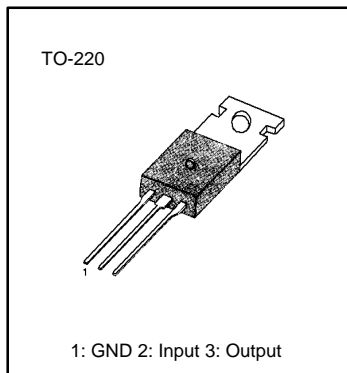


# LM79XX/A (KA79XX, MC79XX) FIXED VOLTAGE REGULATOR (NEGATIVE)

## 3-TERMINAL 1A NEGATIVE VOLTAGE REGULATORS

The LM79XX 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.



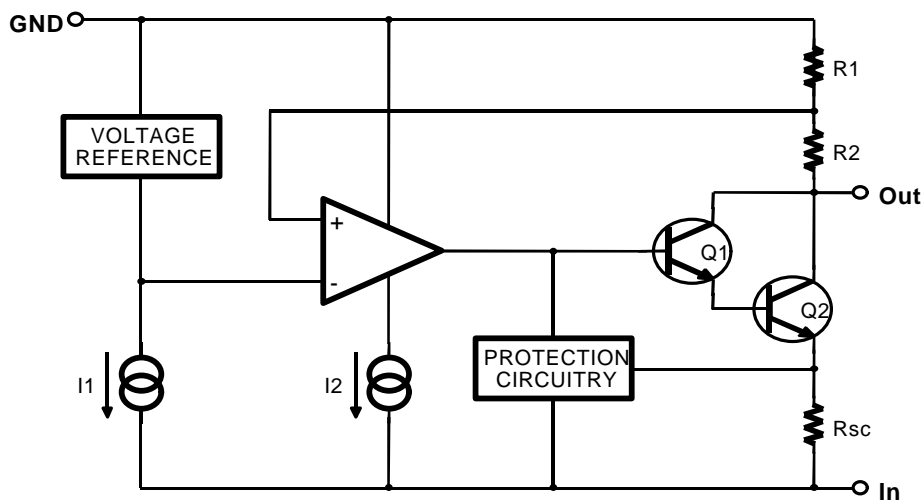
## FEATURES

- 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
LM79XXCT	± 4%	TO-220	0 ~ +125 °C
LM79XXAT	± 2%		

## BLOCK DIAGRAM



## LM79XX/A (KA79XX, MC79XX) FIXED VOLTAGE REGULATOR (NEGATIVE)

### ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub>=+25°C, unless otherwise specified)

Characteristic	Symbol	Value	Unit
Input Voltage	V <sub>I</sub>	-35	V
Thermal Resistance Junction-Cases	R <sub>θJC</sub>	5	°C / W
Junction-Air	R <sub>θJA</sub>	65	°C / W
Operating Temperature Range	T <sub>OPR</sub>	0 ~ +125	°C
Storage Temperature Range	T <sub>STG</sub>	- 65 ~ +150	°C

### LM7905 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	- 4.8	- 5.0	- 5.2	V
		I <sub>O</sub> = 5mA to 1A, P <sub>O</sub> = 15W V <sub>I</sub> = -7 to -20V	- 4.75	- 5.0	- 5.25	
Line Regulation	ΔV <sub>O</sub>	T <sub>J</sub> = 25°C		5	50	mV
		V <sub>I</sub> = -7 to -20V I <sub>O</sub> = 1A		2	25	
		V <sub>I</sub> = -8 to -12V I <sub>O</sub> = 1A		7	50	
		V <sub>I</sub> = -7.5 to -25V		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.

