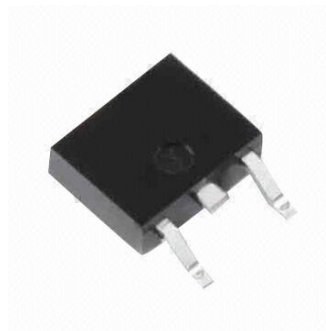


79M05/79M12

1 Ampere Surface Mount Negative Three Terminal Voltage Regulators

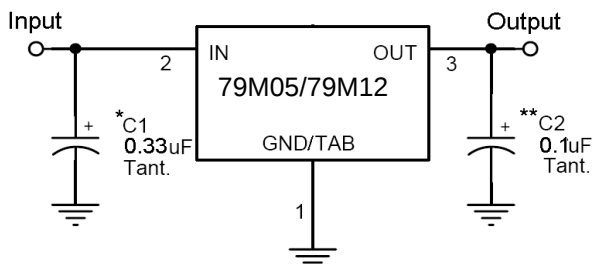
Features

- 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



DKAK/TO-252

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	Rθ _{JC}	3	°C/W
	TO-252		5	
Thermal Resistance - Junction to Ambient	TO-220	Rθ _{JA}	50	°C/W
	TO-252		60	

Note: * Follow the derating curve

79M05/79M12

79M05 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	V_{out}	$T_j = 25^{\circ}C$	-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	REG _{line}	$T_j = 25^{\circ}C$				mV
		$-7.5V \leq V_{in} \leq -25V$	--	3	100	
		$-8V \leq V_{in} \leq -12V$	--	1	50	
Load Regulation	REG _{load}	$T_j = 25^{\circ}C$				mV
		$10mA \leq I_{out} \leq 1A$	--	15	100	
		$250mA \leq I_{out} \leq 750mA$	--	5	50	
Quiescent Current	I_q	$I_{out} = 0$, $T_j = 25^{\circ}C$	--	4	8	mA
Quiescent Current Change	ΔI_q	$-7.5V \leq V_{in} \leq -25V$	--	--	1.3	
		$10mA \leq I_{out} \leq 1A$	--	--	0.5	
Output Noise Voltage	V_n	$10Hz \leq f \leq 100KHz$, $T_j = 25^{\circ}C$	--	40	--	μV
Ripple Rejection Ratio	RR	$f = 120Hz$, $-8V \leq V_{in} \leq -18V$	62	74	--	dB
Voltage Drop	V_{drop}	$I_{out} = 1A$, $T_j = 25^{\circ}C$	--	2	--	V
Output Short Circuit Current	I_{os}	$T_j = 25^{\circ}C$	--	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/ $^{\circ}C$

79M12 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	V_{out}	$T_j = 25^{\circ}C$	-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	REG _{line}	$T_j = 25^{\circ}C$				mV
		$-14.5V \leq V_{in} \leq -30V$	--	10	240	
		$-15V \leq V_{in} \leq -19V$	--	3	120	
Load Regulation	REG _{load}	$T_j = 25^{\circ}C$				mV
		$10mA \leq I_{out} \leq 1A$	--	12	240	
		$250mA \leq I_{out} \leq 750mA$	--	4	120	
Quiescent Current	I_q	$T_j = 25^{\circ}C$, $I_{out} = 0$	--	4.3	8	mA
Quiescent Current Change	ΔI_q	$-14.5V \leq V_{in} \leq -30V$	--	--	1	
		$10mA \leq I_{out} \leq 1A$	--	--	0.5	
Output Noise Voltage	V_n	$10Hz \leq f \leq 100KHz$, $T_j = 25^{\circ}C$	--	75	--	μV
Ripple Rejection Ratio	RR	$f = 120Hz$, $-15V \leq V_{in} \leq -25V$	55	70	--	dB
Voltage Drop	V_{drop}	$I_{out} = 1A$, $T_j = 25^{\circ}C$	--	2	--	V
Output Short Circuit Current	I_{os}	$T_j = 25^{\circ}C$	--	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/ $^{\circ}C$

