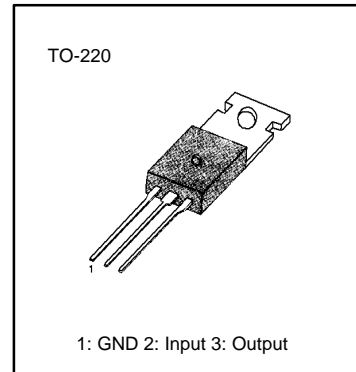


**3-TERMINAL 1A NEGATIVE VOLTAGE REGULATORS**

The MC79XX series of three-terminal negative regulators are available in TO-220 package and with several fixed output voltages, making them useful in a wide range of applications. Each type employs internal current limiting, thermal shut-down and safe area protection, making it essentially indestructible.

**FEATURES**

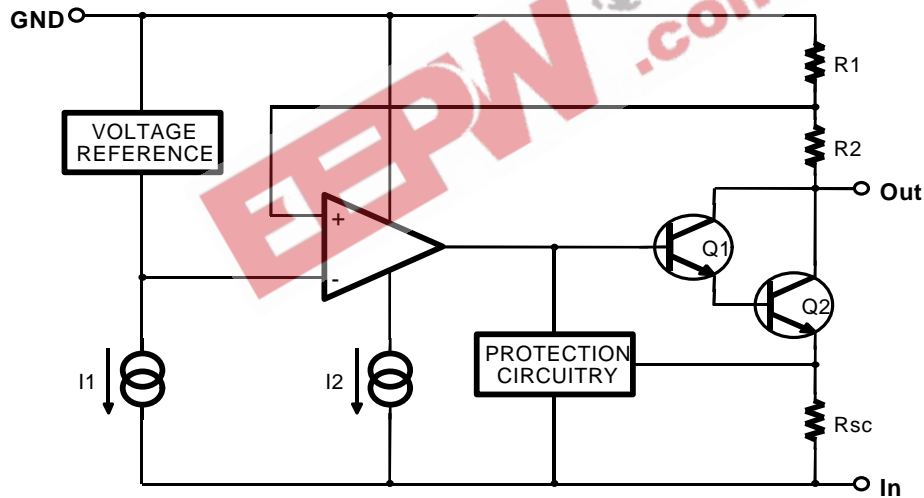
- Output Current in Excess of 1A
- Output Voltages of -5, -6, -8, -12, -15, -18, -24V
- Internal Thermal Overload Protection
- Short Circuit Protection
- Output Transistor Safe-Area Compensation



**ORDERING INFORMATION**

Device	Output Voltage Tolerance	Package	Operating Temperature
MC79XXCT (LM79XXCT) (KA79XX)	± 4%	TO-220	0 ~+125°C
KA79XXA	± 2%		

**BLOCK DIAGRAM**



**MC79XX (LM79XX) (KA79XX/A)**
**FIXED VOLTAGE REGULATOR (NEGATIVE)**
**ABSOLUTE MAXIMUM RATINGS** ( $T_A=+25^{\circ}\text{C}$ , unless otherwise specified)

Characteristic	Symbol	Value	Unit
Input Voltage	$V_i$	-35	V
Thermal Resistance Junction-Cases	$R_{\theta JC}$	5	$^{\circ}\text{C} / \text{W}$
Junction-Air	$R_{\theta JA}$	65	$^{\circ}\text{C} / \text{W}$
Operating Temperature Range	$T_{\text{OPR}}$	0 ~ +125	$^{\circ}\text{C}$
Storage Temperature Range	$T_{\text{STG}}$	- 65 ~ +150	$^{\circ}\text{C}$

**LM7905 ELECTRICAL CHARACTERISTICS**
 $(V_i = 10\text{V}, I_o = 500\text{mA}, 0^{\circ}\text{C} \leq T_J \leq +125^{\circ}\text{C}, C_i = 2.2\mu\text{F}, C_o = 1\mu\text{F}, \text{ unless otherwise specified.})$ 

