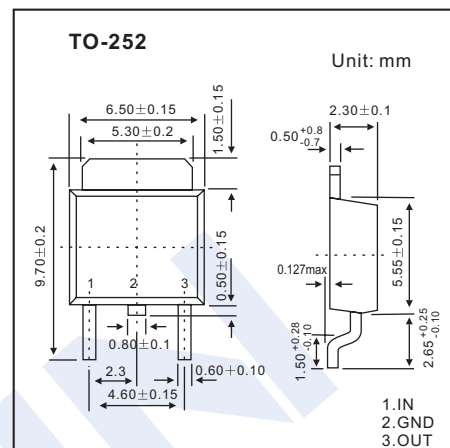


Three-Terminal Positive Voltage Regulator

LM78M09



Features

- Maximum Output current I_{om} : 0.5A
- Output Voltage V_o : 9V
- Continuous Total Dissipation P_d : 1.25W ($T_A = 25^\circ\text{C}$)

Absolute Maximum Ratings (Operating temperature range applies unless otherwise specified)

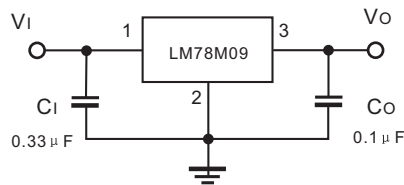
Parameter	Symbol	Rating	Unit
Input Voltage	V_i	35	V
Operating Junction Temperature Range	T_{opr}	-55 ~ +125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-65 ~ +150	$^\circ\text{C}$

Electrical Characteristics ($V_i=16\text{V}$, $I_o=350\text{mA}$, $C_i=0.33\ \mu\text{F}$, $C_o=0.1\ \mu\text{F}$, unless otherwise specified)

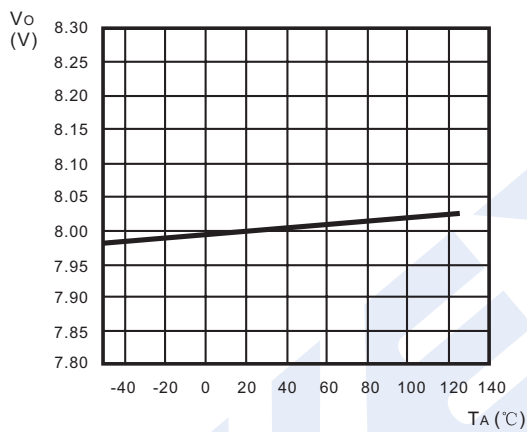
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Output Voltage	V_o	$T_J = 25^\circ\text{C}$	8.65	9	9.35	V
		$T_J = 0 \sim 125^\circ\text{C}$, $11.5\text{V} \leq V_i \leq 24\text{V}$, $I_o = 5\text{mA} \sim 350\text{mA}$, $P_o \leq 15\text{W}$	8.55	9	9.45	V
Load Regulation	ΔV_o	$T_J = 25^\circ\text{C}$, $I_o = 5\text{mA} \sim 0.5\text{A}$		20	180	mV
		$T_J = 25^\circ\text{C}$, $I_o = 5\text{mA} \sim 200\text{mA}$		10	90	mV
Line Regulation	ΔV_o	$T_J = 25^\circ\text{C}$, $11.5\text{V} \leq V_i \leq 26\text{V}$, $I_o = 200\text{mA}$		6	100	mV
		$T_J = 25^\circ\text{C}$, $12\text{V} \leq V_i \leq 26\text{V}$, $I_o = 200\text{mA}$		2	50	mV
Quiescent Current	I_q	$T_J = 25^\circ\text{C}$		4.6	6	mA
Quiescent current Change	ΔI_q	$T_J = 0 \sim 125^\circ\text{C}$, $11.5\text{V} \leq V_i \leq 26\text{V}$, $I_o = 200\text{mA}$			0.8	mA
		$T_J = 0 \sim 125^\circ\text{C}$, $5\text{mA} \leq I_o \leq 350\text{mA}$			0.5	mA
Output Noise Voltage	V_N	$T_J = 25^\circ\text{C}$, $10\text{Hz} \leq f \leq 100\text{kHz}$		60		μV
Ripple Rejection	RR	$T_J = 0 \sim 125^\circ\text{C}$, $13\text{V} \leq V_i \leq 23\text{V}$, $f = 120\text{Hz}$, $I_o = 300\text{mA}$	56	80		dB
Dropout Voltage	V_D	$T_J = 25^\circ\text{C}$, $I_o = 350\text{mA}$		2		V
Short Circuit Current	I_{sc}	$T_J = 25^\circ\text{C}$, $V_i = 16\text{V}$		250		mA
Peak Current	I_{pk}	$T_J = 25^\circ\text{C}$		0.7		A

LM78M09

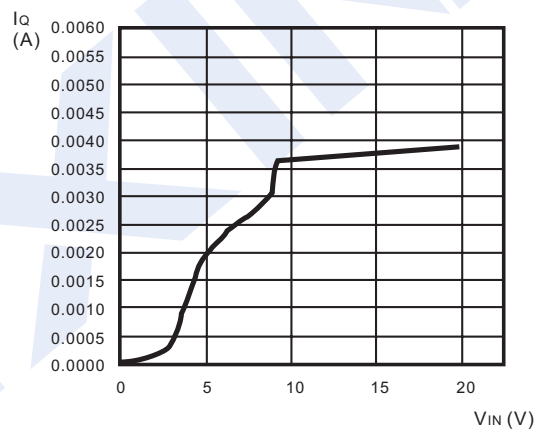
Typical Application



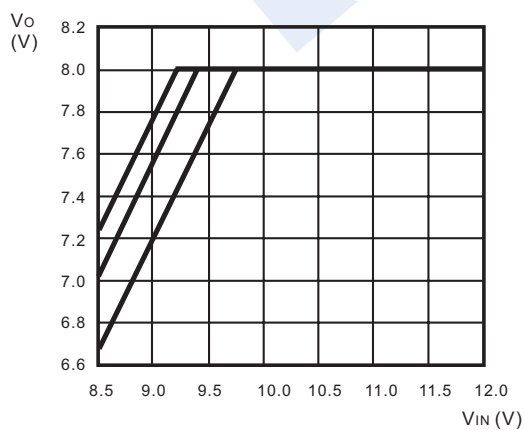
Typical Characteristics



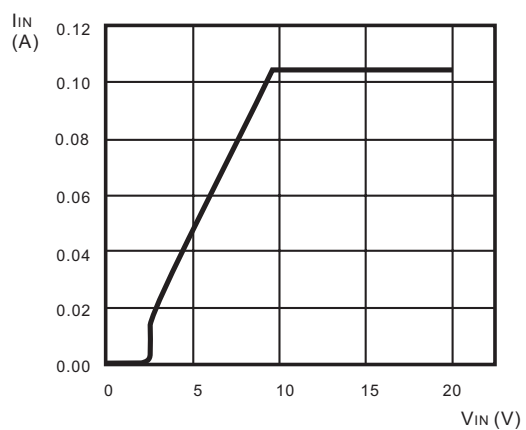
Ambient Temperature vs Output Voltage



Input Voltage vs Quiescent Current (TJ = 25°C)



Input Voltage vs Output Voltage (TJ = 25°C)



Input Voltage vs Input Current (TJ = 25°C)