VS7805F Three-terminal positive voltage regulator

FEATURES

- Maximum output current
  I_{OM}: 1.5 A
- Output voltage
  V_O: 5V
- Continuous total dissipation
  P_D: 1.5 W (T_a= 25 ℃)

TO-220F

1.IN
2.GND
3.OUT

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

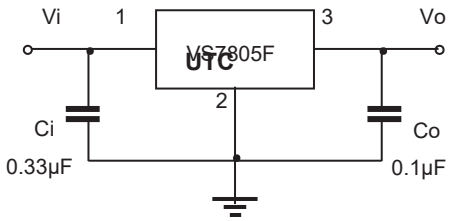
Parameter	Symbol	Value	Unit
Input Voltage	V_i	35	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	66.7	℃/W
Operating Junction Temperature Range	T_{OPR}	-40~+125	℃
Storage Temperature Range	T_{STG}	-65~+150	℃

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JINCTION TEMPERATURE (Vi=10V,Io=500mA,Ci=0.33μF,Co=0.1μF, unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Output voltage	Vo	T_J=25℃	4.85	5.0	5.15	V
		7V≤V_i≤20V, Io=5mA-1A	4.75	5.00	5.25	V
Load Regulation	△Vo	Io=5mA-1.5A,T_J=25℃		9	100	mV
		Io=250mA-750mA,T_J=25℃		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 ,T_J=25℃		42		μV/Vo
Output voltage drift	△Vo/△T	I_O=5mA		-1.1		mV/℃
Ripple Rejection	RR	8V≤V_i≤18V,f=120Hz	62	73		dB
Dropout Voltage	Vd	Io=1A ,T_J=25℃		2		V
Output resistance	R_O	f=1KH_Z ,T_J=25℃		10		mΩ
Short Circuit Current	Isc	T_J=25℃		230		mA
Peak Current	Ipk	T_J=25℃		2.2		A

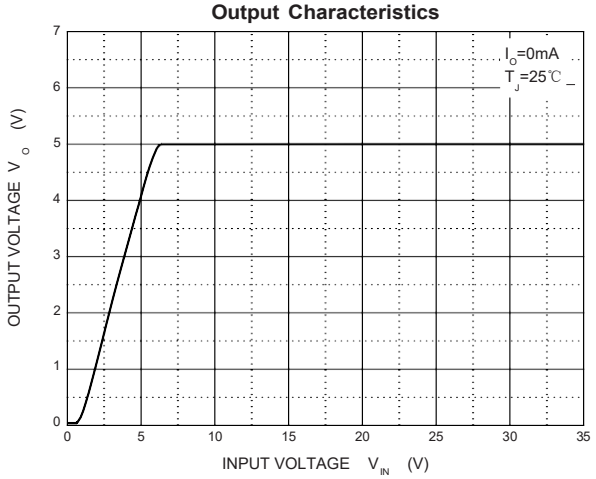
* Pulse test.

TYPICAL APPLICATION

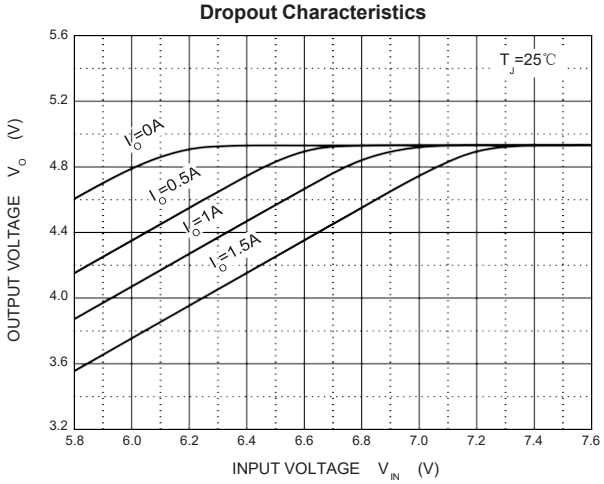


Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

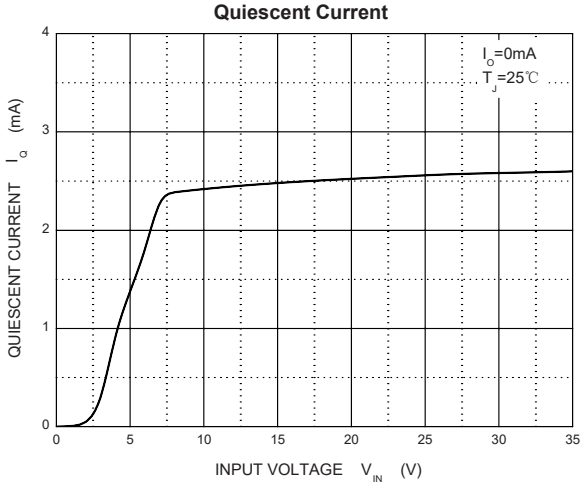
Output Characteristics



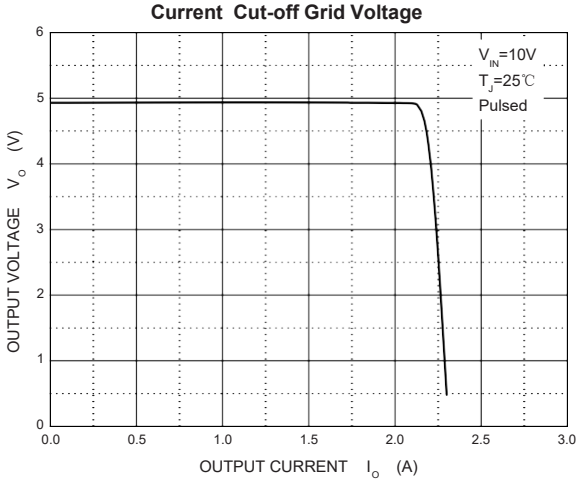
Dropout Characteristics



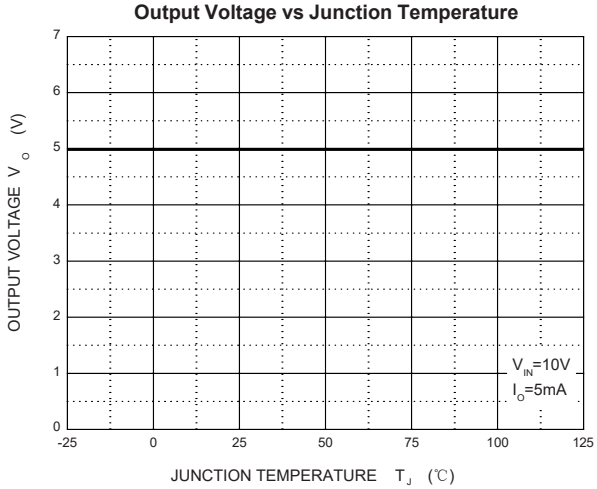
Quiescent Current



Current Cut-off Grid Voltage



Output Voltage vs Junction Temperature



Power Derating Curve