

Features

Output Current up to 1.0A

Output Voltages of 5V

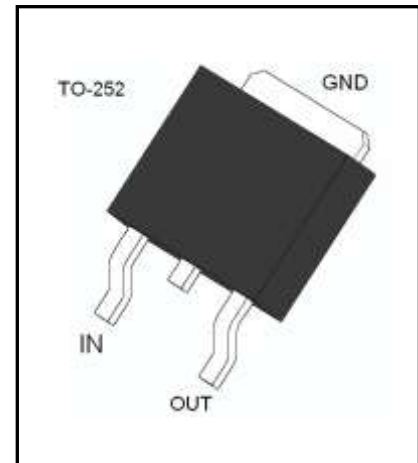
Thermal Overload Protection

Short Circuit Protection

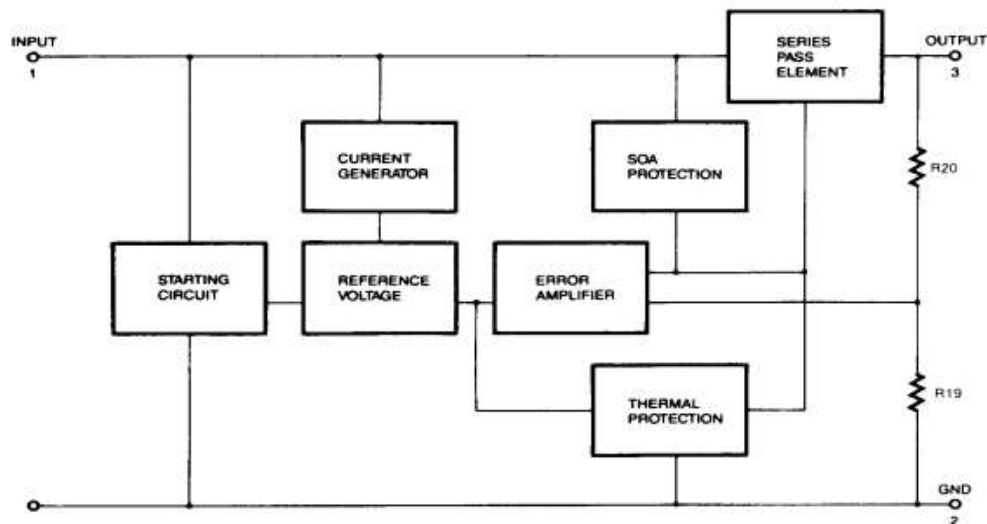
Output Transistor Safe Operating area (SOA)Protection

Description

The 78M05 three-terminal positive regulators are available in the TO-252 package with several fixed output voltages making it useful in a wide range of applications.



Internal Block Diagram



Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Input Voltage	V_{IN}	35	V
Out put Voltage	V_O	5	V
Continuous total dissipation	P_D	1.25	W
Operating Temperature Range	T_{OPR}	0 ~ + 125	°C
Storage Temperature Range	T_{STG}	-55 ~ + 150	°C

Electrical Characteristics

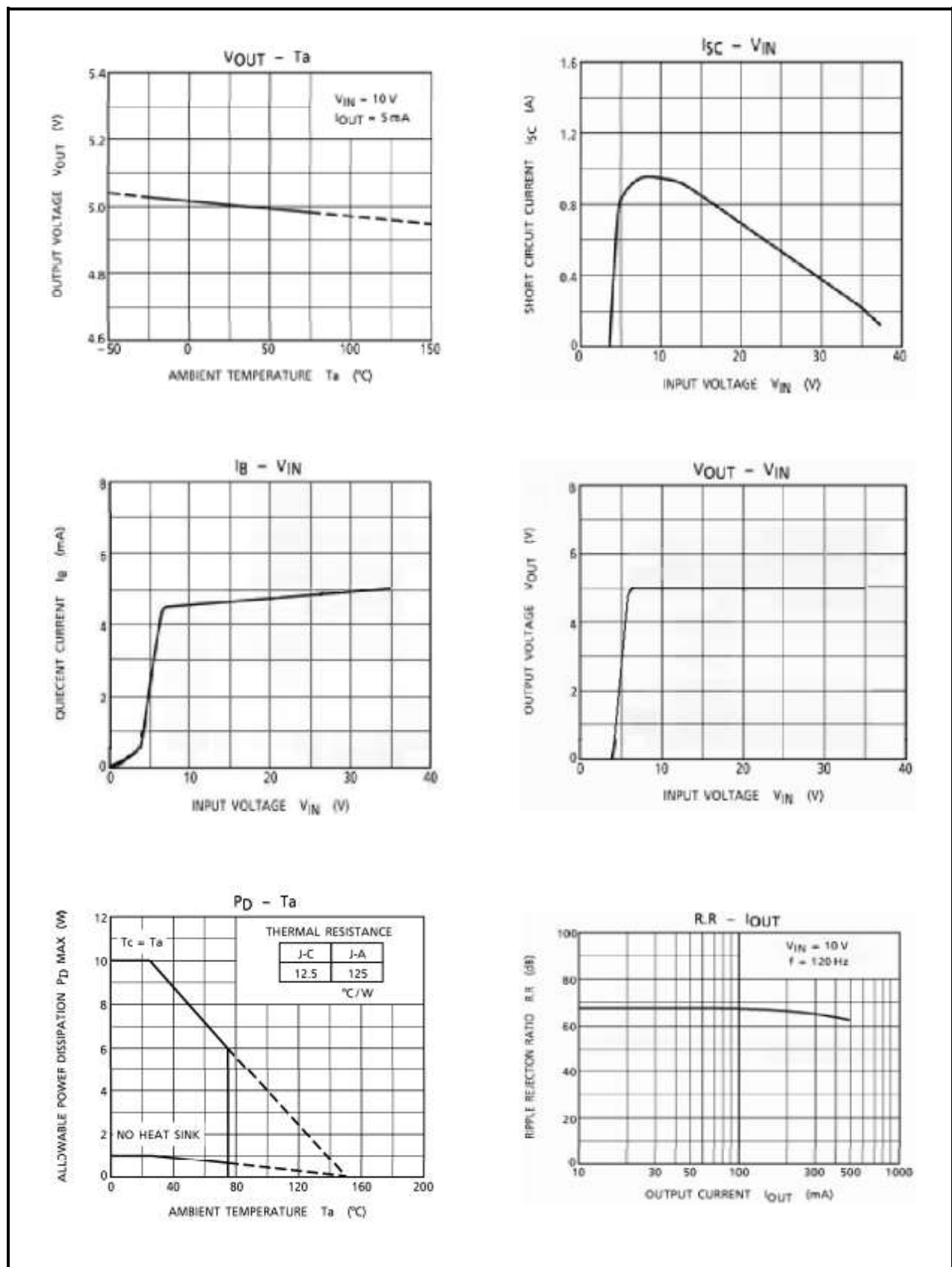
(Refer to the test circuits, $I_O=750\text{mA}$, $V_I=10\text{V}$, $C_I = 0.33\mu\text{F}$, $C_O=0.1\mu\text{F}$ unless otherwise specified)

