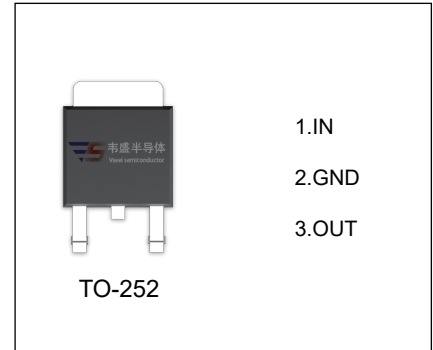


VS7806 Three-terminal positive voltage regulator

FEATURES

- Maximum output current
 I_{OM} : 1.5 A
- Output voltage
 V_O : 6V
- Continuous total dissipation
 P_D : 1.25 W ($T_a = 25^\circ\text{C}$)



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

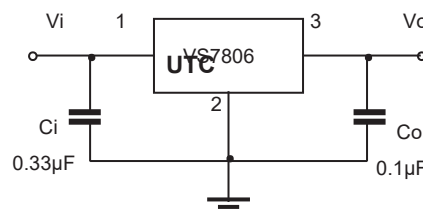
Parameter	Symbol	Value	Unit
Input Voltage	V_i	35	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	80	$^\circ\text{C/W}$
Operating Junction Temperature Range	T_{OPR}	-40~+125	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-65~+150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE ($V_i=11\text{V}$, $I_o=500\text{mA}$, $C_i=0.33\mu\text{F}$, $C_o=0.1\mu\text{F}$, unless otherwise specified)

