



**TO-220 Plastic-Encapsulate Voltage Regulator**

**CJ7812** Three-terminal positive voltage regulator

**FEATURES**

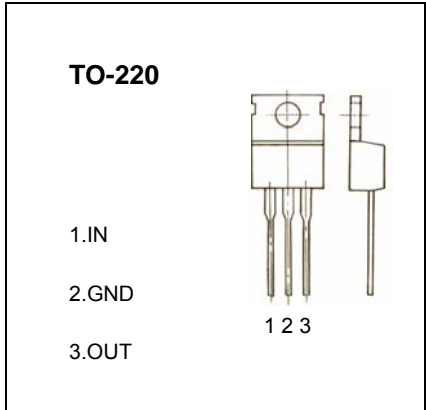
Maximum Output current  $I_{OM}$ : 1.5 A

Output voltage  $V_o$ : 12 V

Continuous total dissipation

$P_D$ : 2 W ( $T_J = 25^\circ\text{C}$ )

15 W ( $T_C = 25^\circ\text{C}$ )



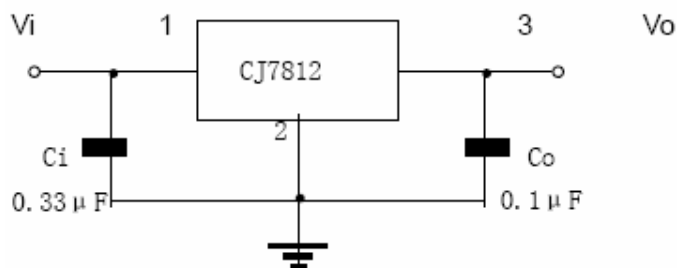
**ABSOLUTE MAXIMUM RATINGS**(Operating temperature range applies unless otherwise specified)

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**( $V_i=19\text{V}, I_o=500\text{mA}, 0^\circ\text{C}<T_J<125^\circ\text{C}, C_i=0.33\mu\text{F}, C_o=0.1\mu\text{F}$ , unless otherwise specified )

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Output voltage	$V_o$	$T_J=25^\circ\text{C}$	11.5	12.0	12.5	V
		$I_o=5.0\text{mA}-1.0\text{A}, P<15\text{W}$ $14.5\text{V} \leq V_i \leq 27\text{V}$	11.4	12	12.6	V
Load Regulation	$\Delta V_o$	$T_J=25^\circ\text{C}, 14.5\text{V} \leq V_i \leq 30\text{V}$		10	240	mV
		$T_J=25^\circ\text{C}, 16\text{V} \leq V_i \leq 22\text{V}$		3	120	mV
Line regulation	$\Delta V_o$	$T_J=25^\circ\text{C}, I_o=15.0\text{mA} - 1.5\text{A}$		11	240	mV
		$T_J=25^\circ\text{C}, I_o=250\text{mA} - 750\text{mA}$		5.0	120	mV
Quiescent Current	$I_q$	$T_J=25^\circ\text{C}$		5.1	8	mA
Quiescent Current Change	$\Delta I_q$	$5.0\text{mA} \leq I_o \leq 1.0\text{A}$			0.5	mA
		$14.5\text{V} \leq V_i \leq 30\text{V}$			1.0	mA
Output voltage drift	$\Delta V_o/\Delta T$	$I_o=5\text{mA}$		-1		$\text{mV}/^\circ\text{C}$
Output Noise Voltage	$V_N$	$f=10\text{Hz to }100\text{KHz}, T_J=25^\circ\text{C}$		76		$\mu\text{V}$
Ripple Rejection	RR	$f=120\text{Hz}, 15\text{V} \leq V_i \leq 25\text{V}$	55	71		dB
Dropout Voltage	$V_d$	$I_o=1.0\text{A}, T_J=25^\circ\text{C}$		2		V
Output resistance	$R_o$	$f=1\text{KHz}$		18		$\text{m}\Omega$
Short Circuit Current	$I_{sc}$	$V_i=35\text{V}, T_J=25^\circ\text{C}$		230		mA
Peak Current	$I_{pk}$	$T_J=25^\circ\text{C}$		2.2		A

