

L7809CV

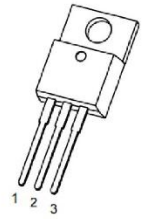
Three-terminal positive voltage regulator

FEATURES

- Maximum Output Current I_{OM} : 1.5A
- Output Voltage V_O : 9V
- Continuous total dissipation
 P_D : 1.5W($T_A=25^\circ\text{C}$)

TO-220-3L

1. IN
2. GND
3. OUT



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

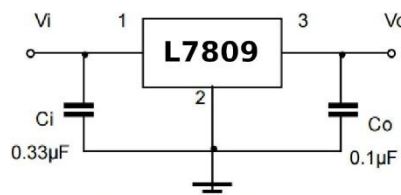
Parameter	Symbol	Value	UNIT
Input Voltage	V_I	35	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	83.3	$^\circ\text{C/W}$
Thermal Resistance from Junction to Case	$R_{\theta JC}$	8.3	$^\circ\text{C/W}$
Operating Junction Temperature Range	T_{OPR}	0 ~ +150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 ~ +150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE

($V_I=16\text{V}$, $I_O=500\text{mA}$, $C_I=0.33\mu\text{F}$, $C_O=0.1\mu\text{F}$, unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Output Voltage	V_O	25°C	8.65	9	9.35	V
		$11.5\text{V} \leq V_I \leq 24\text{V}$, $I_O=5\text{mA}-1\text{A}$, $P \leq 15\text{W}$	-25~125 $^\circ\text{C}$	8.55	9	9.45
Load Regulation	ΔV_O	$I_O=5\text{mA}-1.5\text{A}$	25°C	12	180	mV
		$I_O=250\text{mA}-750\text{mA}$	25°C	4	90	
Line Regulation	ΔV_O	$11.5\text{V} \leq V_I \leq 27\text{V}$	25°C	7	180	mV
		$13\text{V} \leq V_I \leq 19\text{V}$	25°C	2	90	
Quiescent Current	I_Q	25°C		4.3	8	mA
Quiescent Current Change	ΔI_Q	$11.5\text{V} \leq V_I \leq 27\text{V}$	-25~125 $^\circ\text{C}$		1	mA
		$5\text{mA} \leq I_O \leq 1\text{A}$	-25~125 $^\circ\text{C}$		0.5	
Output Noise Voltage	V_N	$10\text{Hz} \leq F \leq 100\text{KHz}$	25°C	60		$\mu\text{V}/V_O$
Output Voltage Drift	$\Delta V_O/\Delta T$	$I_O=5\text{mA}$	-25~125 $^\circ\text{C}$	-1		mV/ $^\circ\text{C}$
Ripple Rejection	RR	$12\text{V} \leq V_I \leq 22\text{V}$, $F=120\text{Hz}$	-25~125 $^\circ\text{C}$	55	70	dB
Dropout Voltage	V_D	$I_O=1\text{A}$	25°C	2		V
Output Resistance	R_O	$F=1\text{KHz}$	25°C	18		m Ω
Short Circuit Current	I_{SC}	25°C		400		mA
Peak Current	I_{PK}	25°C		2.2		A

