HS7806 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: 6V
- Continuous total dissipation
  P_D: 1.5W (T_a= 25 ℃)

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

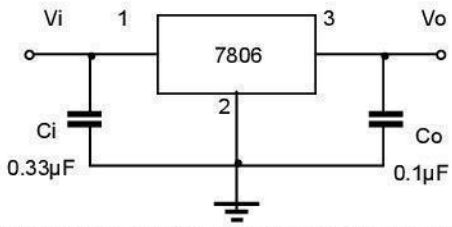
Parameter	Symbol	Value	Unit
Input Voltage	V_i	35	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	66.7	℃/W
Operating Junction Temperature Range	T_{OPR}	-25~+125	℃
Storage Temperature Range	T_{STG}	-65~+150	℃

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		25℃	5.75	6	6.25	V
		8V≤V_i≤21V, Io=5mA-1A	-25-125℃	5.7	6	6.3	V
Load Regulation	△Vo	Io=5mA-1.5A	25℃		14	120	mV
		Io=250mA-750mA	25℃		4	60	mV
Line regulation	△Vo	8V≤V_i≤25V	25℃		5	120	mV
		9V≤V_i≤13V	25℃		1.5	60	mV
Quiescent Current	Iq		25℃		4.3	8	mA
Quiescent Current Change	△Iq	8V≤V_i≤25V	-25-125℃			1.3	mA
		5mA≤I_O≤1A	-25-125℃			0.5	mA
Output voltage drift	△Vo/△T	I_O=5mA	0-125℃		-0.8		mV/℃
Output Noise Voltage	V_N	10Hz≤f≤100KHz	25℃		45		μV/Vo
Ripple Rejection	RR	9V≤V_i≤19V,f=120Hz	-25-125℃	59	75		dB
Dropout Voltage	Vd	Io=1A	25℃		2		V
Output resistance	R_O	f=1KH_Z	25℃		10		mΩ
Short Circuit Current	Isc		25℃		550		mA
Peak Current	Ipk		25℃		2.2		A

* Pulse test.

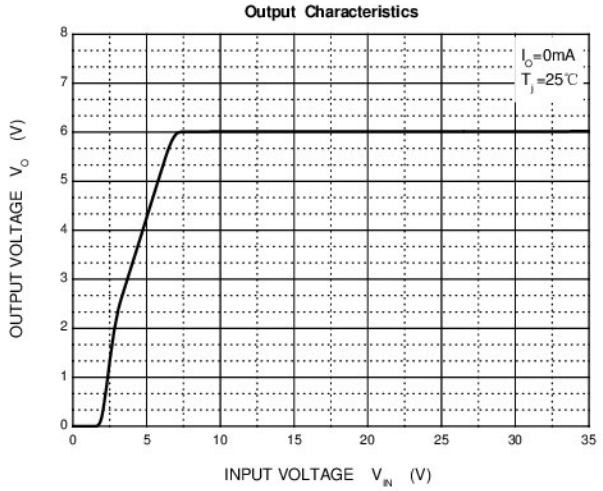
TYPICAL APPLICATION



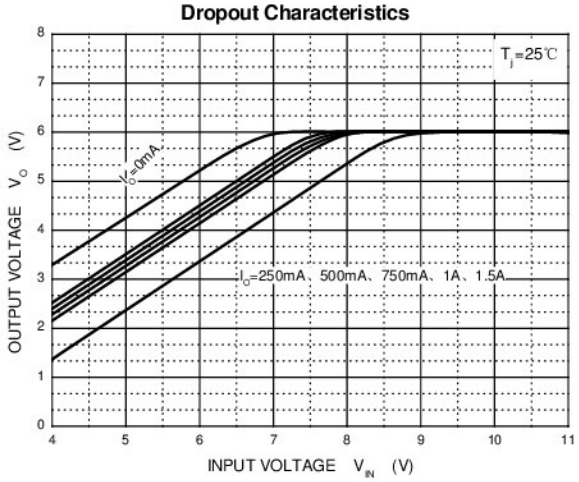
Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

Typical Characteristics

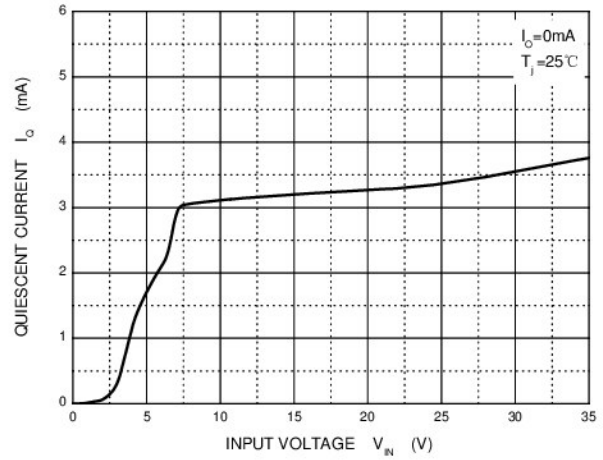
Output Characteristics



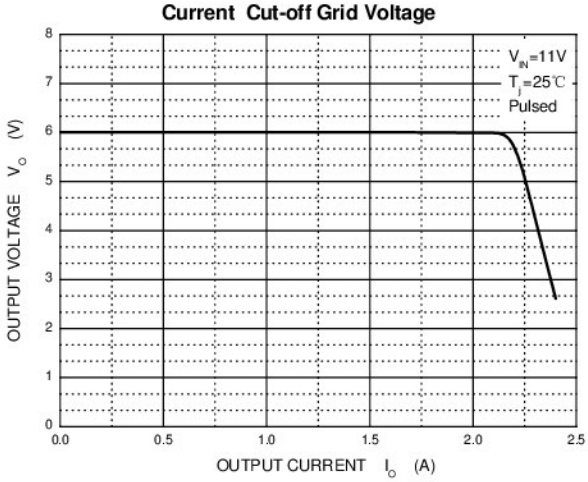
Dropout Characteristics



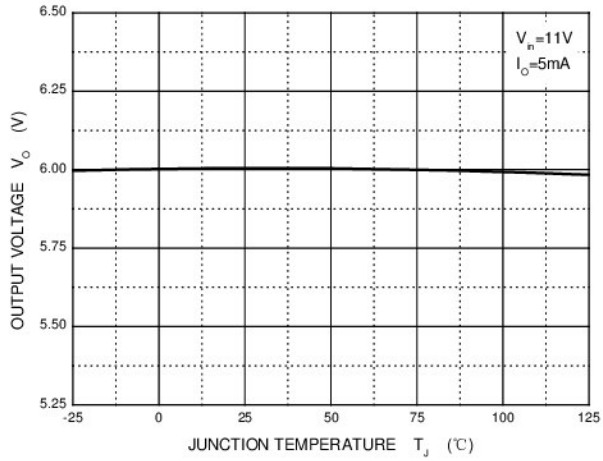
Quiescent Current vs Input Voltage



Current Cut-off Grid Voltage



Output Voltage vs Ambient Temperature



Power Derating Curve