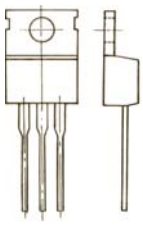
TO-220 Plastic-Encapsulate Voltage Regulator

FS7805CTG 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: 5V
Continuous total dissipation

P_D: 2 W (T_J = 25℃)

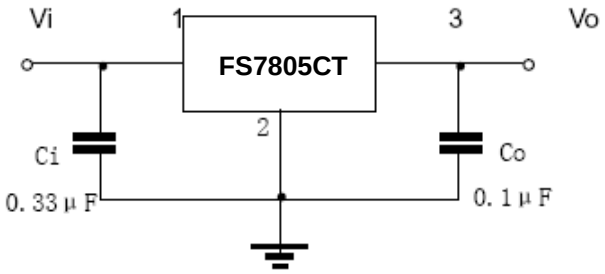
ABSOLUTE MAXIMUM RATINGS(Operating temperature range applies unless otherwise specified)

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

ELECTRICAL CHARACTERISTICS(Vi=10V,Io=500mA,0℃<Tj<125℃,Ci=0.33μF,Co=0.1μF, unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Output voltage	Vo	T_J=25℃	4.8	5.0	5.2	V
		7V≤V_i≤20V, Io=5mA-1A, P < 15W	4.75	5.00	5.25	V
Load Regulation	△Vo	T_J=25℃, Io=5mA-1.5A		9	100	mV
		T_J=25℃, Io=250mA-750mA		4	50	mV
Line regulation	△Vo	7V≤V_i≤25V, T_J=25℃		4	100	mV
		8V≤V_i≤12V, T_J=25℃		1.6	50	mV
Quiescent Current	Iq	T_J=25℃		5	8	mA
Quiescent Current Change	△Iq	7V≤V_i≤25V		0.3	1.3	mA
		5mA≤I_O≤1A		0.03	0.5	mA
Output Noise Voltage	V_N	10Hz≤f≤100KHz		42		uV
Output voltage drift	△Vo/△T	I_O=5mA		-0.8		mV/℃
Ripple Rejection	RR	8V≤V_i≤18V,f=120Hz, T_J=25℃	62	73		dB
Dropout Voltage	Vd	T_J=25℃, Io=1A		2		V
Output resistance	R_O	f=1KH_Z		15		mΩ
Short Circuit Current	Isc	Vi=35V, T_J=25℃		230		mA
Peak Current	Ipk	T_J=25℃		2.2		A