## LM79XX/A (KA79XX, MC79XX) FIXED VOLTAGE REGULATOR (NEGATIVE)

### LM7906 ELECTRICAL CHARACTERISTICS

( $V_I = 11V$ ,  $I_O = 500mA$ ,  $0^\circ C \leq T_J \leq +125^\circ C$ ,  $C_I = 2.2\mu F$ ,  $C_O = 1\mu F$ , unless otherwise specified.)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	$V_O$	$T_J = +25^\circ C$	- 5.75	- 6	- 6.25	V
		$I_O = 5mA$ to 1A, $P_O = 15W$ $V_I = -9$ to - 21V	- 5.7	- 6	- 6.3	
Line Regulation	$\Delta V_O$	$T_J = 25^\circ C$	$V_I = -8$ to - 25V	10	120	mV
			$V_I = -9$ to -12V	5	60	
Load Regulation	$\Delta V_O$	$T_J = +25^\circ C$ $I_O = 5mA$ to 1.5A		10	120	mV
		$T_J = +25^\circ C$ $I_O = 250$ to 750mA		3	60	
Quiescent Current	$I_Q$	$T_J = +25^\circ C$		3	6	mA
Quiescent Current Change	$\Delta I_Q$	$I_O = 5mA$ to 1A			0.5	mA
		$V_I = -9$ to -25V			1.3	
Temperature Coefficient of $V_O$	$\Delta V_O/\Delta T$	$I_O = 5mA$		-0.5		mV/ $^\circ C$
Output Noise Voltage	$V_N$	$f = 10Hz$ to 100KHz $T_A = +25^\circ C$		130		$\mu V$
Ripple Rejection	RR	$f = 120Hz$ $\Delta V_I = 10V$	54	60		dB
Dropout Voltage	$V_D$	$T_J = +25^\circ C$ $I_O = 1A$		2		V
Short Circuit Current	$I_{SC}$	$T_J = +25^\circ C$ , $V_I = -35V$		300		mA
Peak Current	$I_{PK}$	$T_J = +25^\circ C$		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.

## LM79XX/A (KA79XX, MC79XX) FIXED VOLTAGE REGULATOR (NEGATIVE)

### LM7908 ELECTRICAL CHARACTERISTICS

( $V_I = 14V$ ,  $I_O = 500mA$ ,  $0^\circ C \leq T_J \leq +125^\circ C$ ,  $C_I = 2.2\mu F$ ,  $C_O = 1\mu F$ , unless otherwise specified.)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit	
Output Voltage	$V_O$	$T_J = +25^\circ C$	- 7.7	- 8	- 8.3	V	
		$I_O = 5mA$ to 1A, $P_O = 15W$ $V_I = -1.5$ to -23V	- 7.6	- 8	- 8.4		
Line Regulation	$\Delta V_O$	$T_J = 25^\circ C$	$V_I = -10.5$ to -25V		10	100	mV
			$V_I = -11$ to -17V		5	80	
Load Regulation	$\Delta V_O$	$T_J = +25^\circ C$	$I_O = 5mA$ to 1.5A		12	160	mV
			$I_O = 250$ to 750mA		4	80	
Quiescent Current	$I_Q$	$T_J = +25^\circ C$		3	6	mA	
Quiescent Current Change	$\Delta I_Q$	$I_O = 5mA$ to 1A $V_I = -11.5$ to -25V		0.05	0.5	mA	
					0.1		1
Temperature Coefficient of $V_O$	$\Delta V_O/\Delta T$	$I_O = 5mA$		-0.6		mV/ $^\circ C$	
Output Noise Voltage	$V_N$	$f = 10Hz$ to 100KHz $T_A = +25^\circ C$		175		$\mu V$	
Ripple Rejection	RR	$f = 120Hz$ $\Delta V_I = 10V$	54	60		dB	
Dropout Voltage	$V_D$	$T_J = +25^\circ C$ $I_O = 1A$		2		V	
Short Circuit Current	$I_{SC}$	$T_J = +25^\circ C$ , $V_I = -35V$		300		mA	
Peak Current	$I_{PK}$	$T_J = +25^\circ C$		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.