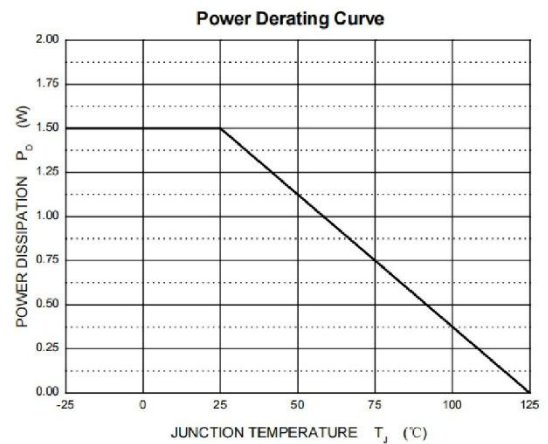
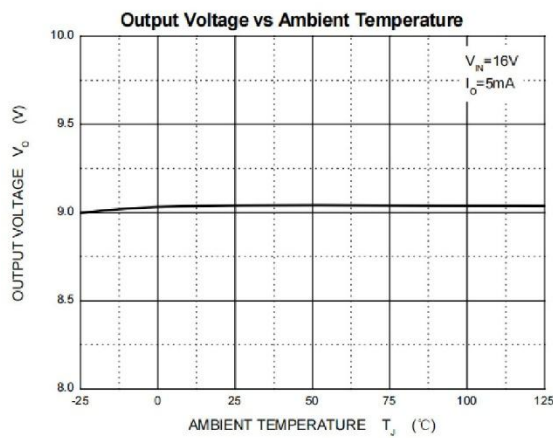
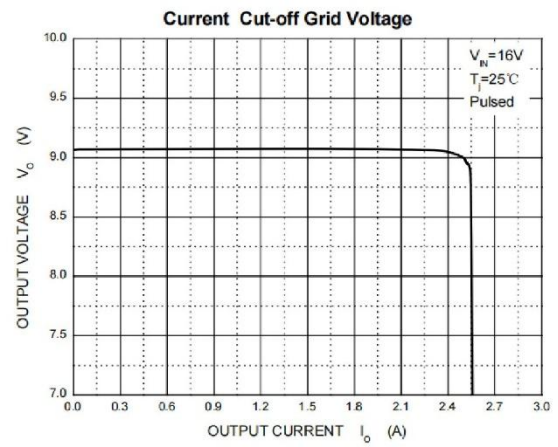
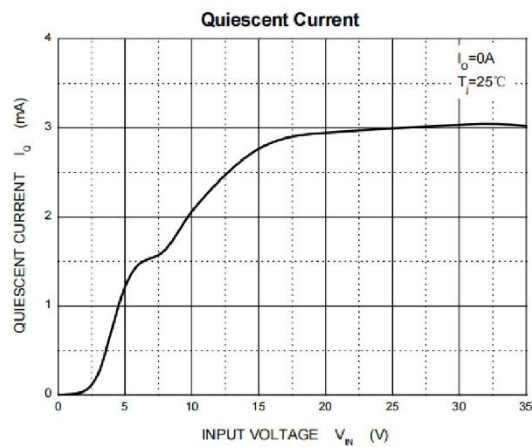
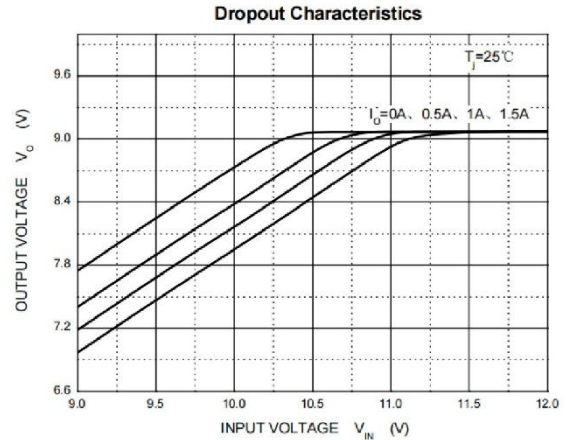
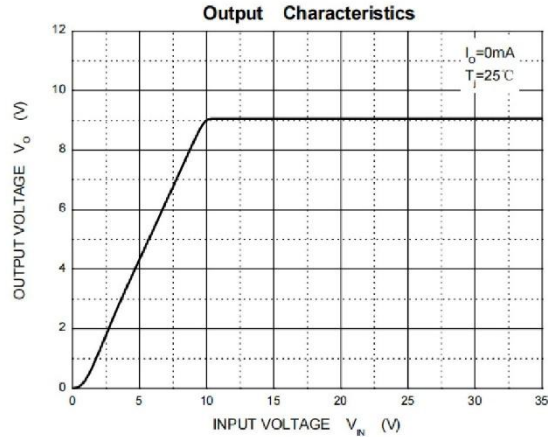
TYPICAL APPLICATION



Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

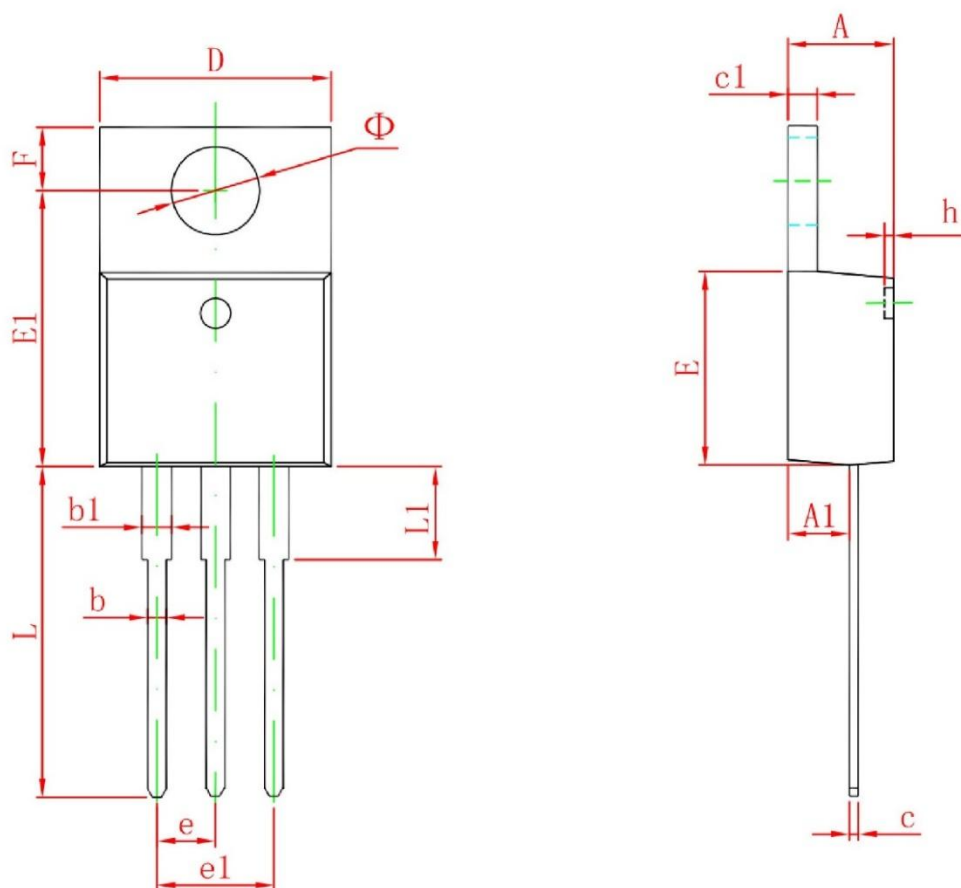
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TYPICAL CHARACTERISTICS



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TO-220-3L Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	4.470	4.670	0.176	0.184
A1	2.520	2.820	0.099	0.111
b	0.710	0.910	0.028	0.036
b1	1.170	1.370	0.046	0.054
c	0.310	0.530	0.012	0.021
c1	1.170	1.370	0.046	0.054
D	10.010	10.310	0.394	0.406
E	8.500	8.900	0.335	0.350
E1	12.060	12.460	0.475	0.491
e	2.540 TYP		0.100 TYP	
e1	4.980	5.180	0.196	0.204
F	2.590	2.890	0.102	0.114
h	0.000	0.300	0.000	0.012
L	13.400	13.800	0.528	0.543
L1	3.560	3.960	0.140	0.156
Φ	3.735	3.935	0.147	0.155

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