VS7815 Three-terminal positive voltage regulator

FEATURES

- Maximum output current
  I_{OM}: 1.5 A
- Output voltage
  V_O: 15 V
- Continuous total dissipation
  P_D: 1.25 W (T_a= 25 ℃)

TO-252

1.IN
2.GND
3.OUT

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

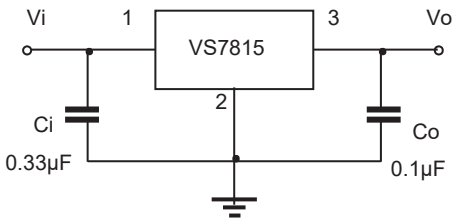
Parameter	Symbol	Value	Unit
Input Voltage	V_i	35	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	80	℃/W
Operating Junction Temperature Range	T_{OPR}	-40~+125	℃
Storage Temperature Range	T_{STG}	-65~+150	℃

ELECTRICAL CHARACTERISTICS(Vi=23V,Io=500mA,-25℃<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℃	14.55	15	15.45	V
		17.5V≤V_i≤30V, Io=5mA-1A,P≤15W	14.25	15	15.75	V
Load Regulation	ΔVo	T_J=25℃, Io=5mA-1.5A		12	300	mV
		T_J=25℃, Io=250mA-750mA		3	150	mV
Line regulation	ΔVo	17.5V≤V_i≤30V, T_J=25℃		12	300	mV
		20V≤V_i≤26V, T_J=25℃		4	150	mV
Quiescent Current	Iq	T_J=25℃		4.3	8	mA
Quiescent Current Change	ΔIq	17.5V≤V_i≤30V			1	mA
	ΔIq	5mA≤I_O≤1A			0.5	mA
Output voltage drift	△Vo/△T	I_O=5mA		-1		mV/℃
Output Noise Voltage	V_N	10Hz≤f≤100KHz		90		μV/Vo
Ripple Rejection	RR	18.5V≤V_i≤28.5V,f=120Hz, T_J=25℃	54	70		dB
Dropout Voltage	Vd	T_J=25℃, Io=1A		2		V
Output resistance	R_O	f=1KH_Z		19		mΩ
Short Circuit Current	Isc	T_J=25℃		230		mA
Peak Current	Ipk	T_J=25℃		2.1		A

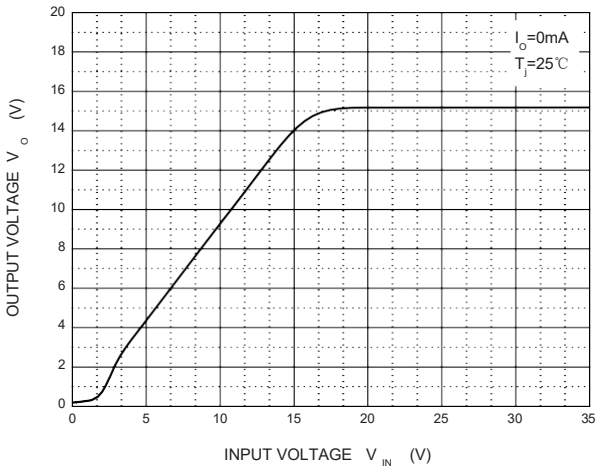
* Pulse test.

TYPICAL APPLICATION

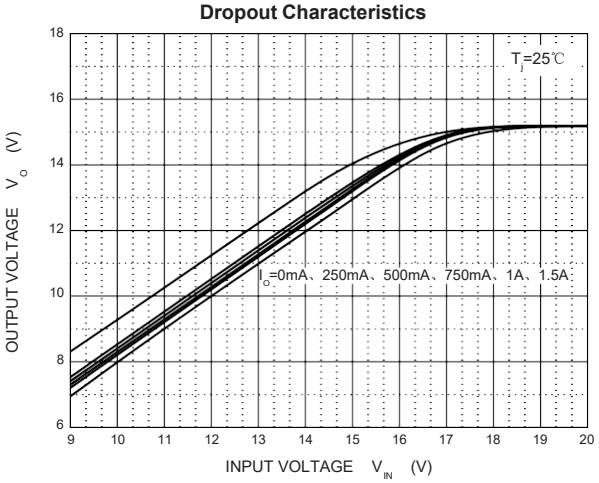


Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

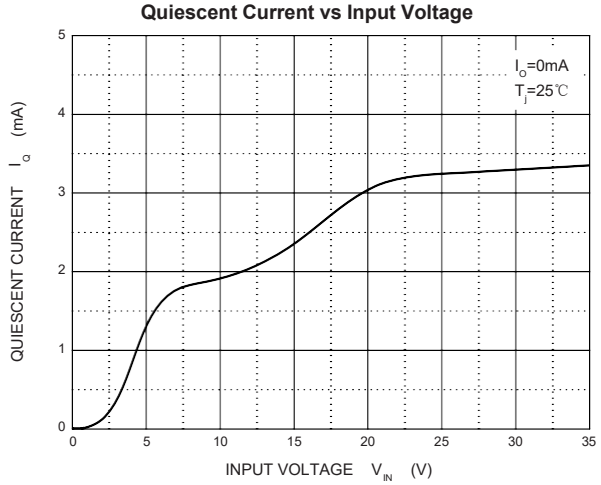
Output Characteristics



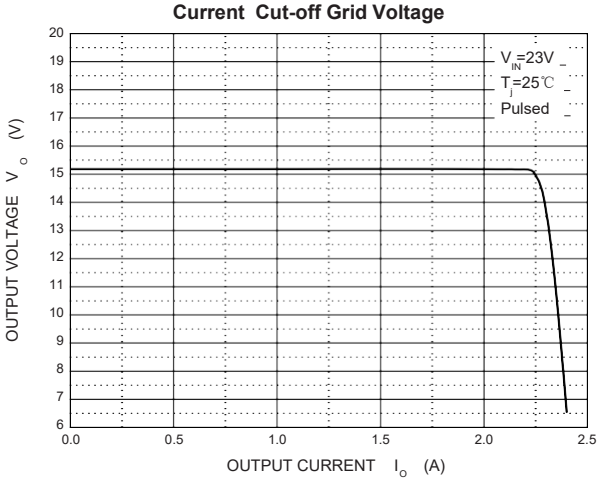
Dropout Characteristics



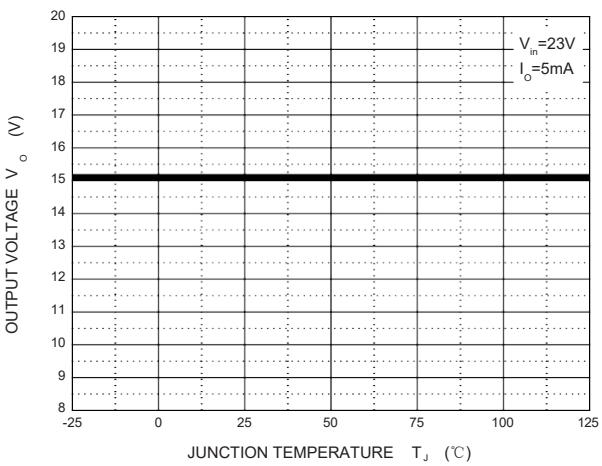
Quiescent Current vs Input Voltage



Current Cut-off Grid Voltage



Output Voltage vs Junction Temperature



Power Derating Curve