CHUANGYUAN TECHNOLOGES (HK) LIMITED
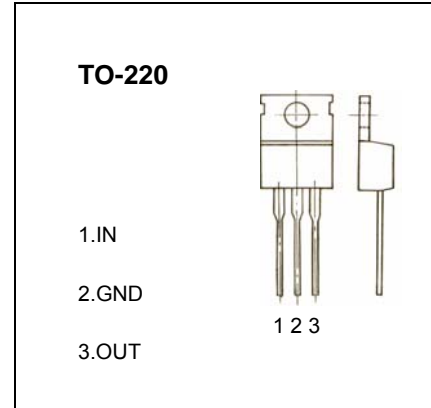
TO-220 Plastic-Encapsulate   Voltage Regulator

LM7812 Three-terminal positive voltage regulator

TO-220

1.IN

2.GND

3.OUT

1 2 3

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 ℃)
         15 W (T_C= 25 ℃)

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

Parameter	Symbol	Value	Unit
Input Voltage	V_i	35	V
Thermal resistance junction-air	RθJA	65	℃/W
Thermal resistance junction-cases	RθJC	5	℃/W
Operating Junction Temperature Range	T_{OPR}	0-150	℃
Storage Temperature Range	T_{STG}	-65-150	℃

ELECTRICAL   CHARACTERISTICS(Vi=19V,Io=500mA,0℃<T_J<125℃,Ci=0.33μF,Co=0.1μF,   unless   otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Output voltage	Vo	T_J=25℃	11.5	12.0	12.5	V
		Io= 5.0mA-1.0A, P<15W 14.5V≤ V_i ≤27V	11.4	12	12.6	V
Line Regulation	ΔVo	T_J=25℃, 14.5V≤ Vi ≤30V		10	240	mV
		T_J=25℃, 16V≤V_i≤22V		3	120	mV
Load regulation	ΔVo	T_J=25℃, I_O=5mA - 1.5A		12	240	mV
		T_J=25℃, I_O=250mA - 750mA		4	120	mV
Quiescent Current	Iq	T_J=25℃		4.3	8	mA
Quiescent Current Change	ΔIq	5.0mA≤ I_O ≤1.0A			0.5	mA
		14.5V ≤V_i≤ 30V			1.0	mA
Output voltage drift	△Vo/△T	I_O=5mA		-1		mV/℃
Output Noise Voltage	V_N	f =10Hz to 100KHz,T_J=25℃		75		μV
Ripple Rejection	RR	f =120Hz, 15V≤ V_i ≤25V	55	71		dB
Dropout Voltage	V_d	I_O=1.0A,T_J=25℃		2		V
Output resistance	R_O	f = 1KHz		18		mΩ
Short Circuit Current	Isc	V_i=35V, T_J=25℃		350		mA
Peak Current	Ipk	T_J=25℃		2.2		A

TYPICAL APPLICATION

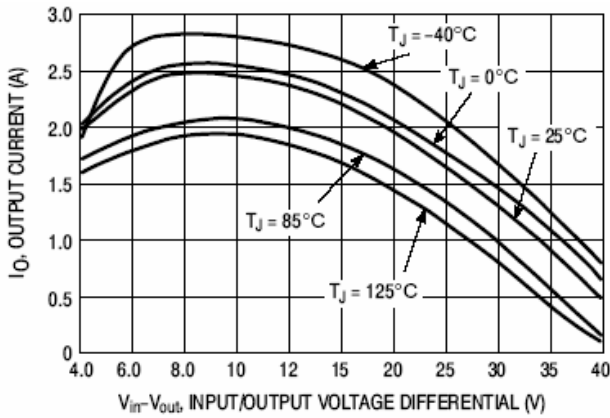Vi   1   LM 7812   3   Vo

2

Ci
0.33μF

Co
0.1μF
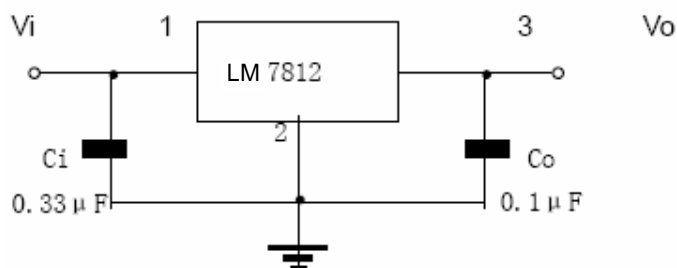
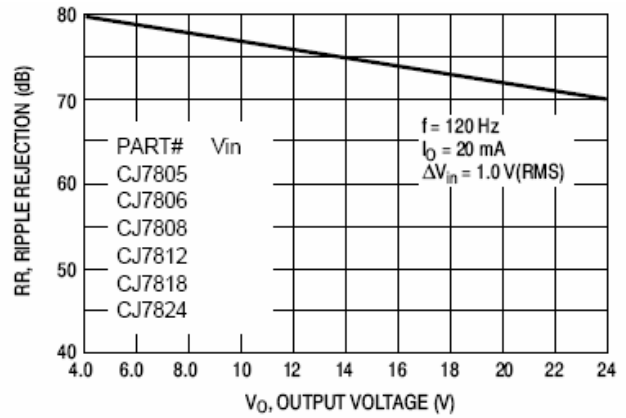Figure 1. Peak Output Current as a Function of Input/Output Differential Voltage