## LM79XX/A (KA79XX, MC79XX) FIXED VOLTAGE REGULATOR (NEGATIVE)

### LM7909 ELECTRICAL CHARACTERISTICS

( $V_I = 14V$ ,  $I_O = 500mA$ ,  $0^\circ C \leq T_J \leq +125^\circ C$ ,  $C_I = 2.2\mu F$ ,  $C_O = 1\mu F$ , unless otherwise specified)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	$V_O$	$T_J = +25^\circ C$	- 8.7	- 9.0	- 9.3	V
		$I_O = 5mA$ to 1A, $P_O = 15W$ $V_I = -1.5$ to -23V	- 8.6	- 9.0	- 9.4	
Line Regulation	$\Delta V_O$	$T_J = 25^\circ C$		10	180	mV
		$V_I = -10.5$ to -25V $V_I = -11$ to -17V		5	90	
Load Regulation	$\Delta V_O$	$T_J = +25^\circ C$ $I_O = 5mA$ to 1.5A		12	180	mV
		$T_J = +25^\circ C$ $I_O = 250$ to 750mA		4	90	
Quiescent Current	$I_Q$	$T_J = +25^\circ C$		3	6	mA
Quiescent Current Change	$\Delta I_Q$	$I_O = 5mA$ to 1A		0.05	0.5	mA
		$V_I = -11.5$ to -25V		0.1	1	
Temperature Coefficient of $V_O$	$\Delta V_O/\Delta T$	$I_O = 5mA$		-0.6		mV/ $^\circ C$
Output Noise Voltage	$V_N$	$f = 10Hz$ to 100KHz $T_A = +25^\circ C$		175		$\mu V$
Ripple Rejection	RR	$f = 120Hz$ $\Delta V_I = 10V$	54	60		dB
Dropout Voltage	$V_D$	$T_J = +25^\circ C$ $I_O = 1A$		2		V
Short Circuit Current	$I_{SC}$	$T_J = +25^\circ C$ , $V_I = -35V$		300		mA
Peak Current	$I_{PK}$	$T_J = +25^\circ C$		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.

## LM79XX/A (KA79XX, MC79XX) FIXED VOLTAGE REGULATOR (NEGATIVE)

### LM7912 ELECTRICAL CHARACTERISTICS

( $V_I = 18V$ ,  $I_O = 500mA$ ,  $0^\circ C \leq T_J \leq +125^\circ C$ ,  $C_I = 2.2\mu F$ ,  $C_O = 1\mu F$ , unless otherwise specified.)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit	
Output Voltage	$V_O$	$T_J = +25^\circ C$	-11.5	-12	-12.5	V	
		$I_O = 5mA$ to $1A$ , $P_O = 15W$ $V_I = -15.5$ to $-27V$	-11.4	-12	-12.6		
Line Regulation	$\Delta V_O$	$T_J = 25^\circ C$	$V_I = -14.5$ to $-30V$		12	240	mV
			$V_I = -16$ to $-22V$		6	120	
Load Regulation	$\Delta V_O$	$T_J = +25^\circ C$ $I_O = 5mA$ to $1.5A$		12	240	mV	
		$T_J = +25^\circ C$ $I_O = 250$ to $750mA$		4	120		
Quiescent Current	$I_Q$	$T_J = +25^\circ C$		3	6	mA	
Quiescent Current Change	$\Delta I_Q$	$I_O = 5mA$ to $1A$		0.05	0.5	mA	
		$V_I = -15$ to $-30V$		0.1	1		
Temperature Coefficient of $V_O$	$\Delta V_O/\Delta T$	$I_O = 5mA$		-0.8		mV/ $^\circ C$	
Output Noise Voltage	$V_N$	$f = 10Hz$ to $100KHz$ $T_A = +25^\circ C$		200		$\mu V$	
Ripple Rejection	RR	$f = 120Hz$ $\Delta V_I = 10V$	54	60		dB	
Dropout Voltage	$V_D$	$T_J = +25^\circ C$ $I_O = 1A$		2		V	
Short Circuit Current	$I_{SC}$	$T_J = +25^\circ C$ , $V_I = -35V$		300		mA	
Peak Current	$I_{PK}$	$T_J = +25^\circ C$		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.

