

LM79M05

3-Terminal 0.5A Negative Voltage Regulator

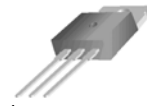
Features

- 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.

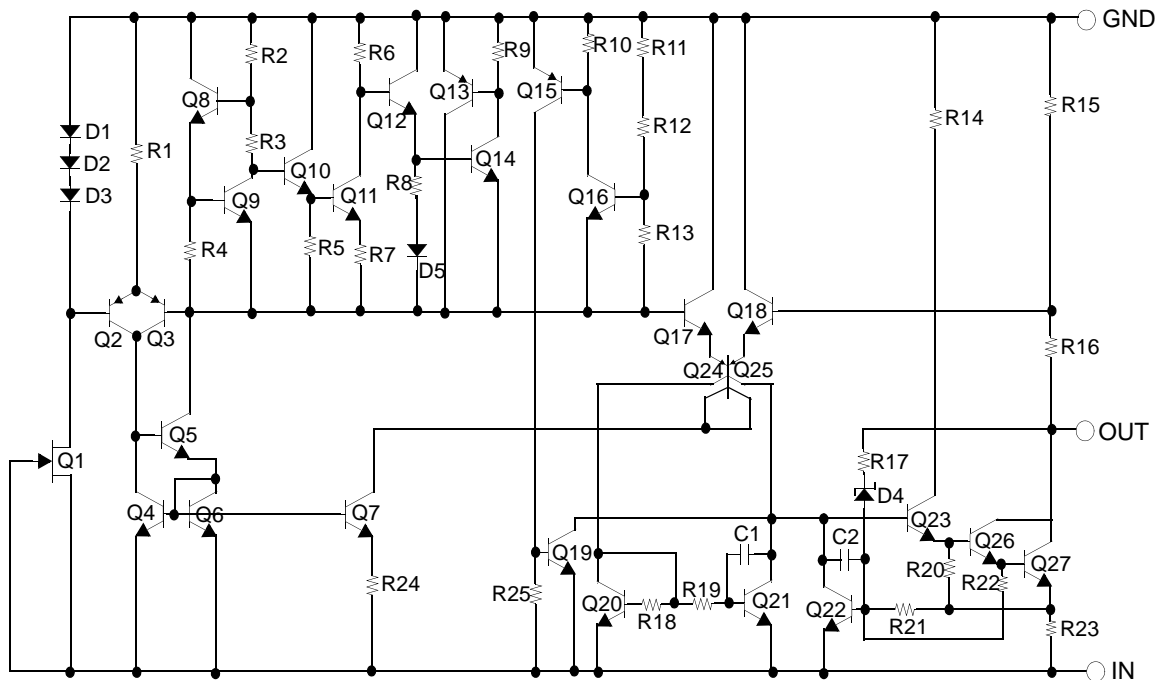
TO-220 (Single Gauge)



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1. GND 2. Input 3. Output

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, $C_1 = 0.33\mu F$, $C_O = 0.1\mu F$)

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)	ΔV_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)	ΔV_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	ΔI_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	-	μV	
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 Performance Characteristics

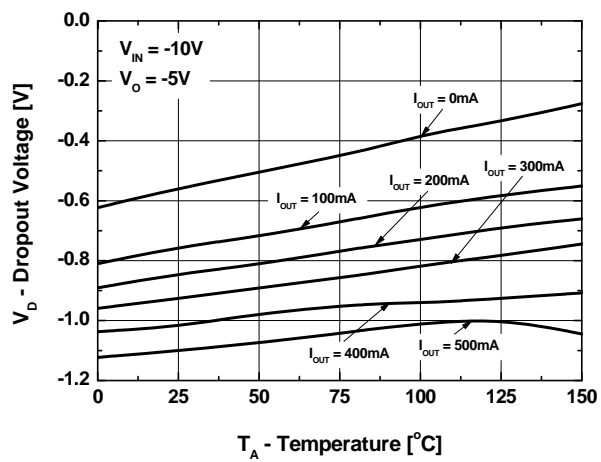


Figure 1. Dropout Voltage

Typical Applications

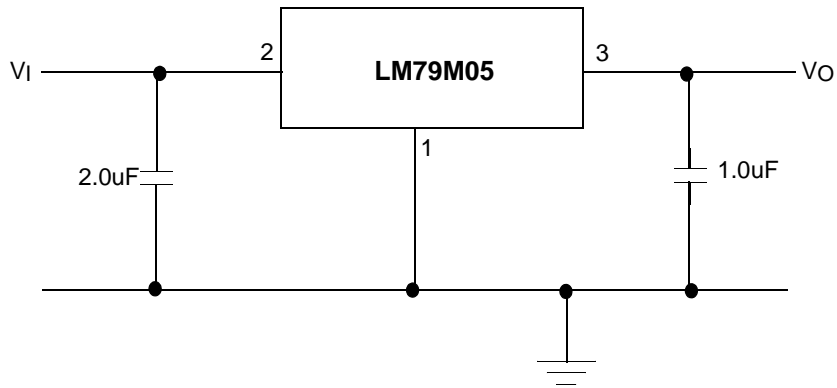


Figure 2. Fixed Output Regulator

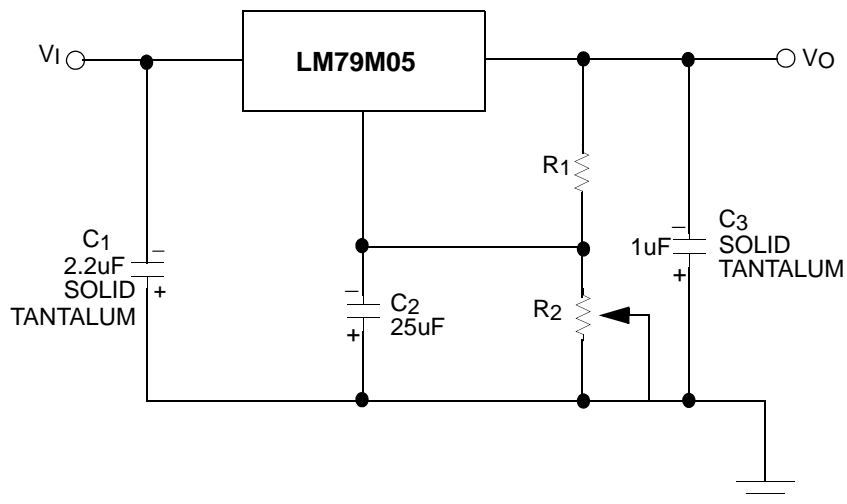


Figure 3. Variable Output

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 $50\mu\text{F}$.

Ordering Information

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

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