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	$V_o$	$T_J = +25^{\circ}\text{C}$	- 4.8	- 5.0	- 5.2	V
		$I_o = 5\text{mA to } 1\text{A}, P_o = 15\text{W}$ $V_i = -7 \text{ to } -20\text{V}$	- 4.75	- 5.0	- 5.25	
Line Regulation	$\Delta V_o$	$T_J = +25^{\circ}\text{C}$ $V_i = -7 \text{ to } -20\text{V}$ $I_o = 1\text{A}$		5	50	mV
		$V_i = -8 \text{ to } -12\text{V}$ $I_o = 1\text{A}$		2	25	
		$V_i = -7.5 \text{ to } -25\text{V}$		7	50	
		$V_i = -8 \text{ to } -12\text{V}$ $I_o = 1\text{A}$		7	50	
Load Regulation	$\Delta V_o$	$I_o = 5\text{mA to } 1.5\text{A}$		10	100	mV
		$T_J = +25^{\circ}\text{C}$ $I_o = 250 \text{ to } 750\text{mA}$		3	50	
Quiescent Current	$I_q$	$T_J = +25^{\circ}\text{C}$		3	6	mA
Quiescent Current Change	$\Delta I_q$	$I_o = 5\text{mA to } 1\text{A}$		0.05	0.5	mA
		$V_i = -8 \text{ to } -25\text{V}$		0.1	0.8	
Temperature Coefficient of $V_D$	$\Delta V_o / \Delta T$	$I_o = 5\text{mA}$		- 0.4		mV/ $^{\circ}\text{C}$
Output Noise Voltage	$V_N$	$f = 10\text{Hz to } 100\text{KHz}$ $T_A = +25^{\circ}\text{C}$		40		$\mu\text{V}$
Ripple Rejection	RR	$f = 120\text{Hz}, I_o = -35\text{V}$ $\Delta V_i = 10\text{V}$	54	60		dB
Dropout Voltage	$V_D$	$T_J = +25^{\circ}\text{C}$ $I_o = 1\text{A}$		2		V
Short Circuit Current	$I_{SC}$	$T_J = +25^{\circ}\text{C}, V_i = -35\text{V}$		300		mA
Peak Current	$I_{PK}$	$T_J = +25^{\circ}\text{C}$		2.2		A

\* Load and line regulation are specified at constant junction temperature. Changes in  $V_o$  due to heating effects must be taken into account separately. Pulse testing with low duty is used.

**LM7906 ELECTRICAL CHARACTERISTICS**(V<sub>I</sub> = 11V, I<sub>O</sub> = 500mA, 0°C ≤ T<sub>J</sub> ≤ +125°C, C<sub>I</sub> = 2.2μF, C<sub>O</sub> = 1μF, unless otherwise specified.)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	V <sub>O</sub>	T <sub>J</sub> = +25°C	- 5.75	- 6	- 6.25	V
		I <sub>O</sub> = 5mA to 1A, P <sub>O</sub> 15W V <sub>I</sub> = - 9 to - 21V	- 5.7	- 6	- 6.3	
Line Regulation	ΔV <sub>O</sub>	T <sub>J</sub> = 25°C	V <sub>I</sub> = - 8 to - 25V	10	120	mV
			V <sub>I</sub> = - 9 to - 12V	5	60	
Load Regulation	ΔV <sub>O</sub>	T <sub>J</sub> = + 25°C I <sub>O</sub> = 5mA to 1.5A		10	120	mV
		T <sub>J</sub> = + 25°C I <sub>O</sub> = 250 to 750mA		3	60	
Quiescent Current	I <sub>Q</sub>	T <sub>J</sub> = + 25°C		3	6	mA
Quiescent Current Change	ΔI <sub>Q</sub>	I <sub>O</sub> = 5mA to 1A			0.5	mA
		V <sub>I</sub> = -9 to -25V			1.3	
Temperature Coefficient of V <sub>D</sub>	ΔV <sub>O</sub> /ΔT	I <sub>O</sub> = 5mA		-0.5		mV/°C
Output Noise Voltage	V <sub>N</sub>	f = 10Hz to 100KHz T <sub>A</sub> = + 25°C		130		μV
Ripple Rejection	RR	f = 120Hz ΔV <sub>I</sub> = 10V	54	60		dB
Dropout Voltage	V <sub>D</sub>	T <sub>J</sub> = + 25°C I <sub>O</sub> = 1A		2		V
Short Circuit Current	I <sub>SC</sub>	T <sub>J</sub> = +25°C, V <sub>I</sub> = -35V		300		mA
Peak Current	I <sub>PK</sub>	T <sub>J</sub> = +25°C		2.2		A

\* Load and line regulation are specified at constant junction temperature. Changes in V<sub>O</sub> due to heating effects must be taken into account separately. Pulse testing with low duty is used.

