

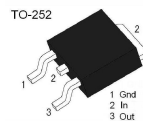
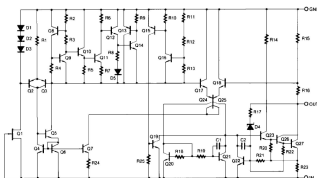
Description

The 79M05 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.

Features

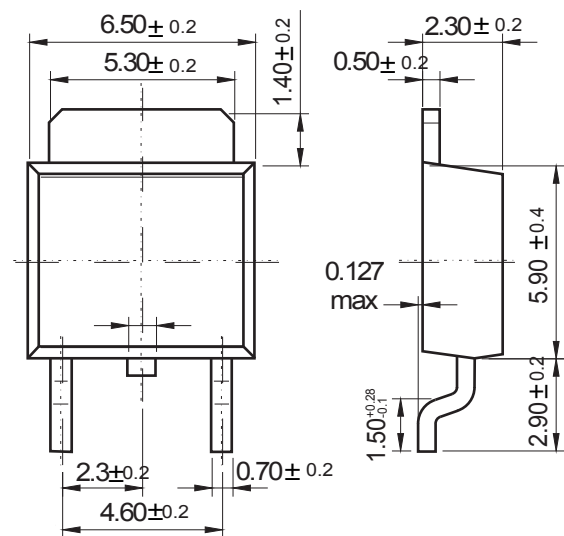
- No external components required
- Output current in excess of 1.0A
- Internal thermal overload
- Internal short circuit current limiting
- Output transistor safe area compensation
- Output voltages of -5V

Internal Block Diagram



TO-252

Unit: mm



Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Input voltage	V_{IN}	-30	V
Output voltage	V_O	-5	V
Operating Junction Temperature Range	T_j	-55 ~ 150	°C
Storage Temperature Range	T_{stg}	-65 ~ 150	°C

79M05

Electrical Characteristics ($T_a = 25^\circ\text{C}$)

(Refer to the test circuits, $I_o=500\text{mA}$, $V_i=-10\text{V}$, $C_i = 2.2\mu\text{F}$, $C_o=1\mu\text{F}$ unless otherwise specified)

Parameter	Symbol	Conditions	Value			Unit
			Min	Typ	Max	
Output Voltage	V_o	$T_j = 25^\circ\text{C}$	-4.8	-5.0	-5.2	V
		$I_o = 5\text{mA} \sim 1.0\text{A}$, $P_o < 15\text{W}$ $V_i = -7\text{V} \sim -20\text{V}$	-4.75	-5.0	-5.25	
Line Regulation (Note)	ΔV_o	$T_j = 25^\circ\text{C}$	$V_i = -7\text{V} \sim -25\text{V}$		100	mV
			$V_i = -8\text{V} \sim -12\text{V}$		50	
Load Regulation (Note)	ΔV_o	$T_j = 25^\circ\text{C}$	$I_o = 5\text{mA} \sim 1.0\text{A}$		100	mV
			$I_o = 0.25\text{A} \sim 0.75\text{A}$		50	
Quiescent Current	I_Q	$T_j = 25^\circ\text{C}$			6.0	mA
Quiescent Current Change	ΔI_Q	$I_o = 5\text{mA} \sim 1.0\text{A}$			0.5	mA
		$V_i = -8 \sim -25\text{V}$			0.8	
Output Voltage Drift	$\Delta V/\Delta T$	$I_o = 5\text{mA}$		-0.4		mV/ $^\circ\text{C}$
Output Noise Voltage	V_N	$f = 10\text{Hz} \sim 100\text{KHz}$		40		μV
Ripple Rejection	RR	$f = 120\text{Hz}$, $\Delta V_i = 10\text{V}$		60		dB
Dropout Voltage	V_D	$T_j = 25^\circ\text{C}$, $I_o = 1.0\text{A}$		2		V
Short Circuit Current	I_{SC}	$T_j = 25^\circ\text{C}$, $V_i = -35\text{V}$		300		mA
Peak Current	I_{PK}	$T_j = 25^\circ\text{C}$		1.6		A

Notes:

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.

RATING AND CHARACTERISTIC CURVES (79M05)

