

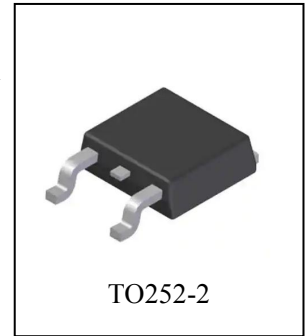
79MXX

3-Terminal Negative Voltage Regulator

General Description

The 79MXX(79M05/79M06/79M08/79M09/79M12/79M15/79M18/79M24) family is monolithic fixed voltage regulator integrated circuit. It is suitable for applications requiring supply current up to 0.5A.

The 79MXX series is available in TO252-2 package.



Features

- Internal Short Circuit Current Limit
- Internal Thermal Overload Protection
- Excellent Ripple Rejection
- Guarantee'd 500mA Output Current
- Output Capacitor recommended electrolytic capacitor
- Bipolar Technology

Package Information

Part NO.	Package Description	Package Marking	Package Option
79MXX	TO252-2	CHMC 79MXX SXXXX	70/Tube 2500/Reel

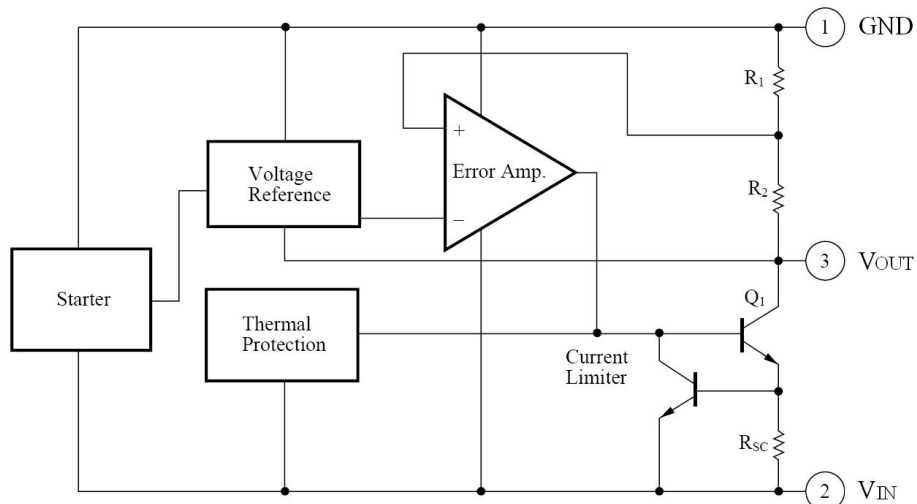
CHMC:Trademark

SXXXX:Lot NO.

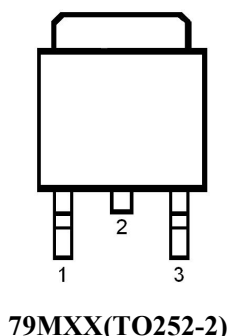
79MXX:Part NO. (XX: Voltage)

XX(Output Voltage): 05(-5.0V)/06(-6.0V)/08(-8.0V)/09(-9.0V)/12(-12V)/15(-15V)/18(-18V)/24(-24V)

Functional Block Diagram



Pin Configuration



Pin Description

Pin Number	Pin Name	Function Description
1	GND	Ground
2	V _{IN}	Negative Input pin
3	V _{OUT}	Negative Output pin

Absolute Maximum Ratings (Operating temperature range applies, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Input Voltage	V _{IN}	-35	V
Power Dissipation	P _D	Internally Limited	
Operating Temperature Range	T _{opr}	-40~+125	°C
Storage Temperature Range	T _{stg}	-55~+150	°C

*1. Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

Electrical Characteristics

For 79M05(unless otherwise noted, V_i=10V, I_o=350mA, C_{IN}=2.2μF, C_o=1.0μF)