**LM7908 ELECTRICAL CHARACTERISTICS**(V<sub>I</sub> = 14V, I<sub>O</sub> = 500mA, 0°C ≤ T<sub>J</sub> ≤ +125°C, C<sub>I</sub> = 2.2μF, C<sub>O</sub> = 1μF, unless otherwise specified.)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	V <sub>O</sub>	T <sub>J</sub> = +25°C	- 7.7	- 8	- 8.3	V
		I <sub>O</sub> = 5mA to 1A, P <sub>O</sub> 15W V <sub>I</sub> = -1.5 to -23V	- 7.6	- 8	- 8.4	
Line Regulation	ΔV <sub>O</sub>	T <sub>J</sub> = 25°C		10	100	mV
		V <sub>I</sub> = -10.5 to -25V V <sub>I</sub> = -11 to -17V		5	80	
Load Regulation	ΔV <sub>O</sub>	T <sub>J</sub> = +25°C I <sub>O</sub> = 5mA to 1.5A		12	160	mV
		T <sub>J</sub> = +25°C I <sub>O</sub> = 250 to 750mA		4	80	
Quiescent Current	I <sub>Q</sub>	T <sub>J</sub> = +25°C		3	6	mA
Quiescent Current Change	ΔI <sub>Q</sub>	I <sub>O</sub> = 5mA to 1A		0.05	0.5	mA
		V <sub>I</sub> = -11.5 to -25V		0.1	1	
Temperature Coefficient of V <sub>D</sub>	ΔV <sub>O</sub> /ΔT	I <sub>O</sub> = 5mA		-0.6		mV/°C
Output Noise Voltage	V <sub>N</sub>	f = 10Hz to 100KHz T <sub>A</sub> = +25°C		175		μV
Ripple Rejection	RR	f = 120Hz ΔV <sub>I</sub> = 10V	54	60		dB
Dropout Voltage	V <sub>D</sub>	T <sub>J</sub> = +25°C I <sub>O</sub> = 1A		2		V
Short Circuit Current	I <sub>SC</sub>	T <sub>J</sub> = +25°C, V <sub>I</sub> = -35V		300		mA
Peak Current	I <sub>PK</sub>	T <sub>J</sub> = +25°C		2.2		A

\* Load and line regulation are specified at constant junction temperature. Changes in V<sub>O</sub> due to heating effects must be taken into account separately. Pulse testing with low duty is used.

**LM7909 ELECTRICAL CHARACTERISTICS**(V<sub>I</sub> = 14V, I<sub>O</sub> = 500mA, 0°C ≤ T<sub>J</sub> ≤ +125°C, C<sub>I</sub> = 2.2μF, C<sub>O</sub> = 1μF, unless otherwise specified)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	V <sub>O</sub>	T <sub>J</sub> = +25°C	-8.7	-9.0	-9.3	V
		I <sub>O</sub> = 5mA to 1A, P <sub>O</sub> 15W V <sub>I</sub> = -1.5 to -23V	-8.6	-9.0	-9.4	
Line Regulation	ΔV <sub>O</sub>	T <sub>J</sub> = 25°C		10	180	mV
		V <sub>I</sub> = -10.5 to -25V V <sub>I</sub> = -11 to -17V		5	90	
Load Regulation	ΔV <sub>O</sub>	T <sub>J</sub> = +25°C I <sub>O</sub> = 5mA to 1.5A		12	180	mV
		T <sub>J</sub> = +25°C I <sub>O</sub> = 250 to 750mA		4	90	
Quiescent Current	I <sub>Q</sub>	T <sub>J</sub> = +25°C		3	6	mA
Quiescent Current Change	ΔI <sub>Q</sub>	I <sub>O</sub> = 5mA to 1A		0.05	0.5	mA
		V <sub>I</sub> = -11.5 to -25V		0.1	1	
Temperature Coefficient of V <sub>D</sub>	ΔV <sub>O</sub> /ΔT	I <sub>O</sub> = 5mA		-0.6		mV/°C
Output Noise Voltage	V <sub>N</sub>	f = 10Hz to 100KHz T <sub>A</sub> = +25°C		175		μV
Ripple Rejection	RR	f = 120Hz ΔV <sub>I</sub> = 10V	54	60		dB
Dropout Voltage	V <sub>D</sub>	T <sub>J</sub> = +25°C I <sub>O</sub> = 1A		2		V
Short Circuit Current	I <sub>SC</sub>	T <sub>J</sub> = +25°C, V <sub>I</sub> = -35V		300		mA
Peak Current	I <sub>PK</sub>	T <sub>J</sub> = +25°C		2.2		A

\* Load and line regulation are specified at constant junction temperature. Changes in V<sub>O</sub> due to heating effects must be taken into account separately. Pulse testing with low duty is used.