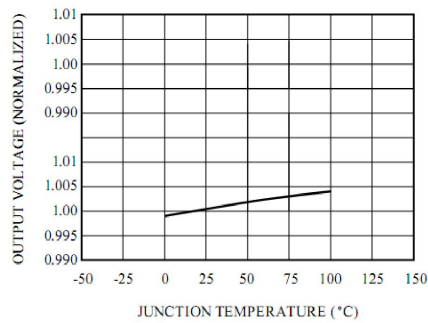


Figure 3. Output Voltage vs. Temperature

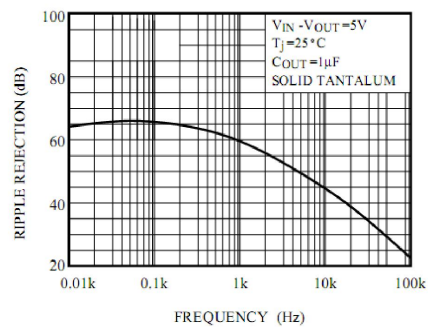


Figure 4. Ripple rejection

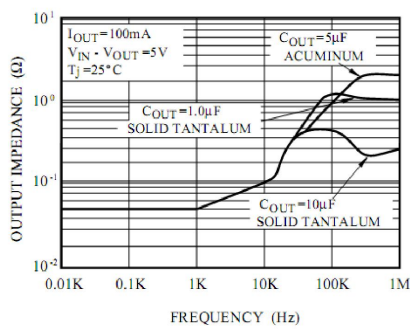


Figure 5. Output impedance

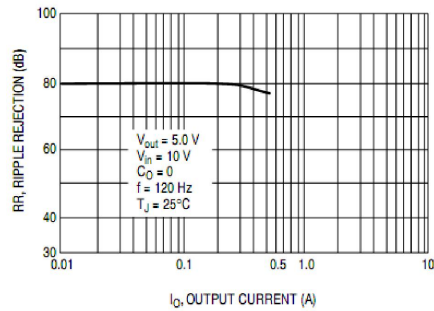


Figure 6. Minimum input-output differential

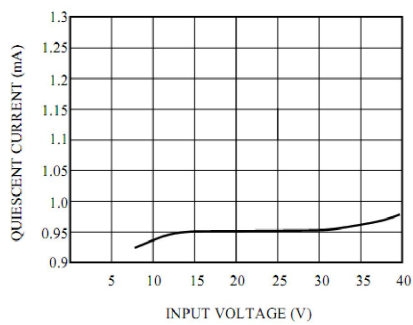


Figure 7. Bias Current vs Input Voltage

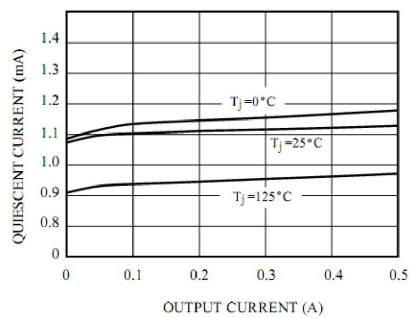


Figure 8. Quiescent current vs load current

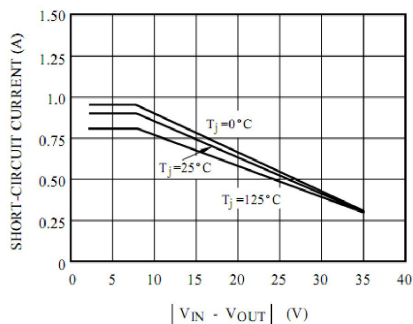


Figure 9. Short-circuit current

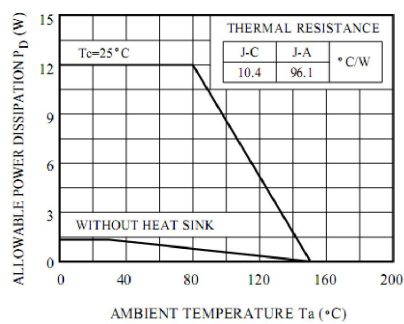


Figure 10. Power Derating

Typical Applications

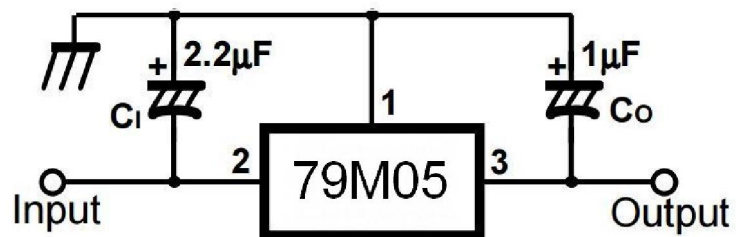


Figure.1 Fixed output regulat

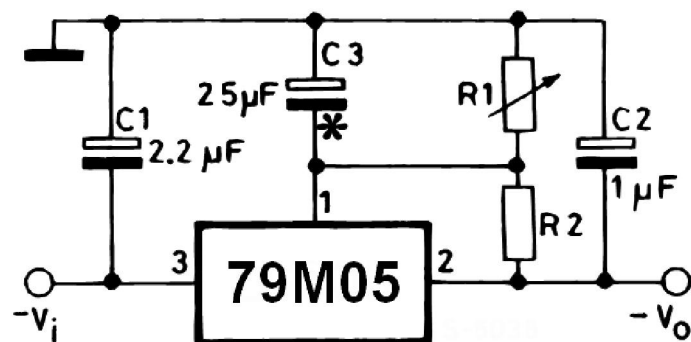


Figure.2 Circuit for increasing output voltage

Fig. Switching Time Waveform