

Pb Free Plating Product

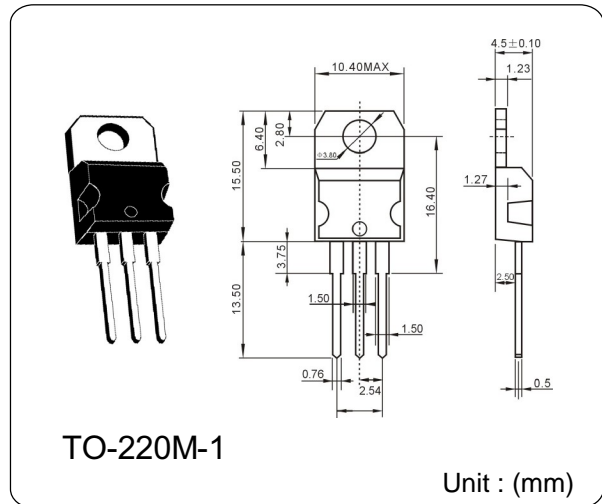
LM79XX



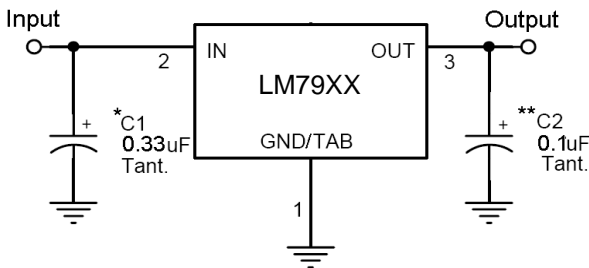
3-Terminal 1 A Negative Voltage Regulator

Features

- Output Voltage: -5 & -12V
- Output current up to 1A
- No external components required
- Internal thermal overload protection
- Internal short-circuit current limiting
- Output transistor safe-area compensation
- Output voltage offered in 4% tolerance



Standard Application Circuit



A common ground is required between the input and the output voltages. The input voltage must remain typically 2.0V above the output voltage even during the low point on the Input ripple voltage.

XX = these two digits of the type number indicate voltage.

* = Cin is required if regulator is located an appreciable distance from power supply filter.

** = Co is not needed for stability; however, it does improve transient response.

Absolute Maximum Rating (Ta = 25°C unless otherwise noted)

Parameter	Symbol	Limit	Unit
Input Voltage	V _{IN}	-35	V
Power Dissipation	P _D	Internal Limited	W
Junction Temperature	T _J	+150	°C
Storage Temperature Range	T _{STG}	-65~+150	°C
Thermal Resistance - Junction to Case	TO-220	3	°C/W
	ITO-220	5	
Thermal Resistance - Junction to Ambient	TO-220	50	°C/W
	ITO-220	60	

Note: * Follow the derating curve

LM7905 Electrical Characteristics

($V_{in} = -10V$, $I_{out} = 500mA$, $0^{\circ}C \leq T_j \leq 125^{\circ}C$, $C_{in} = 0.33\mu F$, $C_{out} = 0.1\mu F$; unless otherwise specified.)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit	
Output voltage	Vout	$T_j = 25^{\circ}C$	-4.80	-5	-5.20	V	
		$-7.5V \leq V_{in} \leq -20V$, $10mA \leq I_{out} \leq 1A$, $PD \leq 15W$	-4.75	-5	-5.25		
Line Regulation	REGline	$T_j = 25^{\circ}C$	$-7.5V \leq V_{in} \leq -25V$	--	3	100	mV
			$-8V \leq V_{in} \leq -12V$	--	1	50	
Load Regulation	REGload	$T_j = 25^{\circ}C$	$10mA \leq I_{out} \leq 1A$	--	15	100	
			$250mA \leq I_{out} \leq 750mA$	--	5	50	
Quiescent Current	Iq	$I_{out} = 0$, $T_j = 25^{\circ}C$	--	4	8	mA	
Quiescent Current Change	ΔIq	$-7.5V \leq V_{in} \leq -25V$	--	--	1.3		
		$10mA \leq I_{out} \leq 1A$	--	--	0.5		
Output Noise Voltage	Vn	$10Hz \leq f \leq 100KHz$, $T_j = 25^{\circ}C$	--	40	--	μV	
Ripple Rejection Ratio	RR	$f = 120Hz$, $-8V \leq V_{in} \leq -18V$	62	74	--	dB	
Voltage Drop	Vdrop	$I_{out} = 1A$, $T_j = 25^{\circ}C$	--	2	--	V	
Output Short Circuit Current	Ios	$T_j = 25^{\circ}C$	--	750	--	mA	
Peak Output Current	I _{o peak}	$T_j = 25^{\circ}C$	--	2.1	--	A	
Temperature Coefficient of Output Voltage	$\Delta V_{out} / \Delta T_j$	$I_{out} = 10mA$, $0^{\circ}C \leq T_j \leq 125^{\circ}C$	--	-0.1	--	mV/°C	

