

# LM79M05

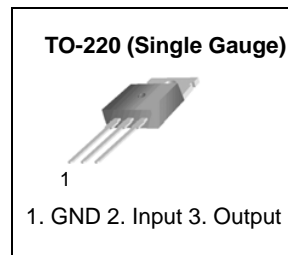
## 3-Terminal 0.5A Negative Voltage Regulator

### Features

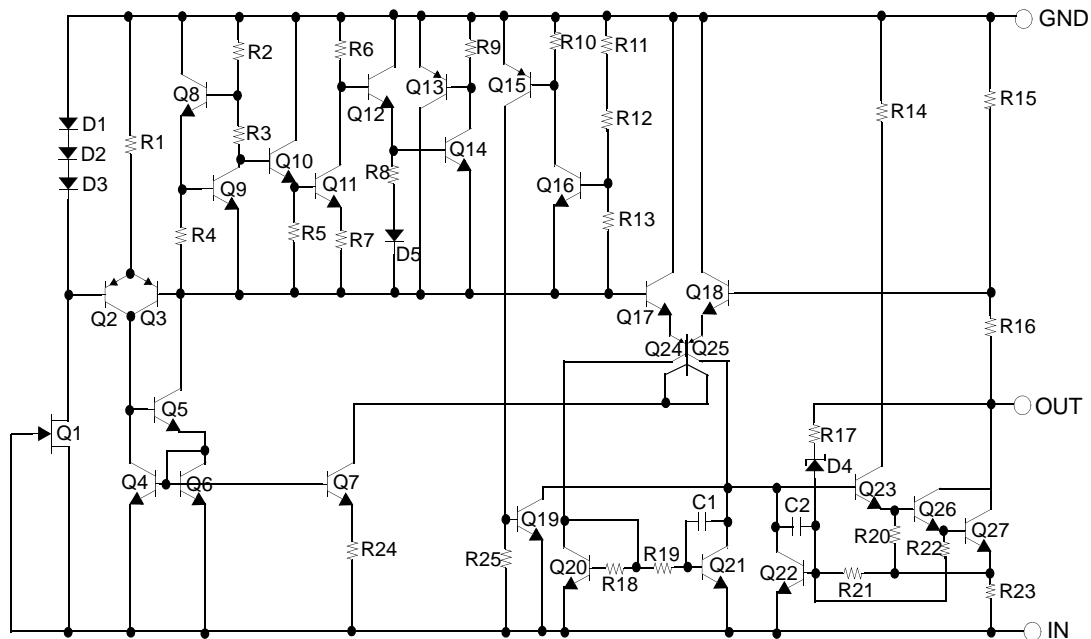
- No External Components Required
- Output Current in Excess of 0.5A
- Internal Thermal Overload
- Internal Short Circuit Current Limiting
- Output Transistor Safe Area Compensation
- Output Voltages of -5V

### Description

The LM79M05 of 3-Terminal medium current negative voltage regulator is monolithic integrated circuits designed as fixed voltage regulator. This regulator employs internal current limiting, thermal shutdown and safe area compensation making them essentially indestructible.



### Schematic Diagram



## Absolute Maximum Ratings

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

## Electrical Characteristics (LM79M05)

(Refer to test circuit,  $0^{\circ}C \leq T_J \leq +125^{\circ}C$ ,  $I_O = 350mA$ ,  $V_I = -10V$ , unless otherwise specified,  $C_I = 0.33\mu F$ ,  $C_O = 0.1\mu F$ )