Parameter	Test conditions	Symbol	Min	Typ	Max	Unit
Output Voltage		V _{OUT}	-4.80	-5.00	-5.20	V
	-7V≤V _{IN} ≤-25V I _o =5mA~350mA		-4.75	-5.00	-5.25	
Load Regulation	I _o =5mA~500mA	ΔV _{OUT}		35	100	mV
Line Regulation	-7V≤V _{IN} ≤-25V	ΔV _{OUT}		5	50	mV
Quiescent Current		I _Q		2.2	5.0	mA
Output Noise Voltage	f=10Hz, 100kHz	V _N		100		μV
Temperature Coefficient of V _{OUT}	I _o =5mA, T _j =0 to 125°C	ΔV _o /ΔT		-0.4		mV/°C
Ripple Rejection	e _{in} =2V _{P-P} , f=120Hz	RR	50	58		dB

For 79M06(unless otherwise noted, $V_i=11V, I_o=350mA, C_{IN}=2.2\mu F, C_o=1.0\mu F$)

Parameter	Test conditions	Symbol	Min	Typ	Max	Unit
Output Voltage		V_{OUT}	-5.75	-6.00	-6.25	V
	$-8V \leq V_{IN} \leq -25V$ $I_o=5mA \sim 350mA$		-5.70	-6.00	-6.30	
Load Regulation	$I_o=5mA \sim 500mA$	ΔV_{OUT}		35	100	mV
Line Regulation	$-8V \leq V_{IN} \leq -25V$	ΔV_{OUT}		5	60	mV
Quiescent Current		I_Q		2.2	5.0	mA
Output Noise Voltage	$f=10Hz, 100kHz$	V_N		110		μV
Temperature Coefficient of V_{OUT}	$I_o=5mA, T_j=0$ to $125^\circ C$	$\Delta V_o/\Delta T$		-0.5		mV/ $^\circ C$
Ripple Rejection	$e_{in}=2V_{P-P}, f=120Hz$	RR	50	57		dB

For 79M08(unless otherwise noted, $V_i=14V, I_o=350mA, C_{IN}=2.2\mu F, C_o=1.0\mu F$)

Parameter	Test conditions	Symbol	Min	Typ	Max	Unit
Output Voltage		V_{OUT}	-7.70	-8.00	-8.30	V
	$-10.5V \leq V_{IN} \leq -25V$ $I_o=5mA \sim 350mA$		-7.60	-8.00	-8.40	
Load Regulation	$I_o=5mA \sim 500mA$	ΔV_{OUT}		40	100	mV
Line Regulation	$-10.5V \leq V_{IN} \leq -25V$	ΔV_{OUT}		8	80	mV
Quiescent Current		I_Q		2.2	5.0	mA
Output Noise Voltage	$f=10Hz, 100kHz$	V_N		130		μV
Temperature Coefficient of V_{OUT}	$I_o=5mA, T_j=0$ to $125^\circ C$	$\Delta V_o/\Delta T$		-0.7		mV/ $^\circ C$
Ripple Rejection	$e_{in}=2V_{P-P}, f=120Hz$	RR	50	55		dB

For 79M09(unless otherwise noted, $V_i=15V, I_o=350mA, C_{IN}=2.2\mu F, C_o=1.0\mu F$)

Parameter	Test conditions	Symbol	Min	Typ	Max	Unit
Output Voltage		V_{OUT}	-8.65	-9.00	-9.35	V
	$-11.5V \leq V_{IN} \leq -25V$ $I_o=5mA \sim 350mA$		-8.55	-9.00	-9.45	
Load Regulation	$I_o=5mA \sim 500mA$	ΔV_{OUT}		40	100	mV
Line Regulation	$-11.5V \leq V_{IN} \leq -25V$	ΔV_{OUT}		8	80	mV
Quiescent Current		I_Q		2.0	5.0	mA
Output Noise Voltage	$f=10Hz, 100kHz$	V_N		150		μV
Temperature Coefficient of V_{OUT}	$I_o=5mA, T_j=0$ to $125^\circ C$	$\Delta V_o/\Delta T$		-0.8		mV/ $^\circ C$
Ripple Rejection	$e_{in}=2V_{P-P}, f=120Hz$	RR	50	54		dB

For 79M12(unless otherwise noted, $V_i=19V, I_o=350mA, C_{IN}=2.2\mu F, C_o=1.0\mu F$)