LM7912 Electrical Characteristics

($V_{in} = -19V$, $I_{out} = 500mA$, $0^{\circ}C \leq T_j \leq 125^{\circ}C$, $C_{in} = 0.33\mu F$, $C_{out} = 0.1\mu F$; unless otherwise specified.)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit	
Output Voltage	Vout	$T_j = 25^{\circ}C$	-11.53	-12	-12.48	V	
		$-14.5V \leq V_{in} \leq -27V$, $10mA \leq I_{out} \leq 1A$, $PD \leq 15W$	-11.42	-12	-12.60		
Line Regulation	REGline	$T_j = 25^{\circ}C$	$-14.5V \leq V_{in} \leq -30V$	--	10	240	mV
			$-15V \leq V_{in} \leq -19V$	--	3	120	
Load Regulation	REGload	$T_j = 25^{\circ}C$	$10mA \leq I_{out} \leq 1A$	--	12	240	
			$250mA \leq I_{out} \leq 750mA$	--	4	120	
Quiescent Current	Iq	$T_j = 25^{\circ}C$, $I_{out} = 0$	--	4.3	8	mA	
Quiescent Current Change	ΔIq	$-14.5V \leq V_{in} \leq -30V$	--	--	1		
		$10mA \leq I_{out} \leq 1A$	--	--	0.5		
Output Noise Voltage	Vn	$10Hz \leq f \leq 100KHz$, $T_j = 25^{\circ}C$	--	75	--	μV	
Ripple Rejection Ratio	RR	$f = 120Hz$, $-15V \leq V_{in} \leq -25V$	55	70	--	dB	
Voltage Drop	Vdrop	$I_{out} = 1A$, $T_j = 25^{\circ}C$	--	2	--	V	
Output Short Circuit Current	Ios	$T_j = 25^{\circ}C$	--	350	--	mA	
Peak Output Current	I _{o peak}	$T_j = 25^{\circ}C$	--	2.1	--	A	
Temperature Coefficient of Output Voltage	$\Delta V_{out} / \Delta T_j$	$I_{out} = 10mA$, $0^{\circ}C \leq T_j \leq 125^{\circ}C$	--	-1	--	mV/°C	

- Pulse testing techniques are used to maintain the junction temperature as close to the ambient temperature as possible, and thermal effects must be taken into account separately.
- This specification applies only for DC power dissipation permitted by absolute maximum ratings.