TYPICAL APPLICATION



Typical Characteristics

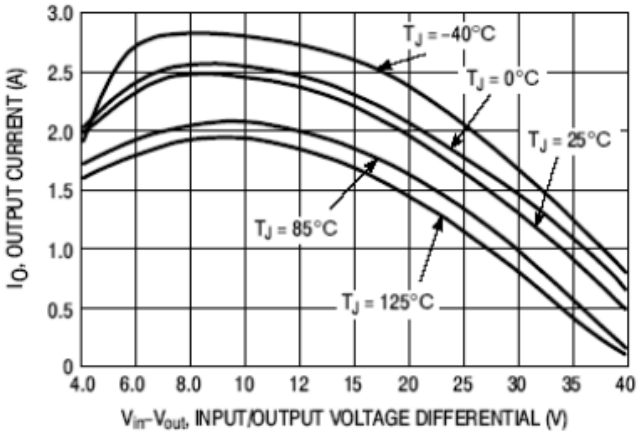


Figure 1 Peak Output Current as a Function of Input/Output Differential Voltage

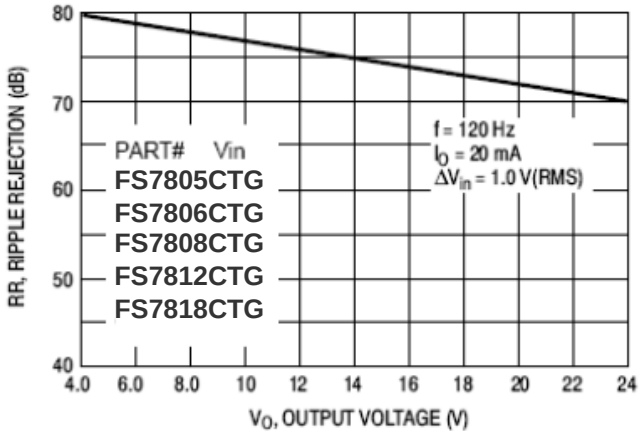


Figure 2 Ripple Rejection as a Function of Output Voltages

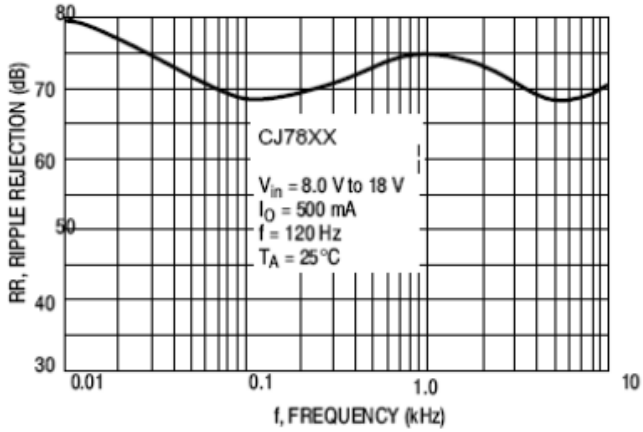


Figure 3 Ripple Rejection as a Function of Frequency

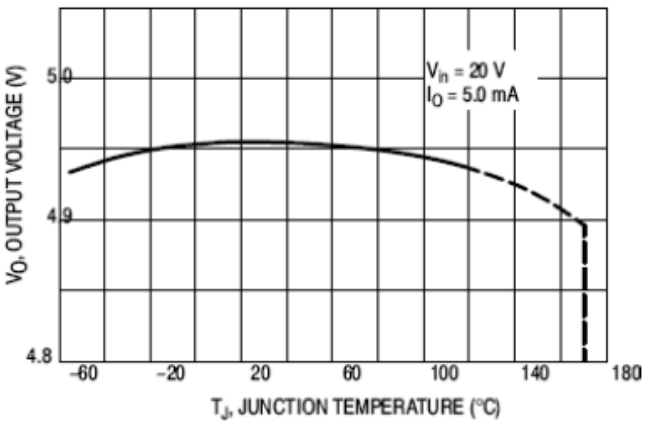


Figure 4 Output Voltage as a Function of Junction Temperature

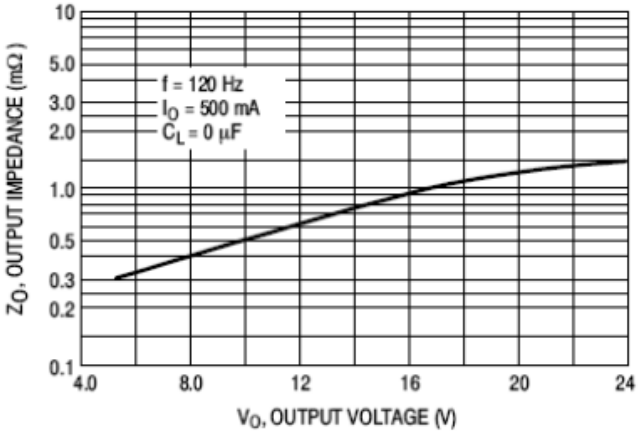


Figure 5 Output Impedance as a Function of Output Voltage

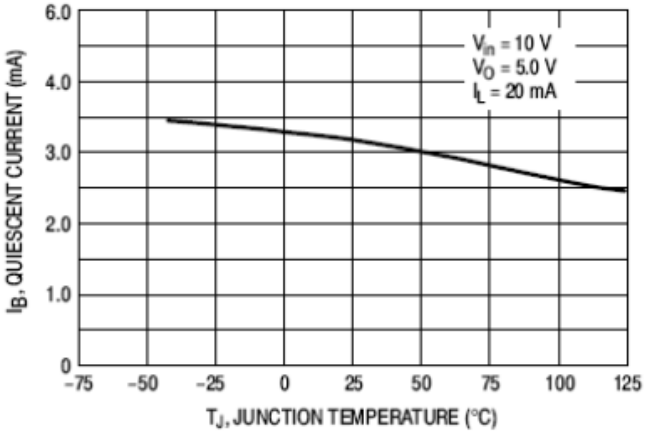


Figure 6 Quiescent Current as a Function of Temperature