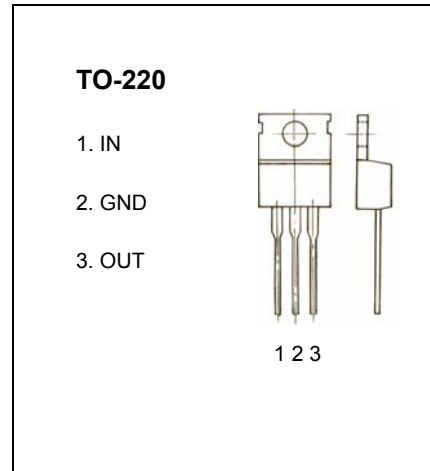


TO-220 Plastic-Encapsulate Voltage Regulator

HM7809 Three-terminal positive voltage regulator

FEATURES

Maximum Output current I_{OM} : 1.5 A
Output voltage V_o : 9 V
Continuous total dissipation
 P_D : 2 W ($T_J = 25^\circ\text{C}$)



ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

Parameter	Symbol	Value	Unit
Input Voltage	V_i	35	V
Thermal resistance junction-air	$R_{\theta JA}$	65	$^\circ\text{C}/\text{W}$
Thermal resistance junction-cases	$R_{\theta JC}$	5	$^\circ\text{C}/\text{W}$
Operating Junction Temperature Range	T_{OPR}	0-150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-65-150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($V_i=16\text{V}, I_o=500\text{mA}, 0^\circ\text{C}<T_J<125^\circ\text{C}, C_i=0.33\mu\text{F}, C_o=0.1\mu\text{F}$, 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
		$11.5\text{V}\leq V_i\leq 24\text{V}, I_o=5\text{mA}-1\text{A}, P\leq 15\text{W}$	8.55	9	9.45	V
Load Regulation	ΔV_o	$T_J=25^\circ\text{C}, I_o=5\text{mA}-1.5\text{A}$		12	180	mV
		$T_J=25^\circ\text{C}, I_o=250\text{mA}-750\text{mA}$		4	90	mV
Line regulation	ΔV_o	$11.5\text{V}\leq V_i\leq 27\text{V}, T_J=25^\circ\text{C}$		7	180	mV
		$13\text{V}\leq V_i\leq 19\text{V}, T_J=25^\circ\text{C}$		2	90	mV
Quiescent Current	I_q	$T_J=25^\circ\text{C}$		4.3	8	mA
Quiescent Current Change	ΔI_q	$11.5\text{V}\leq V_i\leq 27\text{V}$			1	mA
		$5\text{mA}\leq I_o\leq 1\text{A}$			0.5	mA
Output voltage drift	$\Delta V_o/\Delta T$	$I_o=5\text{mA}$		-1		$\text{mV}/^\circ\text{C}$
Output Noise Voltage	V_N	$10\text{Hz}\leq f\leq 100\text{KHz}$		60		μV
Ripple Rejection	RR	$12\text{V}\leq V_i\leq 22\text{V}, f=120\text{Hz}, T_J=25^\circ\text{C}$	55	70		dB
Dropout Voltage	V_d	$T_J=25^\circ\text{C}, I_o=1\text{A}$		2		V
Output resistance	R_o	$f=1\text{KHz}$		18		$\text{m}\Omega$
Short Circuit Current	I_{sc}	$T_J=25^\circ\text{C}$		400		mA
Peak Current	I_{pk}	$T_J=25^\circ\text{C}$		2.2		A

TYPICAL APPLICATION