Electrical Characteristics Curve

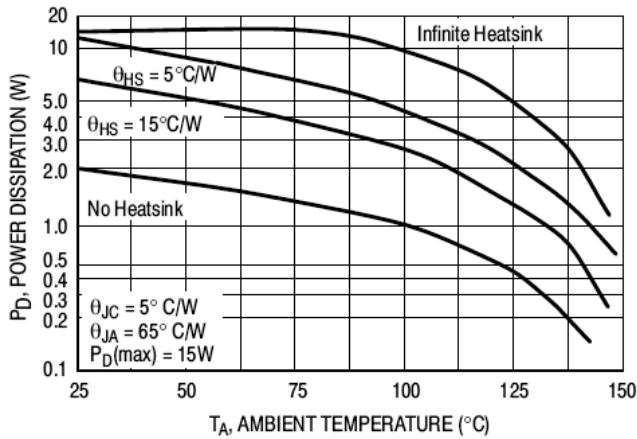


Figure 1. Worst Case Power Dissipation as a Function of Ambient Temperature

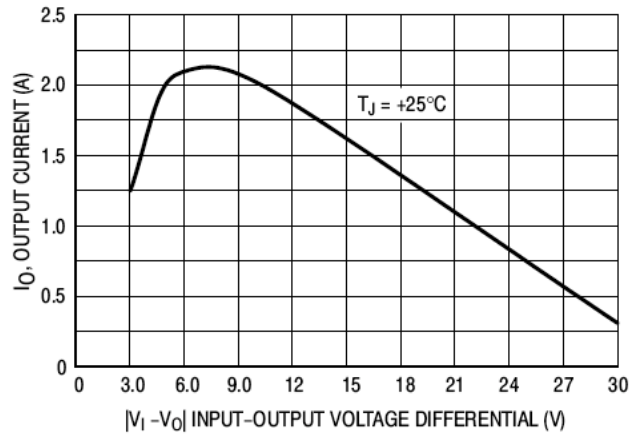


Figure 2. Peak Output Current as a Function of Input-Output Differential Voltage

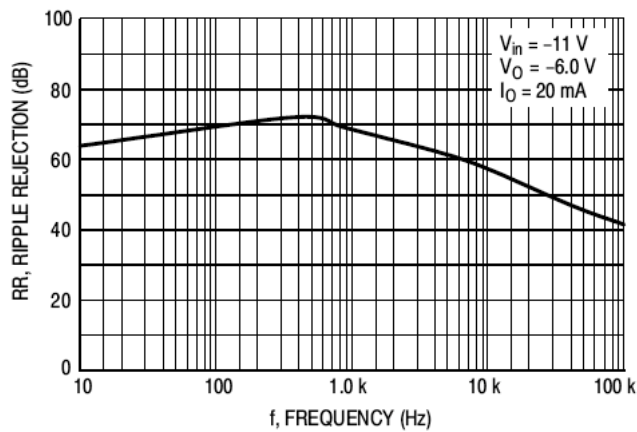


Figure 3. Ripple Rejection as a Function of Frequency

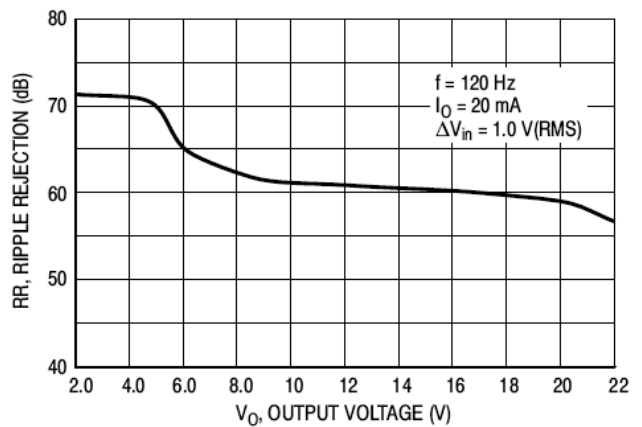


Figure 4. Ripple Rejection as a Function of Output Voltage

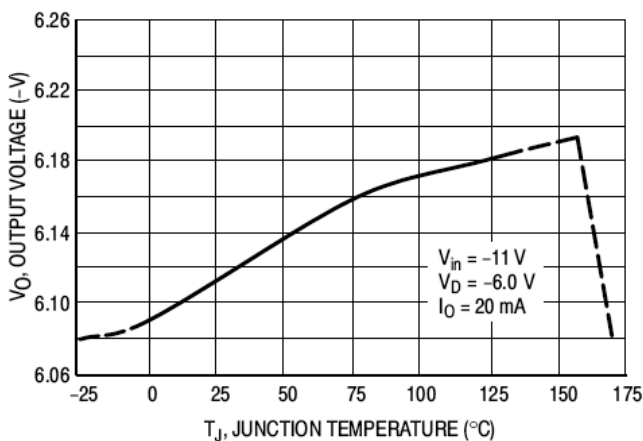


Figure 5. Output Voltage as a Function of Junction Temperature

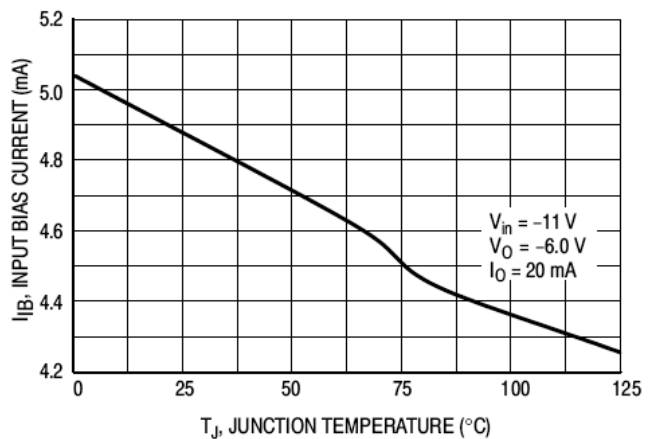


Figure 5. Output Voltage as a Function of Junction Temperature