## LM79XX/A (KA79XX, MC79XX) FIXED VOLTAGE REGULATOR (NEGATIVE)

### LM7915 ELECTRICAL CHARACTERISTICS

( $V_I = 23V$ ,  $I_O = 500mA$ ,  $0^\circ C \leq T_J \leq +125^\circ C$ ,  $C_I = 2.2\mu F$ ,  $C_O = 1\mu F$ , unless otherwise specified.)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	$V_O$	$T_J = +25^\circ C$	-14.4	-15	-15.6	V
		$I_O = 5mA$ to $1A$ , $P_O = 15W$ $V_I = -18$ to $-30V$	-14.25	-15	-15.75	
Line Regulation	$\Delta V_O$	$T_J = 25^\circ C$	$V_I = -17.5$ to $-30V$	12	300	mV
			$V_I = -20$ to $-26V$	6	150	
Load Regulation	$\Delta V_O$	$T_J = +25^\circ C$ $I_O = 5mA$ to $1.5A$		12	300	mV
		$T_J = +25^\circ C$ $I_O = 250$ to $750mA$		4	150	
Quiescent Current	$I_Q$	$T_J = +25^\circ C$		3	6	mA
Quiescent Current Change	$\Delta I_Q$	$I_O = 5mA$ to $1A$		0.05	0.5	mA
		$V_I = -18.5$ to $-30V$		0.1	1	
Temperature Coefficient of $V_O$	$\Delta V_O/\Delta T$	$I_O = 5mA$		-0.9		mV/ $^\circ C$
Output Noise Voltage	$V_N$	$f = 10Hz$ to $100KHz$ $T_A = +25^\circ C$		250		$\mu V$
Ripple Rejection	RR	$f = 120Hz$ $\Delta V_I = 10V$	54	60		dB
Dropout Voltage	$V_D$	$T_J = +25^\circ C$ $I_O = 1A$		2		V
Short Circuit Current	$I_{SC}$	$T_J = +25^\circ C$ , $V_I = -35V$		300		mA
Peak Current	$I_{PK}$	$T_J = +25^\circ C$		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.

## LM79XX/A (KA79XX, MC79XX) FIXED VOLTAGE REGULATOR (NEGATIVE)

### LM7918 ELECTRICAL CHARACTERISTICS

( $V_I = 27V$ ,  $I_O = 500mA$ ,  $0^\circ C \leq T_J \leq +125^\circ C$ ,  $C_I = 2.2\mu F$ ,  $C_O = 1\mu F$ , unless otherwise specified.)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	$V_O$	$T_J = +25^\circ C$	-17.3	-18	-18.7	V
		$I_O = 5mA$ to 1A, $P_O = 15W$ $V_I = -22.5$ to $-33V$	-17.1	-18	-18.9	
Line Regulation	$\Delta V_O$	$T_J = 25^\circ C$	$V_I = -21$ to $-33V$	15	360	mV
			$V_I = -24$ to $-30V$	8	180	
Load Regulation	$\Delta V_O$	$T_J = +25^\circ C$ $I_O = 5mA$ to 1.5A		15	360	mV
		$T_J = +25^\circ C$ $I_O = 250$ to 750mA		5	180	
Quiescent Current	$I_Q$	$T_J = +25^\circ C$		3	6	mA
Quiescent Current Change	$\Delta I_Q$	$I_O = 5mA$ to 1A			0.5	mA
		$V_I = -22$ to $-33V$			1	
Temperature Coefficient of $V_O$	$\Delta V_O/\Delta T$	$I_O = 5mA$		-1		mV/ $^\circ C$
Output Noise Voltage	$V_N$	$f = 10Hz$ to 100KHz $T_A = +25^\circ C$		300		$\mu V$
Ripple Rejection	RR	$f = 120Hz$ $\Delta V_I = 10V$	54	60		dB
Dropout Voltage	$V_D$	$T_J = +25^\circ C$ $I_O = 1A$		2		V
Short Circuit Current	$I_{SC}$	$T_J = +25^\circ C$ , $V_I = -35V$		300		mA
Peak Current	$I_{PK}$	$T_J = +25^\circ C$		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.