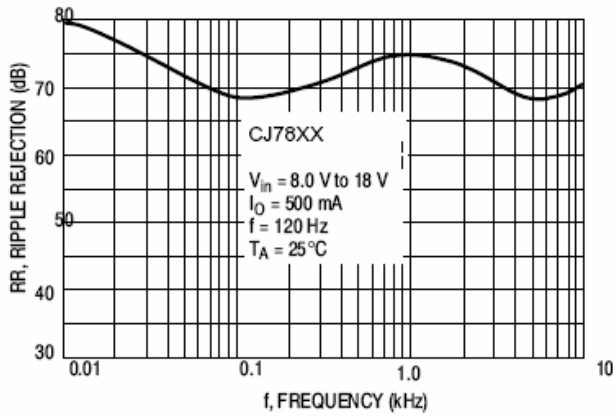Figure 1. Ripple Rejection as a Function of Output Voltages

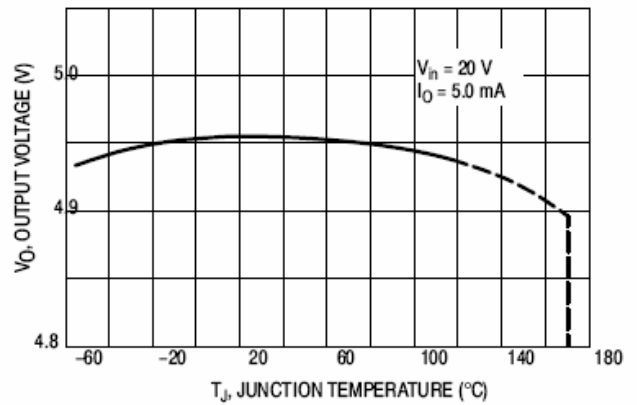Figure 4. Ripple Rejection as a Function of Frequency

Figure 5. Output Voltage as a Function of Junction Temperature
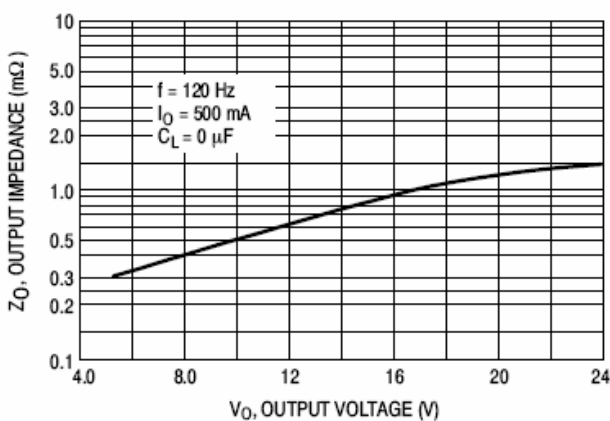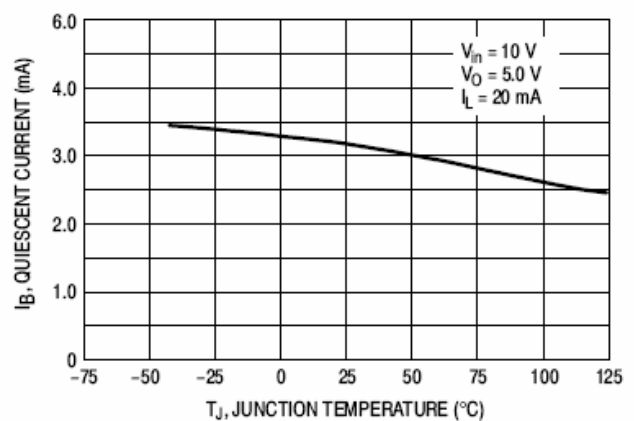
Figure 6. Output Impedance as a Function of Output Voltage

Figure 7. Quiescent Current as a Function of Temperature