LM79MXX

3-Terminal 0.5A Negative Voltage Regulator

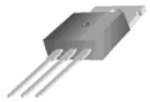
Features

- No External Components Required
- Output Current in Excess of 0.5A
- Internal Thermal Overload
- Internal Short Circuit Current Limiting
- Output Transistor Safe Area Compensation
- Output Voltages of -5V, -6V, -8V, -12V, -15V , -18V and -24V

Description

The LM79MXX series of 3-Terminal medium current negative voltage regulators are monolithic integrated circuits designed as fixed voltage regulators. These regulators employ internal current limiting, thermal shutdown and safe area compensation making them essentially indestructible.

TO-220



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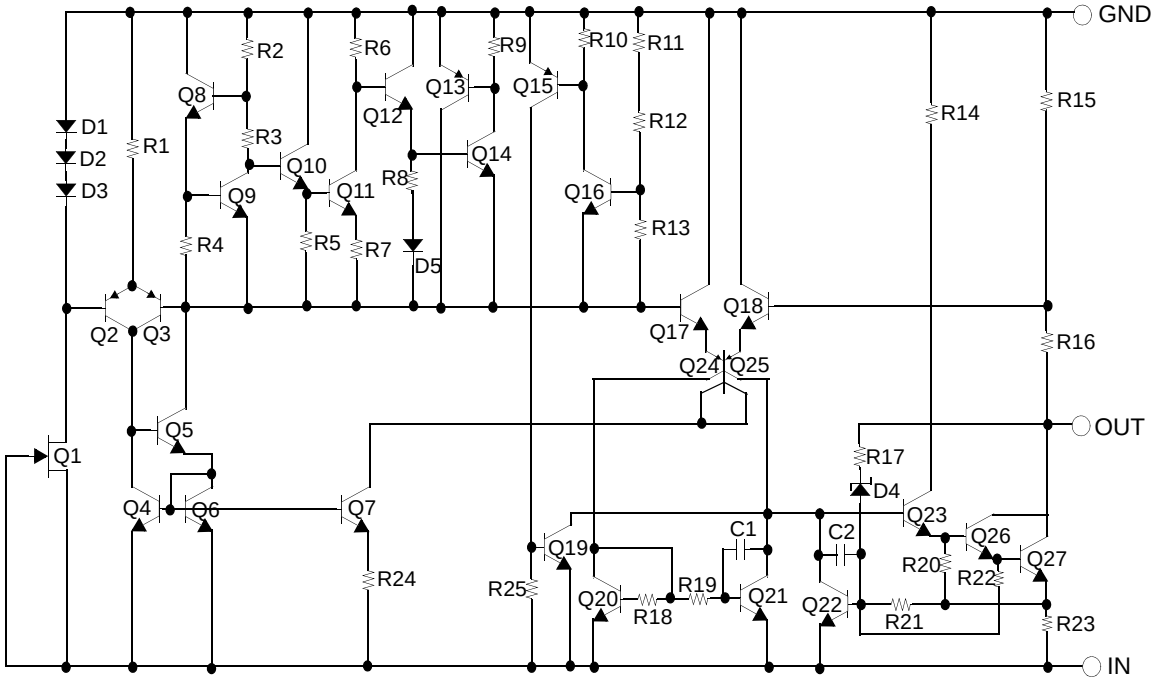
1. GND 2. Input 3. Output

Schematic Diagram



Rev. 1.0.3

Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Input Voltage(for V_O = -5V to -18V) (for V_O = -24V)	V_I V_I	-35 -40	V V
Thermal Resistance Junction-Cases	$R_{\theta JC}$	5	°C/W
Thermal Resistance Junction-Air	$R_{\theta JA}$	65	°C/W
Operating Temperature Range	T_{OPR}	0 ~ +125	°C
Storage Temperature Range	T_{STG}	-65 ~ +150	°C

Electrical Characteristics (LM79M05)

(Refer to test circuit, 0°C ≤T_J ≤ +125°C, I_O =350mA, V_I = -10V,unless otherwise specified, C_I =0.33μF,C_O=0.1μF)