## LM79XX/A (KA79XX, MC79XX) FIXED VOLTAGE REGULATOR (NEGATIVE)

### LM7924 ELECTRICAL CHARACTERISTICS

( $V_I = 33V$ ,  $I_O = 500mA$ ,  $0^\circ C \leq T_J \leq +125^\circ C$ ,  $C_I = 2.2\mu F$ ,  $C_O = 1\mu F$ , unless otherwise specified.)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit	
Output Voltage	$V_O$	$T_J = +25^\circ C$	- 23	- 24	- 25	V	
		$I_O = 5mA$ to 1A, $P_O \leq 15W$ $V_I = -27$ to $-38V$	- 22.8	- 24	- 25.2		
Line Regulation	$\Delta V_O$	$T_J = 25^\circ C$	$V_I = - 27$ to $- 38V$		15	480	mV
			$V_I = - 30$ to $- 36V$		8	180	
Load Regulation	$\Delta V_O$	$T_J = +25^\circ C$ $I_O = 5mA$ to 1.5A		15	480	mV	
			$T_J = +25^\circ C$ $I_O = 250$ to 750mA		5		240
Quiescent Current	$I_Q$	$T_J = +25^\circ C$		3	6	mA	
Quiescent Current Change	$\Delta I_Q$	$I_O = 5mA$ to 1A $V_I = -27$ to $-38V$			0.5	mA	
					1		
Temperature Coefficient of $V_O$	$\Delta V_O / \Delta T$	$I_O = 5mA$		-1		mV/ $^\circ C$	
Output Noise Voltage	$V_N$	$f = 10Hz$ to 100KHz $T_A = +25^\circ C$		400		$\mu V$	
Ripple Rejection	RR	$f = 120Hz$ $\Delta V_I = 10V$	54	60		dB	
Dropout Voltage	$V_D$	$T_J = +25^\circ C$ $I_O = 1A$		2		V	
Short Circuit Current	$I_{SC}$	$T_J = +25^\circ C$ , $V_I = -35V$		300		mA	
Peak Current	$I_{PK}$	$T_J = +25^\circ C$		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.

## LM79XX/A (KA79XX, MC79XX) FIXED VOLTAGE REGULATOR (NEGATIVE)

### LM7905A ELECTRICAL CHARACTERISTICS

( $V_I = 10V$ ,  $I_O = 500mA$ ,  $0^\circ C \leq T_J \leq +125^\circ C$ ,  $C_I = 2.2\mu F$ ,  $C_O = 1\mu F$ , unless otherwise specified.)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	$V_O$	$T_J = +25^\circ C$	- 4.9	- 5.0	- 5.1	V
		$I_O = 5mA$ to 1A, $P_O = 15W$ $V_I = -7$ to -20V	- 4.8	-5.0	- 5.2	
Line Regulation	$\Delta V_O$	$T_J = +25^\circ C$ $V_I = -7$ to -20V $I_O = 1A$		5	50	mV
		$V_I = -8$ to -12V $I_O = 1A$		2	25	
		$V_I = -7.5$ to -25V		7	50	
		$V_I = -8$ to -12V $I_O = 1A$		7	50	
Load Regulation	$\Delta V_O$	$I_O = 5mA$ to 1.5A		10	100	mV
		$T_J = +25^\circ C$ $I_O = 250$ to 750mA		3	50	
Quiescent Current	$I_Q$	$T_J = +25^\circ C$		3	6	mA
Quiescent Current Change	$\Delta I_Q$	$I_O = 5mA$ to 1A		0.05	0.5	mA
		$V_I = -8$ to -25V		0.1	0.8	
Temperature Coefficient of $V_D$	$\Delta V_O / \Delta T$	$I_O = 5mA$		- 0.4		mV/ $^\circ C$
Output Noise Voltage	$V_N$	$f = 10Hz$ to 100KHz $T_A = +25^\circ C$		40		$\mu V$
Ripple Rejection	RR	$f = 120Hz$ , $I_O = -35V$ $\Delta V_I = 10V$	54	60		dB
Dropout Voltage	$V_D$	$T_J = +25^\circ C$ $I_O = 1A$		2		V
Short Circuit Current	$I_{SC}$	$T_J = +25^\circ C$ , $V_I = -35V$		300		mA
Peak Current	$I_{PK}$	$T_J = +25^\circ C$		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.