**TYPICAL APPLICATION**



# Typical Characteristics

# CJ7812

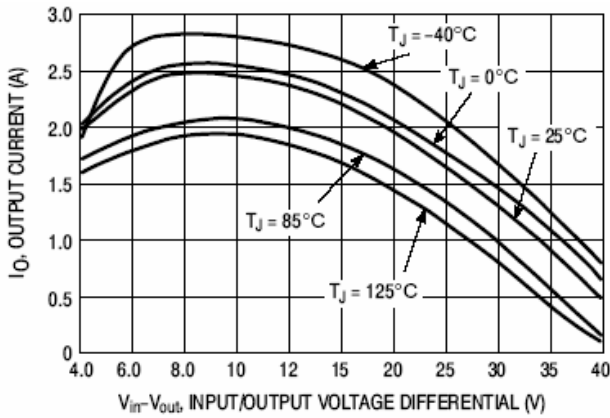


Figure 1. Peak Output Current as a Function of Input/Output Differential Voltage

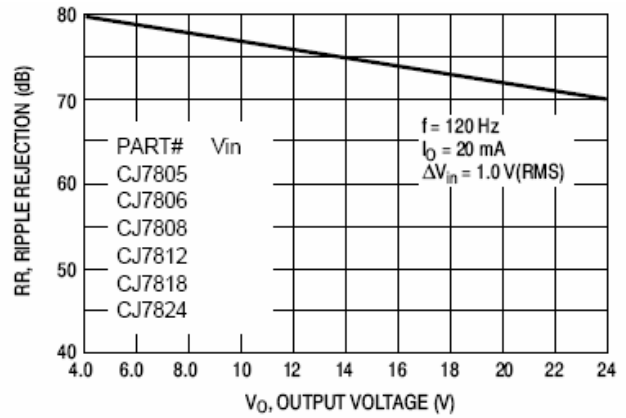


Figure 1. Ripple Rejection as a Function of Output Voltages

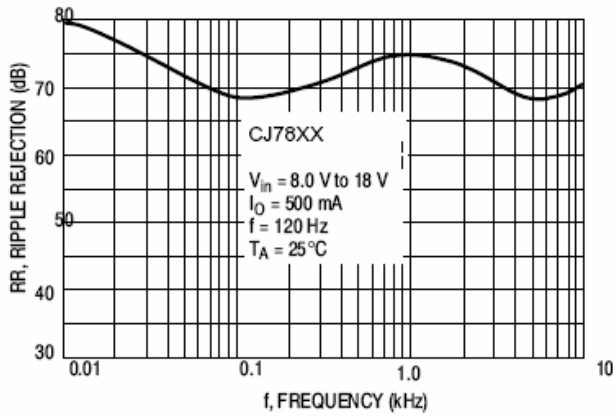


Figure 4. Ripple Rejection as a Function of Frequency

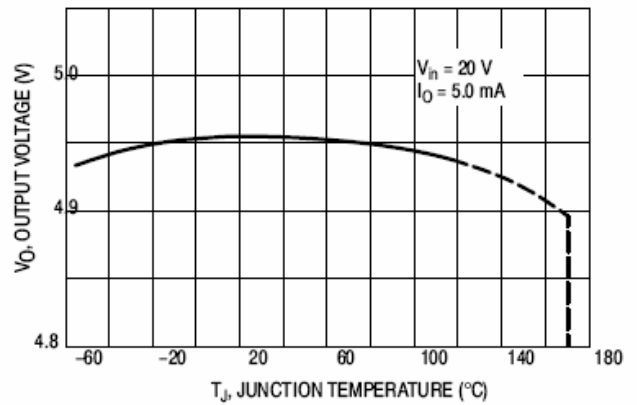


Figure 5. Output Voltage as a Function of Junction Temperature

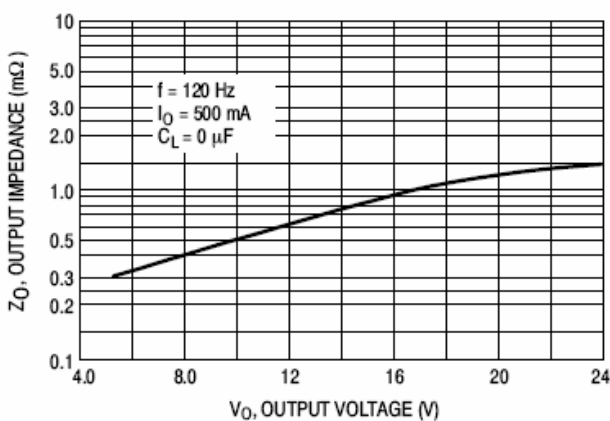


Figure 6. Output Impedance as a Function of Output Voltage

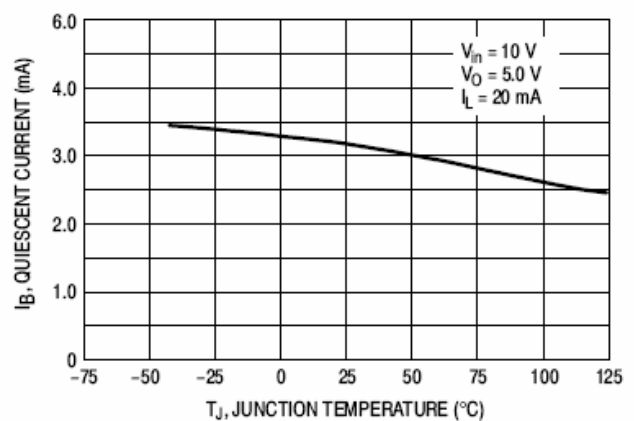


Figure 7. Quiescent Current as a Function of Temperature