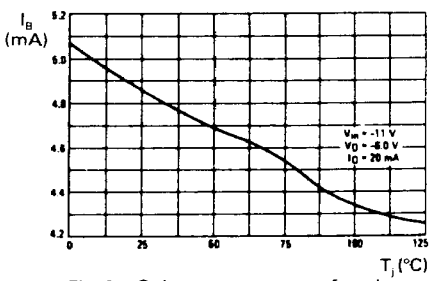
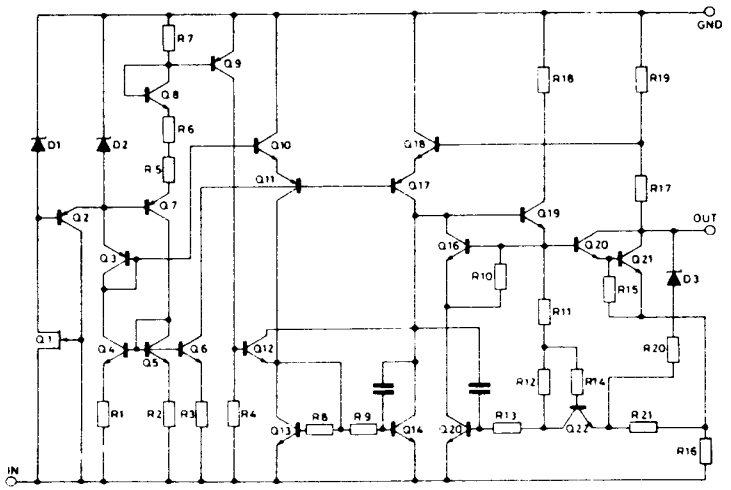
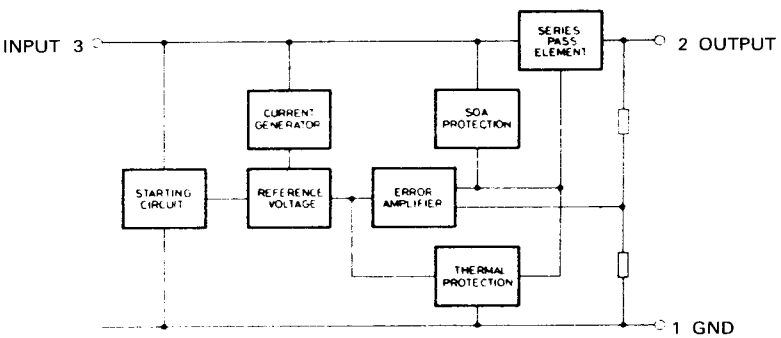


Fig. 6 Quiescent current as a function of temperature



SCHEMATIC DIAGRAM



BLOCK DIAGRAM

THERMAL DATA

$R_{TH j-case}$	Thermal resistance junction–case	Max. 3°C/W
$R_{TH j-a}$	Thermal resistance junction-ambient	Max. 50°C/W