**LM7912 ELECTRICAL CHARACTERISTICS**(V<sub>I</sub> = 18V, I<sub>O</sub> = 500mA, 0°C ≤ T<sub>J</sub> ≤ +125°C, C<sub>I</sub> = 2.2μF, C<sub>O</sub> = 1μF, unless otherwise specified.)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	V <sub>O</sub>	T <sub>J</sub> = +25°C	-11.5	-12	-12.5	V
		I <sub>O</sub> = 5mA to 1A, P <sub>O</sub> = 15W V <sub>I</sub> = -15.5 to -27V	-11.4	-12	-12.6	
Line Regulation	ΔV <sub>O</sub>	T <sub>J</sub> = 25°C		12	240	mV
		V <sub>I</sub> = -14.5 to -30V V <sub>I</sub> = -16 to -22V		6	120	
Load Regulation	ΔV <sub>O</sub>	T <sub>J</sub> = +25°C I <sub>O</sub> = 5mA to 1.5A		12	240	mV
		T <sub>J</sub> = +25°C I <sub>O</sub> = 250 to 750mA		4	120	
Quiescent Current	I <sub>Q</sub>	T <sub>J</sub> = +25°C		3	6	mA
Quiescent Current Change	ΔI <sub>Q</sub>	I <sub>O</sub> = 5mA to 1A		0.05	0.5	mA
		V <sub>I</sub> = -15 to -30V		0.1	1	
Temperature Coefficient of V <sub>D</sub>	ΔV <sub>O</sub> /ΔT	I <sub>O</sub> = 5mA		-0.8		mV/°C
Output Noise Voltage	V <sub>N</sub>	f = 10Hz to 100KHz T <sub>A</sub> = +25°C		200		μV
Ripple Rejection	RR	f = 120Hz ΔV <sub>I</sub> = 10V	54	60		dB
Dropout Voltage	V <sub>D</sub>	T <sub>J</sub> = +25°C I <sub>O</sub> = 1A		2		V
Short Circuit Current	I <sub>SC</sub>	T <sub>J</sub> = +25°C, V <sub>I</sub> = -35V		300		mA
Peak Current	I <sub>PK</sub>	T <sub>J</sub> = +25°C		2.2		A

\* Load and line regulation are specified at constant junction temperature. Changes in V<sub>O</sub> due to heating effects must be taken into account separately. Pulse testing with low duty is used.

**LM7915 ELECTRICAL CHARACTERISTICS**(V<sub>I</sub> = 23V, I<sub>O</sub> = 500mA, 0°C ≤ T<sub>J</sub> ≤ +125°C, C<sub>I</sub> = 2.2μF, C<sub>O</sub> = 1μF, unless otherwise specified.)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	V <sub>O</sub>	T <sub>J</sub> = +25°C	-14.4	-15	-15.6	V
		I <sub>O</sub> = 5mA to 1A, P <sub>O</sub> = 15W V <sub>I</sub> = -18 to -30V	-14.25	-15	-15.75	
Line Regulation	ΔV <sub>O</sub>	T <sub>J</sub> = 25°C	V <sub>I</sub> = -17.5 to -30V	12	300	mV
			V <sub>I</sub> = -20 to -26V	6	150	
Load Regulation	ΔV <sub>O</sub>	T <sub>J</sub> = +25°C I <sub>O</sub> = 5mA to 1.5A		12	300	mV
		T <sub>J</sub> = +25°C I <sub>O</sub> = 250 to 750mA		4	150	
Quiescent Current	I <sub>O</sub>	T <sub>J</sub> = +25°C		3	6	mA
Quiescent Current Change	ΔI <sub>O</sub>	I <sub>O</sub> = 5mA to 1A		0.05	0.5	mA
		V <sub>I</sub> = -18.5 to -30V		0.1	1	
Temperature Coefficient of V <sub>D</sub>	ΔV <sub>O</sub> /ΔT	I <sub>O</sub> = 5mA		-0.9		mV/°C
Output Noise Voltage	V <sub>N</sub>	f = 10Hz to 100KHz T <sub>A</sub> = +25°C		250		μV
Ripple Rejection	RR	f = 120Hz ΔV <sub>I</sub> = 10V	54	60		dB
Dropout Voltage	V <sub>D</sub>	T <sub>J</sub> = +25°C I <sub>O</sub> = 1A		2		V
Short Circuit Current	I <sub>SC</sub>	T <sub>J</sub> = +25°C, V <sub>I</sub> = -35V		300		mA
Peak Current	I <sub>PK</sub>	T <sub>J</sub> = +25°C		2.2		A