Parameter	Test conditions	Symbol	Min	Typ	Max	Unit
Output Voltage		V_{OUT}	-11.5	-12.0	-12.5	V
	$-14.5V \leq V_{IN} \leq -30V$ $I_o=5mA \sim 350mA$		-11.4	-12.0	-12.6	
Load Regulation	$I_o=5mA \sim 500mA$	ΔV_{OUT}		30	120	mV
Line Regulation	$-14.5V \leq V_{IN} \leq -30V$	ΔV_{OUT}		3	80	mV
Quiescent Current		I_Q		2.7	6.0	mA
Output Noise Voltage	$f=10Hz, 100kHz$	V_N		150		μV
Temperature Coefficient of V_{OUT}	$I_o=5mA, T_j=0$ to $125^\circ C$	$\Delta V_o/\Delta T$		-0.5		mV/ $^\circ C$
Ripple Rejection	$e_{in}=2V_{P-P}, f=120Hz$	RR	54	71		dB

For 79M15(unless otherwise noted, $V_i=23V, I_o=350mA, C_{IN}=2.2\mu F, C_o=1.0\mu F$)

Parameter	Test conditions	Symbol	Min	Typ	Max	Unit
Output Voltage		V_{OUT}	-14.4	-15.0	-15.6	V
	$-17.5V \leq V_{IN} \leq -30V$ $I_o=5mA \sim 350mA$		-14.25	-15.0	-15.75	
Load Regulation	$I_o=5mA \sim 500mA$	ΔV_{OUT}		30	150	mV
Line Regulation	$-17.5V \leq V_{IN} \leq -30V$	ΔV_{OUT}		3	80	mV
Quiescent Current		I_Q		2.7	6.0	mA
Output Noise Voltage	$f=10Hz, 100kHz$	V_N		170		μV
Temperature Coefficient of V_{OUT}	$I_o=5mA, T_j=0$ to $125^\circ C$	$\Delta V_o/\Delta T$		-0.5		mV/ $^\circ C$
Ripple Rejection	$e_{in}=2V_{P-P}, f=120Hz$	RR	54	70		dB

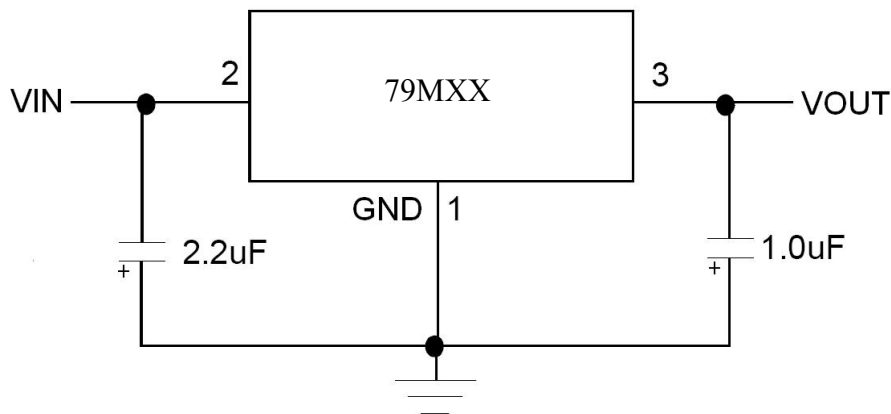
For 79M18(unless otherwise noted, $V_i=27V, I_o=350mA, C_{IN}=2.2\mu F, C_o=1.0\mu F$)

Parameter	Test conditions	Symbol	Min	Typ	Max	Unit
Output Voltage		V_{OUT}	-17.3	-18.0	-18.7	V
	$-21V \leq V_{IN} \leq -33V$ $I_o=5mA \sim 350mA$		-17.1	-18.0	-18.9	
Load Regulation	$I_o=5mA \sim 500mA$	ΔV_{OUT}		40	180	mV
Line Regulation	$-21V \leq V_{IN} \leq -33V$	ΔV_{OUT}		4	80	mV
Quiescent Current		I_Q		2.7	6.0	mA
Output Noise Voltage	$f=10Hz, 100kHz$	V_N		200		μV
Temperature Coefficient of V_{OUT}	$I_o=5mA, T_j=0$ to $125^\circ C$	$\Delta V_o/\Delta T$		-0.6		mV/ $^\circ C$
Ripple Rejection	$e_{in}=2V_{P-P}, f=120Hz$	RR	54	69		dB

