VS7806 Three-terminal positive voltage regulator

FEATURES

- Maximum output current
  I_{OM}:1.5 A
- Output voltage
  V_O: 6V
- Continuous total dissipation
  P_D: 1.5W (T_a= 25 ℃)

TO-220C

1.IN
2.GND
3.OUT

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

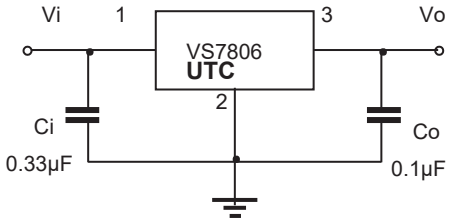
Parameter	Symbol	Value	Unit
Input Voltage	V_i	35	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	66.7	℃/W
Operating Junction Temperature Range	T_{OPR}	-40~+125	℃
Storage Temperature Range	T_{STG}	-65~+150	℃

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JINCTION TEMPERATURE (Vi=11V,Io=500mA,Ci=0.33μF, Co=0.1μF, unless otherwise specified)

Pa rameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Output voltage	Vo	T_J=25℃	5.82	6	6.18	V
		8V≤V_i≤21V, Io=5mA-1A	5.7	6	6.3	V
Load Regulation	△Vo	Io=5mA-1.5A,T_J=25℃		14	120	mV
		Io=250mA-750mA,T_J=25℃		4	60	mV
Line regulation	△Vo	8V≤V_i≤25V,T_J=25℃		5	120	mV
		9V≤V_i≤13V,T_J=25℃		1.5	60	mV
Quiescent Current	Iq	T_J=25℃		4.3	8	mA
Quiescent Current Change	△Iq	8V≤V_i≤25V			1.3	mA
		5mA≤I_O≤1A			0.5	mA
Output voltage drift	△Vo/△T	I_O=5mA		-0.8		mV/℃
Output Noise Voltage	V_N	10Hz≤f≤100KHz ,T_J=25℃		45		μV/Vo
Ripple Rejection	RR	9V≤V_i≤19V,f=120Hz	59	75		dB
Dropout Voltage	Vd	Io=1A		2		V
Output resistance	R_O	f=1KHz ,T_J=25℃		10		mΩ
Short Circuit Current	Isc	T_J=25℃		550		mA
Peak Current	Ipk	T_J=25℃		2.2		A

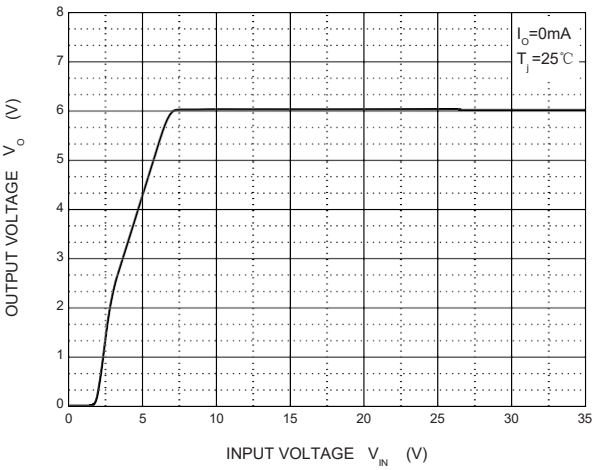
* Pulse test.

TYPICAL APPLICATION

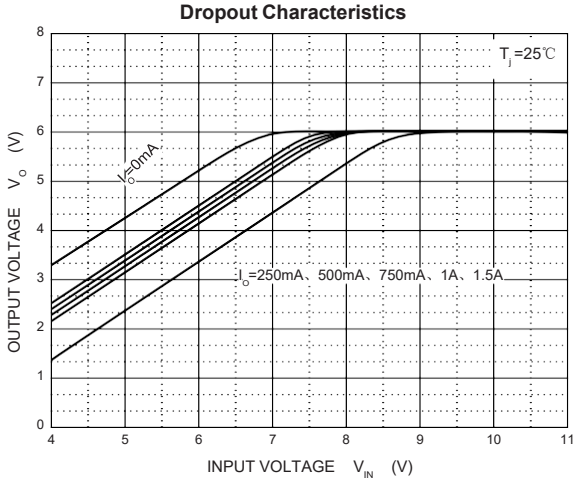


Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

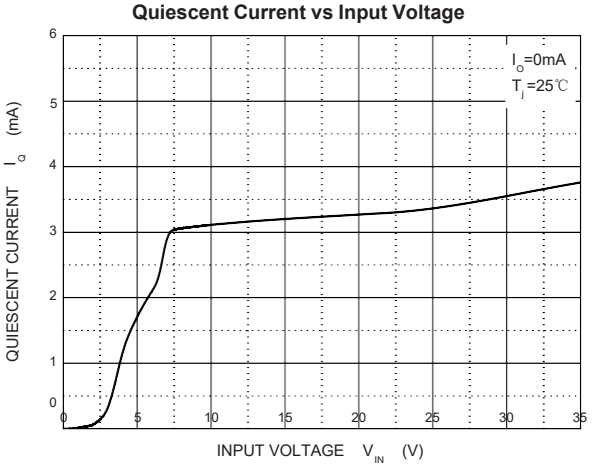
Output Characteristics



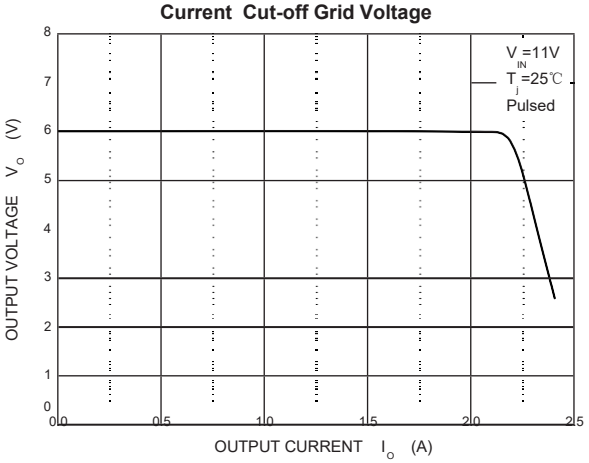
Dropout Characteristics



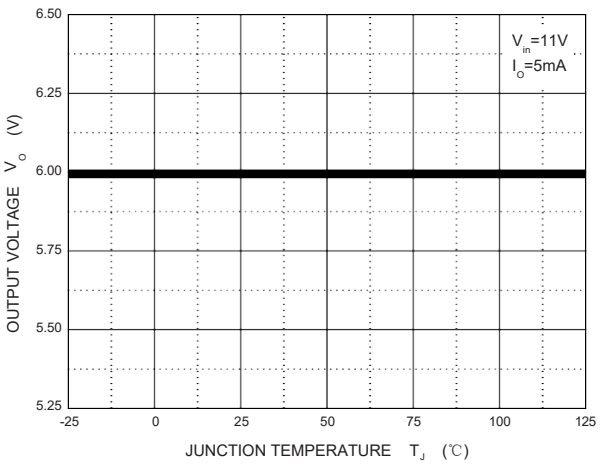
Quiescent Current vs Input Voltage



Current Cut-off Grid Voltage



Output Voltage vs Ambient Temperature



Power Derating Curve