\* Load and line regulation are specified at constant junction temperature. Changes in V<sub>O</sub> due to heating effects must be taken into account separately. Pulse testing with low duty is used.

**LM7918 ELECTRICAL CHARACTERISTICS**(V<sub>I</sub> = 27V, I<sub>O</sub> = 500mA, 0°C ≤ T<sub>J</sub> ≤ +125°C, C<sub>I</sub> = 2.2μF, C<sub>O</sub> = 1μF, unless otherwise specified.)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	V <sub>O</sub>	T <sub>J</sub> = +25°C	-17.3	-18	-18.7	V
		I <sub>O</sub> = 5mA to 1A, P <sub>O</sub> 15W V <sub>I</sub> = -22.5 to -33V	-17.1	-18	-18.9	
Line Regulation	ΔV <sub>O</sub>	T <sub>J</sub> = 25°C	V <sub>I</sub> = -21 to -33V	15	360	mV
			V <sub>I</sub> = -24 to -30V	8	180	
Load Regulation	ΔV <sub>O</sub>	T <sub>J</sub> = +25°C I <sub>O</sub> = 5mA to 1.5A		15	360	mV
		T <sub>J</sub> = +25°C I <sub>O</sub> = 250 to 750mA		5	180	
Quiescent Current	I <sub>O</sub>	T <sub>J</sub> = +25°C		3	6	mA
Quiescent Current Change	ΔI <sub>O</sub>	I <sub>O</sub> = 5mA to 1A			0.5	mA
		V <sub>I</sub> = -22 to -33V			1	
Temperature Coefficient of V <sub>D</sub>	ΔV <sub>O</sub> /ΔT	I <sub>O</sub> = 5mA		-1		mV/°C
Output Noise Voltage	V <sub>N</sub>	f = 10Hz to 100KHz T <sub>A</sub> = +25°C		300		μV
Ripple Rejection	RR	f = 120Hz ΔV <sub>I</sub> = 10V	54	60		dB
Dropout Voltage	V <sub>D</sub>	T <sub>J</sub> = +25°C I <sub>O</sub> = 1A		2		V
Short Circuit Current	I <sub>SC</sub>	T <sub>J</sub> = +25°C, V <sub>I</sub> = -35V		300		mA
Peak Current	I <sub>PK</sub>	T <sub>J</sub> = +25°C		2.2		A

\* Load and line regulation are specified at constant junction temperature. Changes in V<sub>O</sub> due to heating effects must be taken into account separately. Pulse testing with low duty is used.