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Unit
Output Voltage	V_O	T_J = +25°C		-4.8	-5	-5.2	V
		I_O = 5mA to 350mA V_I = -7V to -25V		-4.75	-5	-5.25	
Line Regulation (Note1)	ΔV_O	T_J =+25°C	V_I = -7V to -25V	-	7.0	50	mV
			V_I = -8V to -25V	-	2.0	30	
Load Regulation (Note1)	ΔV_O	I_O = 5mA to 500mA T_J = +25°C		-	30	100	mV
Quiescent Current	I_Q	T_J = +25°C		-	3.0	6.0	mA
Quiescent Current Change	ΔI_Q	I_O = 5mA to 350mA		-	-	0.4	mA
		I_O = 200mA V_I = -8V to -25V		-	-	0.4	
Output Voltage Drift	$\Delta Vo/\Delta T$	I_O = 5mA		-	-0.2	-	mV/°C
Output Noise Voltage	V_N	f = 10Hz, 100kHz T_A = +25°C		-	40	-	μV
Ripple Rejection	RR	f = 120Hz V_J = -8 to -18V		54	60	-	dB
Dropout Voltage	V_D	T_J =+25°C, I_O = 500mA		-	1.1	-	V
Short Circuit Current	I_{SC}	T_J = +25°C, V_I = -35V		-	140	-	mA
Peak Current	I_{PK}	T_J = +25°C		-	650	-	mA

Note:

1. Load and line regulation are specified at constant junction temperature. Change in V_O due to heating effects must be taken into account separately. Pulse testing with low duty is used.

Typical Applications

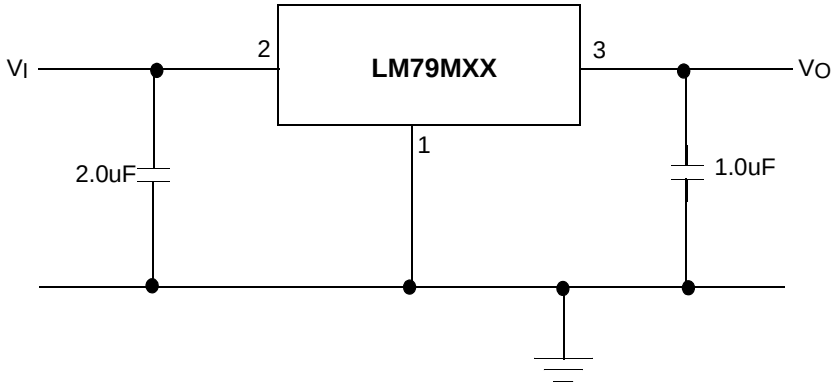


Figure 1. Fixed Output Regulator

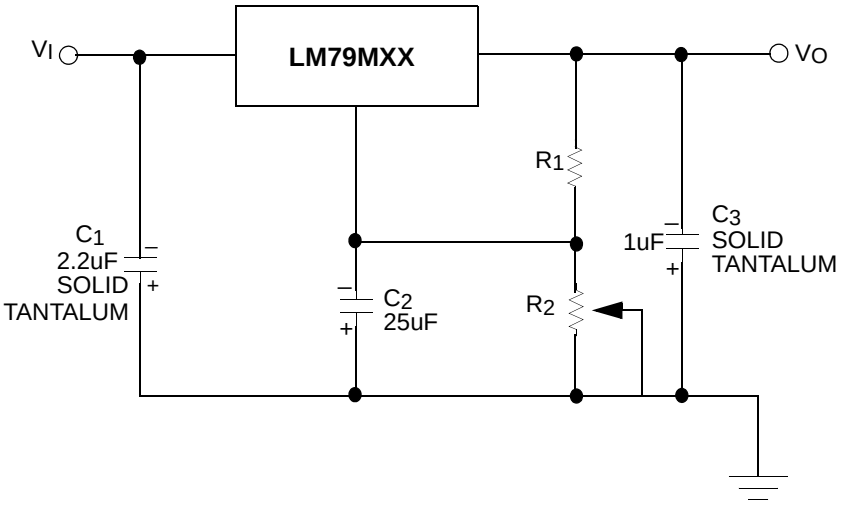


Figure 2. Variable Output

Notes:

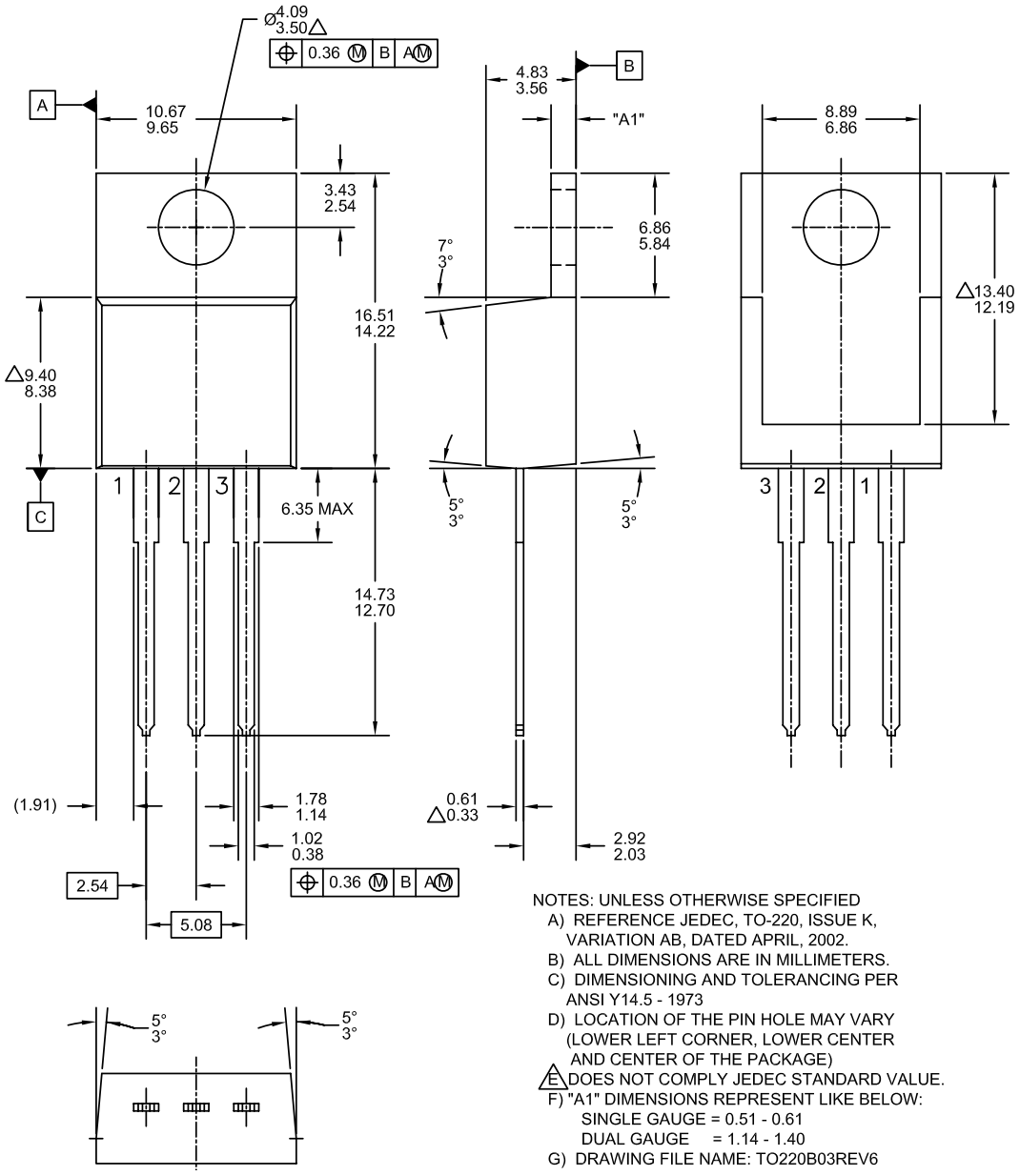
1. Required for stability. For value given, capacitor must be solid tantalum. 25μF aluminum electrolytic may be substituted.
2. C_2 improves transient response and ripple rejection. Do not increase beyond 50μF.

Mechanical Dimensions

Package

Dimensions in millimeters

TO-220 [SINGLE GAUGE]



NOTES: UNLESS OTHERWISE SPECIFIED

A) REFERENCE JEDEC, TO-220, ISSUE K, VARIATION AB, DATED APRIL, 2002.

B) ALL DIMENSIONS ARE IN MILLIMETERS.

C) DIMENSIONING AND TOLERANCING PER ANSI Y14.5 - 1973

D) LOCATION OF THE PIN HOLE MAY VARY (LOWER LEFT CORNER, LOWER CENTER AND CENTER OF THE PACKAGE)

△E DOES NOT COMPLY JEDEC STANDARD VALUE.

F) "A1" DIMENSIONS REPRESENT LIKE BELOW:
SINGLE GAUGE = 0.51 - 0.61
DUAL GAUGE = 1.14 - 1.40

G) DRAWING FILE NAME: TO220B03REV6

Ordering Information

Product Number	Package	Operating Temperature
LM79M05CT	TO-220	0 ~ +125°C