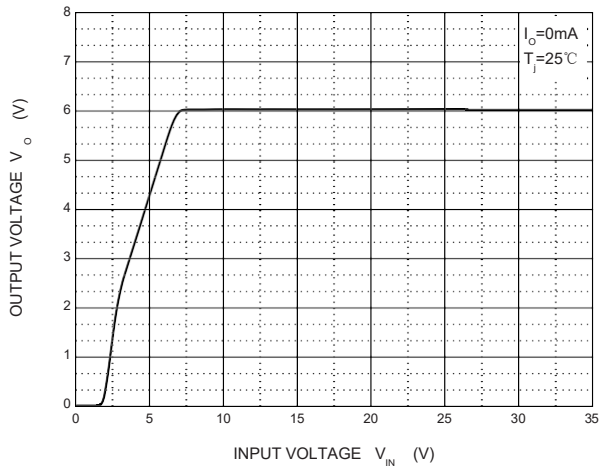
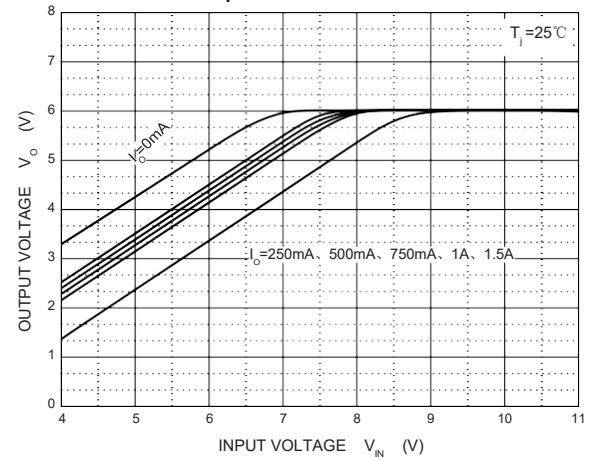
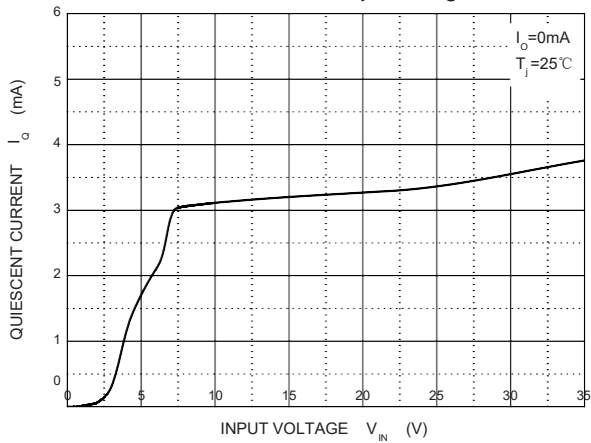
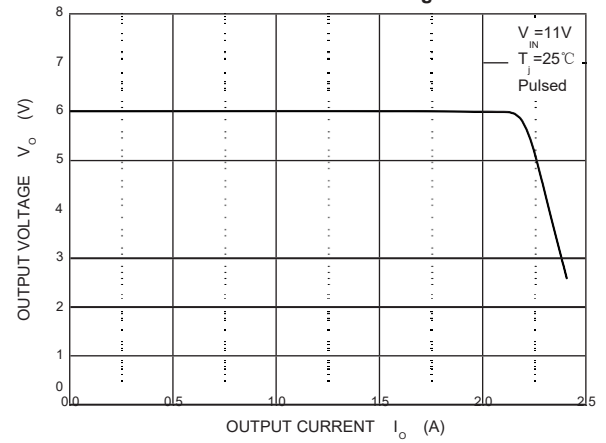
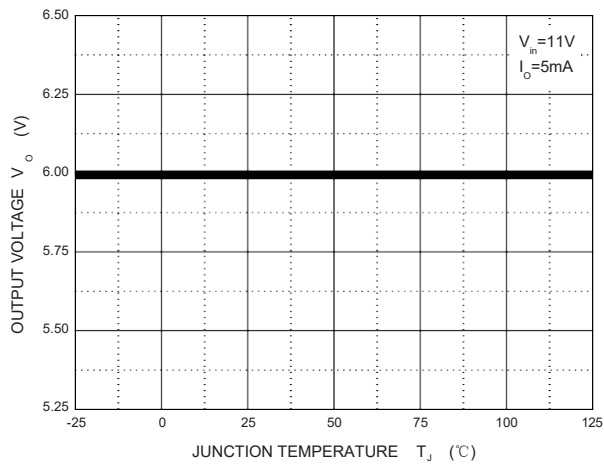
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Output Voltage	V_o	$T_J=25^\circ\text{C}$	5.82	6	6.18	V
		$8\text{V} \leq V_i \leq 21\text{V}$, $I_o=5\text{mA}-1\text{A}$	5.7	6	6.3	V
Load Regulation	ΔV_o	$I_o=5\text{mA}-1.5\text{A}$, $T_J=25^\circ\text{C}$		14	120	mV
		$I_o=250\text{mA}-750\text{mA}$, $T_J=25^\circ\text{C}$		4	60	mV
Line Regulation	ΔV_o	$8\text{V} \leq V_i \leq 25\text{V}$, $T_J=25^\circ\text{C}$		5	120	mV
		$9\text{V} \leq V_i \leq 13\text{V}$, $T_J=25^\circ\text{C}$		1.5	60	mV
Quiescent Current	I_q	$T_J=25^\circ\text{C}$, $T_J=25^\circ\text{C}$		4.3	8	mA
Quiescent Current Change	ΔI_q	$8\text{V} \leq V_i \leq 25\text{V}$			1.3	mA
		$5\text{mA} \leq I_o \leq 1\text{A}$			0.5	mA
Output voltage drift	$\Delta V_o / \Delta T$	$I_o=5\text{mA}$		-0.8		mV/ $^\circ\text{C}$
Output Noise Voltage	V_N	$10\text{Hz} \leq f \leq 100\text{KHz}$, $T_J=25^\circ\text{C}$		45		$\mu\text{V}/V_o$
Ripple Rejection	RR	$9\text{V} \leq V_i \leq 19\text{V}$, $f=120\text{Hz}$	59	75		dB
Dropout Voltage	V_d	$I_o=1\text{A}$, $T_J=25^\circ\text{C}$		2		V
Output resistance	R_o	$f=1\text{KHz}$, $T_J=25^\circ\text{C}$		10		m Ω
Short Circuit Current	I_{sc}	$T_J=25^\circ\text{C}$		550		mA
Peak Current	I_{pk}	$T_J=25^\circ\text{C}$		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