**LM7924 ELECTRICAL CHARACTERISTICS**(V<sub>I</sub> = 33V, I<sub>O</sub> = 500mA, 0°C ≤ T<sub>J</sub> ≤ +125°C, C<sub>I</sub> = 2.2μF, C<sub>O</sub> = 1μF, unless otherwise specified.)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	V <sub>O</sub>	T <sub>J</sub> = +25°C	- 23	- 24	- 25	V
		I <sub>O</sub> = 5mA to 1A, P <sub>O</sub> ≤ 15W V <sub>I</sub> = -27 to -38V	- 22.8	- 24	- 25.2	
Line Regulation	ΔV <sub>O</sub>	T <sub>J</sub> = 25°C		15	480	mV
		V <sub>I</sub> = - 27 to - 38V V <sub>I</sub> = - 30 to - 36V		8	180	
Load Regulation	ΔV <sub>O</sub>	T <sub>J</sub> = +25°C I <sub>O</sub> = 5mA to 1.5A		15	480	mV
		T <sub>J</sub> = + 25°C I <sub>O</sub> = 250 to 750mA		5	240	
Quiescent Current	I <sub>Q</sub>	T <sub>J</sub> = + 25°C		3	6	mA
Quiescent Current Change	ΔI <sub>Q</sub>	I <sub>O</sub> = 5mA to 1A			0.5	mA
		V <sub>I</sub> = -27 to -38V			1	
Temperature Coefficient of V <sub>O</sub>	ΔV <sub>O</sub> /ΔT	I <sub>O</sub> = 5mA		-1		mV/°C
Output Noise Voltage	V <sub>N</sub>	f = 10Hz to 100KHz T <sub>A</sub> = + 25°C		400		μV
Ripple Rejection	RR	f = 120Hz ΔV <sub>I</sub> = 10V	54	60		dB
Dropout Voltage	V <sub>D</sub>	T <sub>J</sub> = +25°C I <sub>O</sub> = 1A		2		V
Short Circuit Current	I <sub>SC</sub>	T <sub>J</sub> = + 25°C, V <sub>I</sub> = -35V		300		mA
Peak Current	I <sub>PK</sub>	T <sub>J</sub> = +25°C		2.2		A

\* Load and line regulation are specified at constant junction temperature. Changes in V<sub>O</sub> due to heating effects must be taken into account separately. Pulse testing with low duty is used.

**LM7905A ELECTRICAL CHARACTERISTICS**(V<sub>I</sub> = 10V, I<sub>O</sub> = 500mA, 0°C ≤ T<sub>J</sub> ≤ +125°C, C<sub>I</sub> = 2.2μF, C<sub>O</sub> = 1μF, unless otherwise specified.)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	V <sub>O</sub>	T <sub>J</sub> = +25°C	-4.9	-5.0	-5.1	V
		I <sub>O</sub> = 5mA to 1A, P <sub>O</sub> 15W V <sub>I</sub> = -7 to -20V	-4.8	-5.0	-5.2	
Line Regulation	ΔV <sub>O</sub>	V <sub>I</sub> = -7 to -20V I <sub>O</sub> = 1A T <sub>J</sub> = +25°C		5	50	mV
		V <sub>I</sub> = -8 to -12V I <sub>O</sub> = 1A		2	25	
		V <sub>I</sub> = -7.5 to -25V		7	50	
		V <sub>I</sub> = -8 to -12V I <sub>O</sub> = 1A		7	50	
Load Regulation	ΔV <sub>O</sub>	I <sub>O</sub> = 5mA to 1.5A		10	100	mV
		T <sub>J</sub> = +25°C I <sub>O</sub> = 250 to 750mA		3	50	
Quiescent Current	I <sub>Q</sub>	T <sub>J</sub> = +25°C		3	6	mA
Quiescent Current Change	ΔI <sub>Q</sub>	I <sub>O</sub> = 5mA to 1A		0.05	0.5	mA
		V <sub>I</sub> = -8 to -25V		0.1	0.8	
Temperature Coefficient of V <sub>O</sub>	ΔV <sub>O</sub> /ΔT	I <sub>O</sub> = 5mA		-0.4		mV/°C
Output Noise Voltage	V <sub>N</sub>	f = 10Hz to 100KHz T <sub>A</sub> = +25°C		40		μV
Ripple Rejection	RR	f = 120Hz, I <sub>O</sub> = -35V ΔV <sub>I</sub> = 10V	54	60		dB
Dropout Voltage	V <sub>D</sub>	T <sub>J</sub> = +25°C I <sub>O</sub> = 1A		2		V
Short Circuit Current	I <sub>SC</sub>	T <sub>J</sub> = +25°C, V <sub>I</sub> = -35V		300		mA
Peak Current	I <sub>PK</sub>	T <sub>J</sub> = +25°C		2.2		A

\* Load and line regulation are specified at constant junction temperature. Changes in V<sub>O</sub> due to heating effects must be taken into account separately. Pulse testing with low duty is used.