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LM7912A ELECTRICAL CHARACTERISTICS

## LM79XX/A (KA79XX, MC79XX) FIXED VOLTAGE REGULATOR (NEGATIVE)

( $V_I = 18V$ ,  $I_O = 500mA$ ,  $0^\circ C \leq T_J \leq +125^\circ C$ ,  $C_I = 2.2\mu F$ ,  $C_O = 1\mu F$ , unless otherwise specified.)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	$V_O$	$T_J = +25^\circ C$	-11.75	-12	-12.25	V
		$I_O = 5mA$ to 1A, $P_O = 15W$ $V_I = -15.5$ to $-27V$	-11.5	-12	-12.5	
Line Regulation	$\Delta V_O$	$T_J = +25^\circ C$		12	240	mV
		$V_I = -14.5$ to $-30V$ $V_I = -16$ to $-22V$		6	120	
Load Regulation	$\Delta V_O$	$T_J = +25^\circ C$ $I_O = 5mA$ to 1.5A		12	240	mV
		$T_J = +25^\circ C$ $I_O = 250$ to 750mA		4	120	
Quiescent Current	$I_Q$	$T_J = +25^\circ C$		3	6	mA
Quiescent Current Change	$\Delta I_Q$	$I_O = 5mA$ to 1A		0.05	0.5	mA
		$V_I = -15$ to $-30V$		0.1	1	
Temperature Coefficient of $V_O$	$\Delta V_O/\Delta T$	$I_O = 5mA$		-0.8		mV/ $^\circ C$
Output Noise Voltage	$V_N$	$f = 10Hz$ to 100Khz $T_A = +25^\circ C$		200		$\mu V$
Ripple Rejection	RR	$f = 120Hz$ $\Delta V_I = 10V$	54	60		dB
Dropout Voltage	$V_D$	$T_J = +25^\circ C$ $I_O = 1A$		2		V
Short Circuit Current	$I_{SC}$	$T_J = +25^\circ C$ , $V_I = -35V$		300		mA
Peak Current	$I_{PK}$	$T_J = +25^\circ C$		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.

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## LM79XX/A (KA79XX, MC79XX) FIXED VOLTAGE REGULATOR (NEGATIVE)

( $V_I = 23V$ ,  $I_O = 500mA$ ,  $0^\circ C \leq T_J \leq +125^\circ C$ ,  $C_1 = 2.2\mu F$ ,  $C_O = 1\mu F$ , unless otherwise specified.)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	$V_O$	$T_J = +25^\circ C$	-14.7	-15	-15.3	V
		$I_O = 5mA$ to 1A, $P_O = 15W$ $V_I = -18$ to -30V	-14.4	-15	-15.6	
Line Regulation	$\Delta V_O$	$T_J = +25^\circ C$	$V_I = -17.5$ to -30V	12	300	mV
			$V_I = -20$ to -26V	6	150	
Load Regulation	$\Delta V_O$	$T_J = +25^\circ C$ $I_O = 5mA$ to 1.5A		12	300	mV
			$T_J = +25^\circ C$ $I_O = 250$ to 750mA		4	
Quiescent Current	$I_Q$	$T_J = +25^\circ C$		3	6	mA
Quiescent Current Change	$\Delta I_Q$	$I_O = 5mA$ to 1A		0.05	0.5	mA
		$V_I = -18.5$ to -30V		0.1	1	
Temperature Coefficient of $V_O$	$\Delta V_O / \Delta T$	$I_O = 5mA$		-0.9		mV/ $^\circ C$
Output Noise Voltage	$V_N$	$f = 10Hz$ to 100KHz $T_A = +25^\circ C$		250		$\mu V$
Ripple Rejection	RR	$f = 120Hz$ $\Delta V_I = 10V$	54	60		dB
Dropout Voltage	$V_D$	$T_J = +25^\circ C$ $I_O = 1A$		2		V
Short Circuit Current	$I_{SC}$	$T_J = +25^\circ C$ , $V_I = -35V$		300		mA
Peak Current	$I_{PK}$	$T_J = +25^\circ C$		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.