- 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

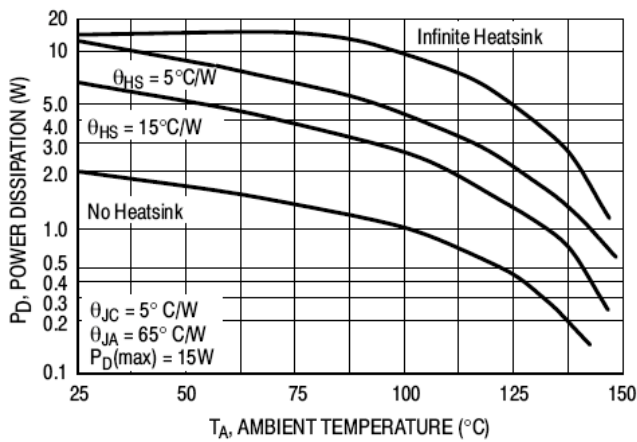


Figure 1. Worst Case Power Dissipation as a Function of Ambient Temperature

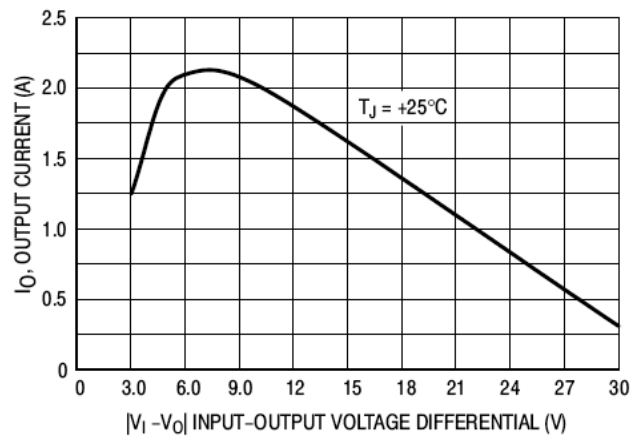


Figure 2. Peak Output Current as a Function of Input-Output Differential Voltage

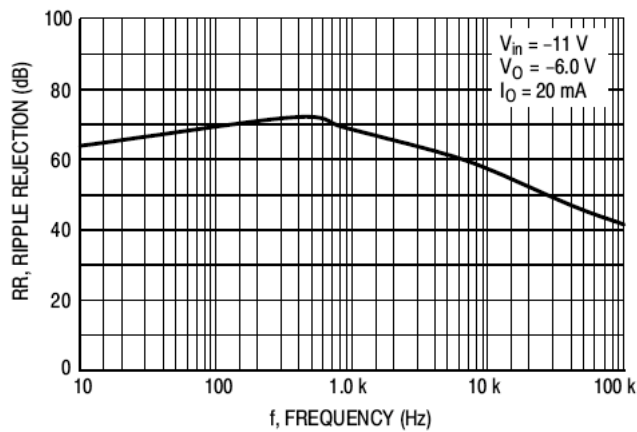


Figure 3. Ripple Rejection as a Function of Frequency

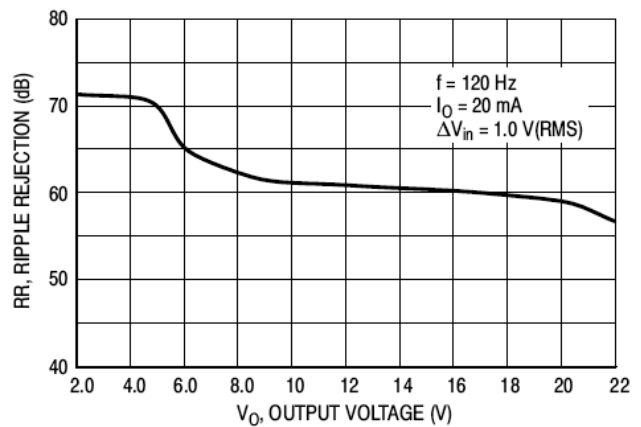


Figure 4. Ripple Rejection as a Function of Output Voltage

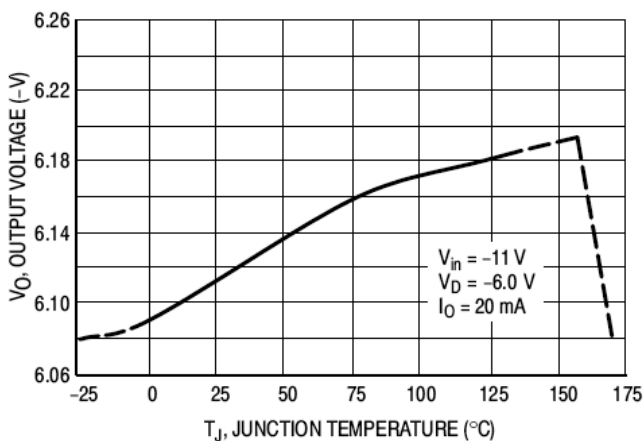


Figure 5. Output Voltage as a Function of Junction Temperature

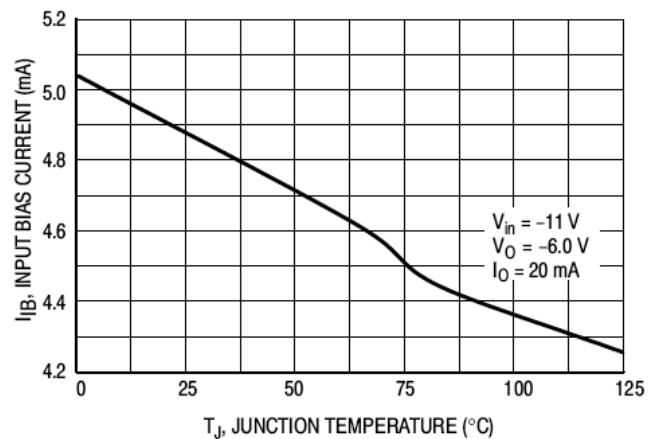


Figure 5. Output Voltage as a Function of Junction Temperature