**LM7912A ELECTRICAL CHARACTERISTICS**(V<sub>I</sub> = 18V, I<sub>O</sub> = 500mA, 0°C ≤ T<sub>J</sub> ≤ +125°C, C<sub>I</sub> = 2.2μF, C<sub>O</sub> = 1μF, unless otherwise specified.)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	V <sub>O</sub>	T <sub>J</sub> = +25°C	-11.75	-12	-12.25	V
		I <sub>O</sub> = 5mA to 1A, P <sub>O</sub> = 15W V <sub>I</sub> = -15.5 to -27V	-11.5	-12	-12.5	
Line Regulation	ΔV <sub>O</sub>	T <sub>J</sub> = +25°C		12	240	mV
		V <sub>I</sub> = -14.5 to -30V V <sub>I</sub> = -16 to -22V		6	120	
Load Regulation	ΔV <sub>O</sub>	T <sub>J</sub> = +25°C I <sub>O</sub> = 5mA to 1.5A		12	240	mV
		T <sub>J</sub> = +25°C I <sub>O</sub> = 250 to 750mA		4	120	
Quiescent Current	I <sub>Q</sub>	T <sub>J</sub> = +25°C		3	6	mA
Quiescent Current Change	ΔI <sub>Q</sub>	I <sub>O</sub> = 5mA to 1A		0.05	0.5	mA
		V <sub>I</sub> = -15 to -30V		0.1	1	
Temperature Coefficient of V <sub>D</sub>	ΔV <sub>O</sub> /ΔT	I <sub>O</sub> = 5mA		-0.8		mV/°C
Output Noise Voltage	V <sub>N</sub>	f = 10Hz to 100KHz T <sub>A</sub> = +25°C		200		μV
Ripple Rejection	RR	f = 120Hz ΔV <sub>I</sub> = 10V	54	60		dB
Dropout Voltage	V <sub>D</sub>	T <sub>J</sub> = +25°C I <sub>O</sub> = 1A		2		V
Short Circuit Current	I <sub>SC</sub>	T <sub>J</sub> = +25°C, V <sub>I</sub> = -35V		300		mA
Peak Current	I <sub>PK</sub>	T <sub>J</sub> = +25°C		2.2		A

\* Load and line regulation are specified at constant junction temperature. Changes in V<sub>O</sub> due to heating effects must be taken into account separately. Pulse testing with low duty is used.

**LM7915A ELECTRICAL CHARACTERISTICS**(V<sub>I</sub> = 23V, I<sub>O</sub> = 500mA, 0°C ≤ T<sub>J</sub> ≤ +125°C, C<sub>I</sub> = 2.2μF, C<sub>O</sub> = 1μF, unless otherwise specified.)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	V <sub>O</sub>	T <sub>J</sub> = +25°C	-14.7	-15	-15.3	V
		I <sub>O</sub> = 5mA to 1A, P <sub>O</sub> 15W V <sub>I</sub> = -18 to -30V	-14.4	-15	-15.6	
Line Regulation	ΔV <sub>O</sub>	T <sub>J</sub> = +25°C	V <sub>I</sub> = -17.5 to -30V	12	300	mV
			V <sub>I</sub> = -20 to -26V	6	150	
Load Regulation	ΔV <sub>O</sub>	T <sub>J</sub> = +25°C I <sub>O</sub> = 5mA to 1.5A		12	300	mV
		T <sub>J</sub> = +25°C I <sub>O</sub> = 250 to 750mA		4	150	
Quiescent Current	I <sub>O</sub>	T <sub>J</sub> = +25°C		3	6	mA
Quiescent Current Change	ΔI <sub>O</sub>	I <sub>O</sub> = 5mA to 1A		0.05	0.5	mA
		V <sub>I</sub> = -18.5 to -30V		0.1	1	
Temperature Coefficient of V <sub>D</sub>	ΔV <sub>O</sub> /ΔT	I <sub>O</sub> = 5mA		-0.9		mV/°C
Output Noise Voltage	V <sub>N</sub>	f = 10Hz to 100KHz T <sub>A</sub> = +25°C		250		μV
Ripple Rejection	RR	f = 120Hz ΔV <sub>I</sub> = 10V	54	60		dB
Dropout Voltage	V <sub>D</sub>	T <sub>J</sub> = +25°C I <sub>O</sub> = 1A		2		V
Short Circuit Current	I <sub>SC</sub>	T <sub>J</sub> = +25°C, V <sub>I</sub> = -35V		300		mA
Peak Current	I <sub>PK</sub>	T <sub>J</sub> = +25°C		2.2		A

\* Load and line regulation are specified at constant junction temperature. Changes in V<sub>O</sub> due to heating effects must be taken into account separately. Pulse testing with low duty is used.