Parameter	Symbol	Conditions		Value			Unit
				Min	Typ	Max	
		$T_j = 25^\circ\text{C}$		4.8		5.2	
Output Voltage	V_O	$V_I = 7 \sim 20\text{V}$ $I_O=5 \sim 1\text{A}$		4.75	5	5.25	V
Line Regulation	ΔV_O	$T_j = 25^\circ\text{C}$	$V_I = 7 \sim 25\text{V}$			120	mV
			$V_I = 8 \sim 22\text{V}$			60	
Load Regulation	ΔV_O	$T_j = 25^\circ\text{C}$	$I_O=5\text{mA} \sim 1\text{A}$			120	mV
			$I_O=0.25\text{A} \sim 0.75\text{A}$			60	
Quiescent Current	I_Q	$T_j = 25^\circ\text{C}$				8	mA
Quiescent Current Change	ΔI_Q	$I_O=5\text{mA} \sim 1\text{A}$				0.5	mA
		$V_I = 7 \sim 25\text{V}$				1.2	
Output Voltage Drift	$\Delta V/\Delta T$	$I_O = 5\text{mA}$ $T_j = 0 \text{ to } +125^\circ\text{C}$			-0.8		mV/ $^\circ\text{C}$
Output Noise Voltage	V_N	$10\text{Hz} \leq f \leq 100\text{kHz}$			40		μV
Ripple Rejection	RR	$f = 120\text{Hz}$, $I_O = 300\text{mA}$ $V_I = 8 \text{ to } 18\text{V}$		60			dB
Dropout Voltage	V_D	$T_j = +25^\circ\text{C}$, $I_O = 1\text{A}$			2		V
Short Circuit Current	I_{SC}	$T_j = +25^\circ\text{C}$, $V_I = 35\text{V}$			300		mA
Peak Current	I_{PK}				1.50		A

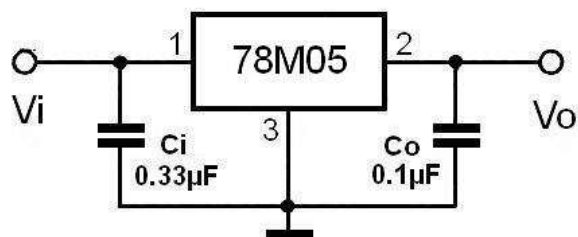
Notes:

*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.

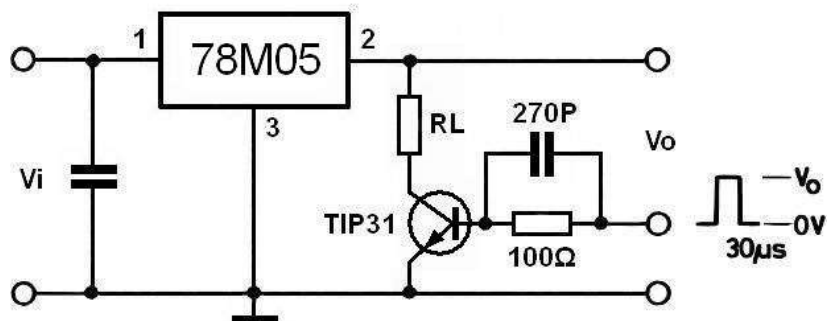
Typical Characteristics



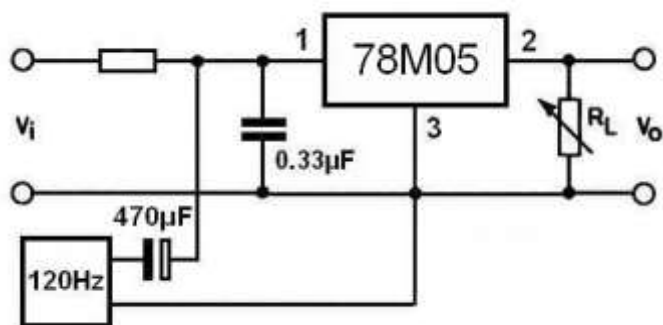
Test Circuits



DC Parameter



Load Regulation



Ripple Rejection

Package Dimensions (unit:mm)