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TYPICAL PERFORMANCE CHARACTERISTICS

# LM79XX/A (KA79XX, MC79XX) FIXED VOLTAGE REGULATOR (NEGATIVE)

Fig.1 Output Voltage

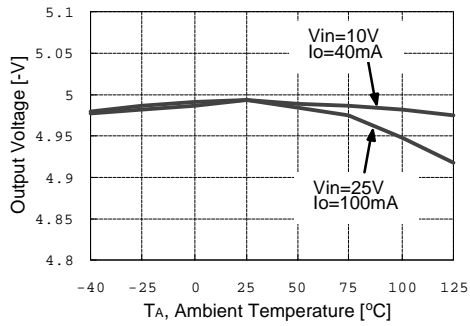


Fig. 2 Load Regulation

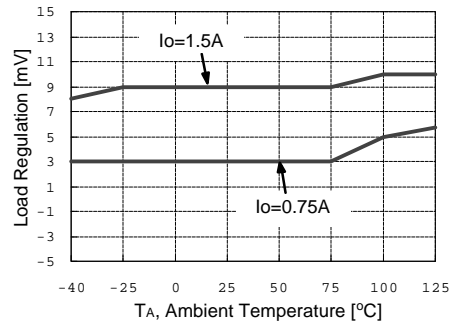


Fig.3 Quiescent Current

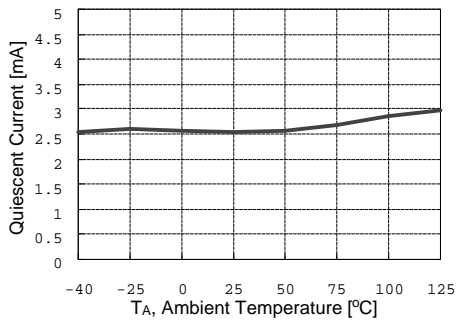


Fig. 4 Dropout Voltage

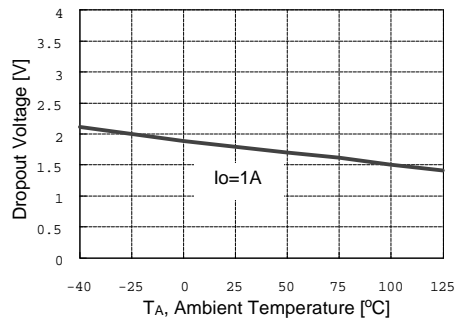
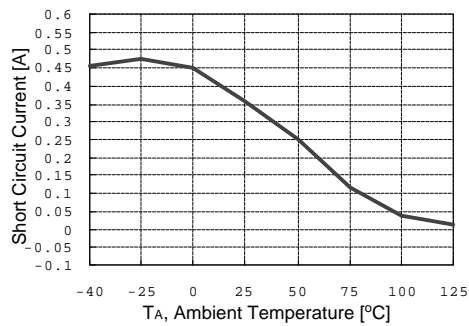
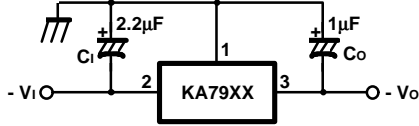


Fig.5 Short Circuit Current



# LM79XX/A (KA79XX, MC79XX) FIXED VOLTAGE REGULATOR (NEGATIVE)

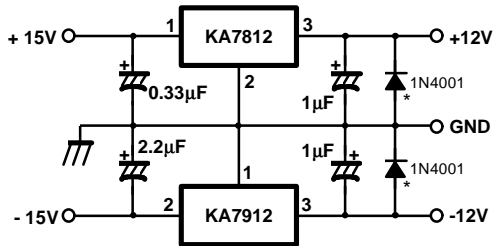
Fig. 6 Negative Fixed output regulator



**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 electrolytics are used, at least ten times value shown should be selected. C<sub>1</sub> 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 (±12V/1A)



\*: Against potential latch-up problems.

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