TYPICAL PERFORMANCE CHARACTERISTICS

Fig.1 Output Voltage

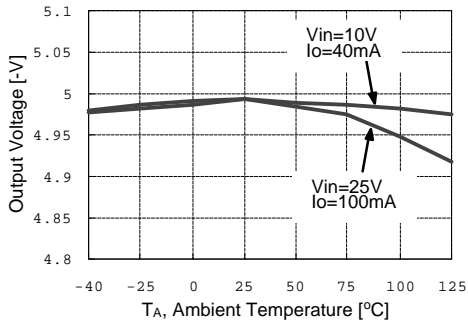


Fig. 2 Load Regulation

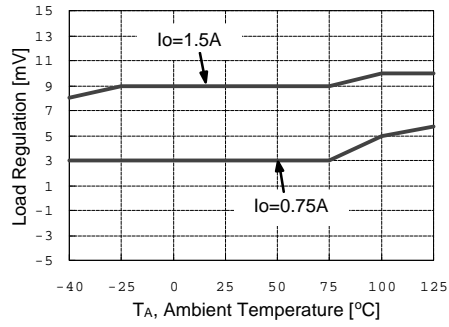


Fig.3 Quiescent Current

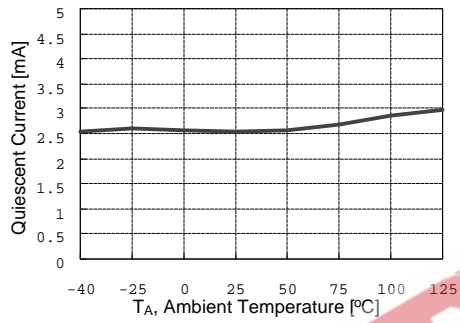


Fig. 4 Dropout Voltage

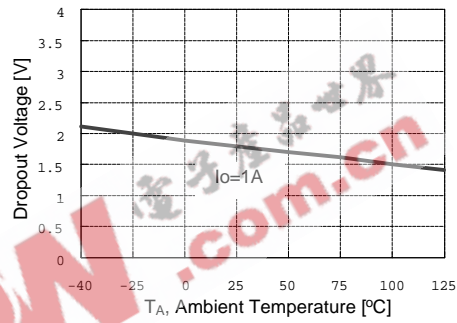
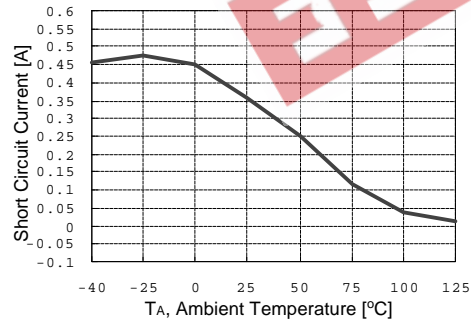
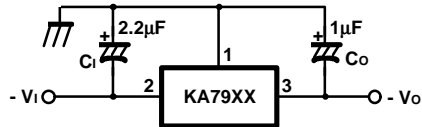


Fig.5 Short Circuit Current



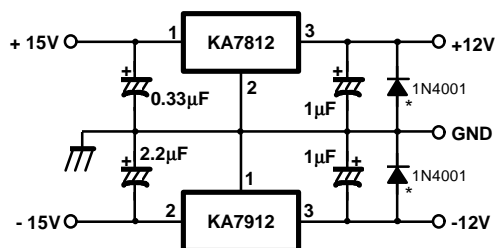
## TYPICAL APPLICATIONS

Fig. 6 Negative Fixed output regulator



## Notes:

- (1) To specify an output voltage, substitute voltage value for "XX"
- (2) Required for stability. For value given, capacitor must be solid tantalum. If aluminum electronics are used, at least ten times value shown should be selected.  $C_i$  is required if regulator is located an appreciable distance from power supply filter.
- (3) To improve transient response. If large capacitors are used, a high current diode from input to output (1N4001 or similar) should be introduced to protect the device from momentary input short circuit.

Fig. 7 Split power supply ( $\pm 12V/1A$ )

\*: Against potential latch-up problems.

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E <sup>2</sup> CMOS™	PowerTrench®	
FACT™	QFET™	
FACT Quiet Series™	QST™	
FAST®	Quiet Series™	
FAST <sub>r</sub> ™	SuperSOT™-3	
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