For 79M24(unless otherwise noted, $V_i=33V, I_o=350mA, C_{IN}=2.2\mu F, C_o=1.0\mu F$)

Parameter	Test conditions	Symbol	Min	Typ	Max	Unit
Output Voltage		V_{OUT}	-23.0	-24.0	-25.0	V
	$-27V \leq V_{IN} \leq -38V$ $I_o=5mA \sim 350mA$		-22.8	-24.0	-25.2	
Load Regulation	$I_o=5mA \sim 500mA$	ΔV_{OUT}		40	240	mV
Line Regulation	$-27V \leq V_{IN} \leq -38V$	ΔV_{OUT}		5	80	mV
Quiescent Current		I_Q		2.7	6.0	mA
Output Noise Voltage	$f=10Hz, 100kHz$	V_N		300		μV
Temperature Coefficient of V_{OUT}	$I_o=5mA, T_j=0$ to $125^\circ C$	$\Delta V_o/\Delta T$		-0.8		mV/ $^\circ C$
Ripple Rejection	$e_{in}=2V_{P-P}, f=120Hz$	RR	54	66		dB

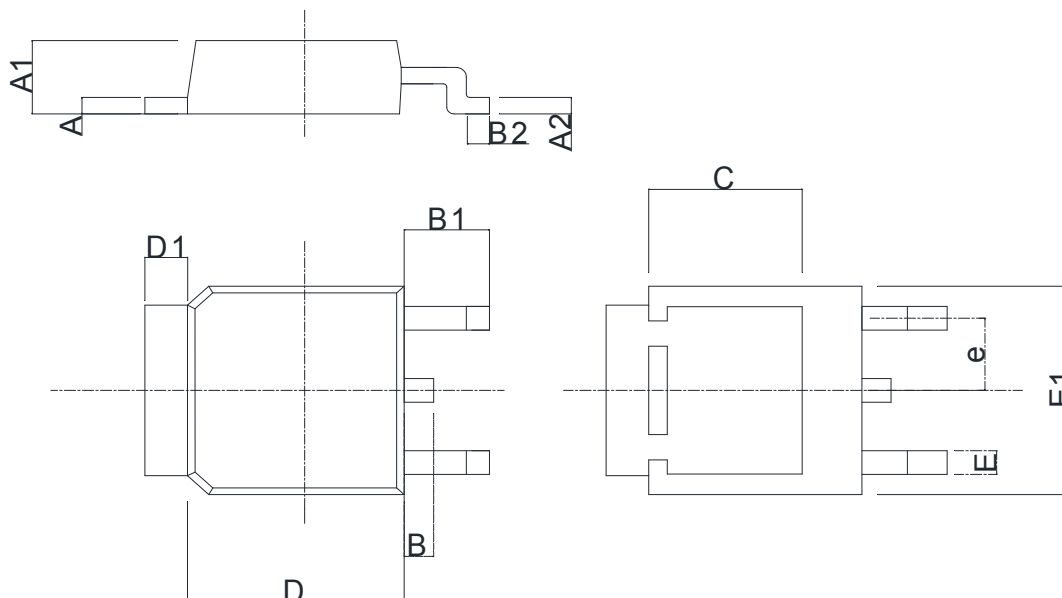
Typical Application



Outline Dimensions

T0252-2

Unit: mm



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.470	0.570	0.018	0.023
A1	2.220	2.380	0.087	0.094
A2	0.470	0.570	0.018	0.023
B	0.820	0.840	0.032	0.033
B1	2.380	2.480	0.093	0.098
B2	0.500	0.520	0.019	0.021
C	4.250	4.450	0.167	0.176
D	6.000	6.200	0.236	0.245
D1	1.150	1.250	0.045	0.050
E	0.650	0.850	0.025	0.034
E1	6.450	6.750	0.253	0.266
e	2.285 (BSC)		0.090 (BSC)	

Statements

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