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

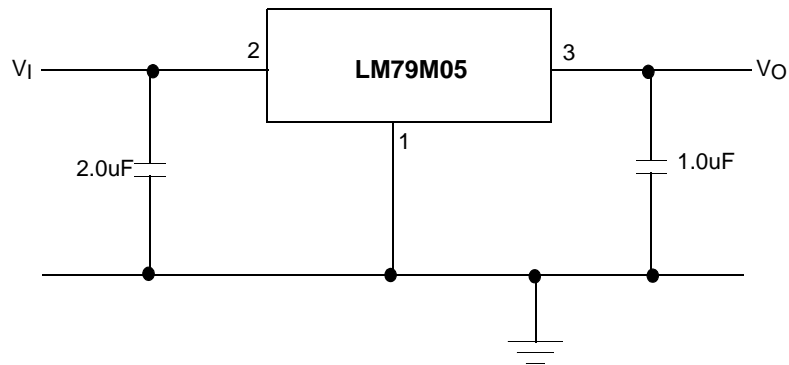


Figure 1. Fixed Output Regulator

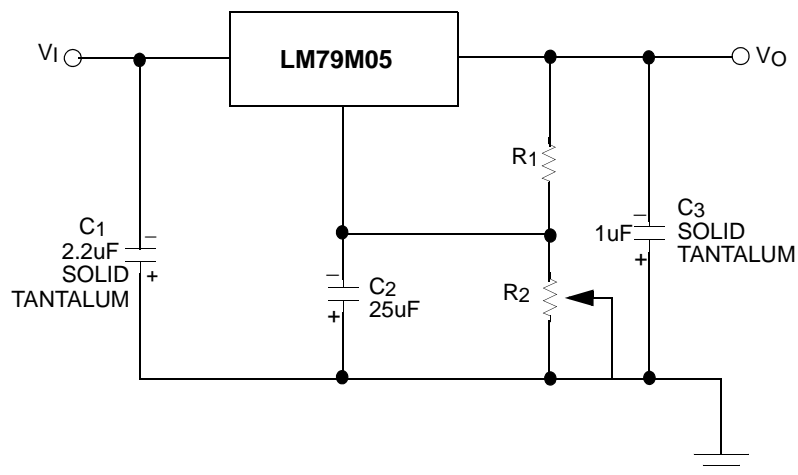


Figure 2. Variable Output

### Notes:

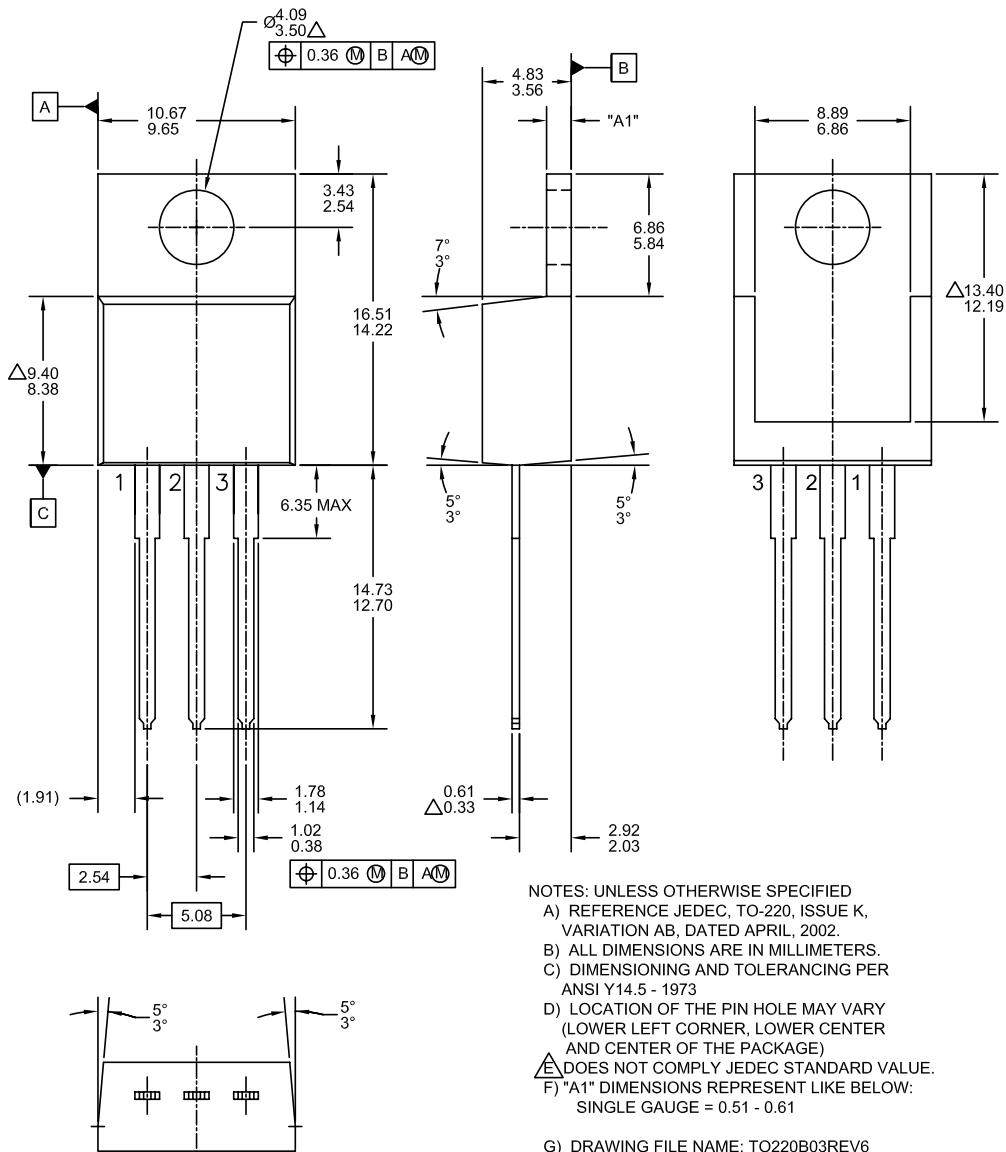
1. Required for stability. For value given, capacitor must be solid tantalum.  $25\mu\text{F}$  aluminum electrolytic may be substituted.
2.  $C_2$  improves transient response and ripple rejection. Do not increase beyond  $50\mu\text{F}$ .

# 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)
  - $\Delta$  DOES NOT COMPLY JEDEC STANDARD VALUE.
  - F) "A1" DIMENSIONS REPRESENT LIKE BELOW:  
SINGLE GAUGE = 0.51 - 0.61
  - G) DRAWING FILE NAME: TO220B03REV6

## Ordering Information

Product Number	Package	Operating Temperature
LM79M05CT	TO-220 (Single Gauge)	0 ~ +125°C

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2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.