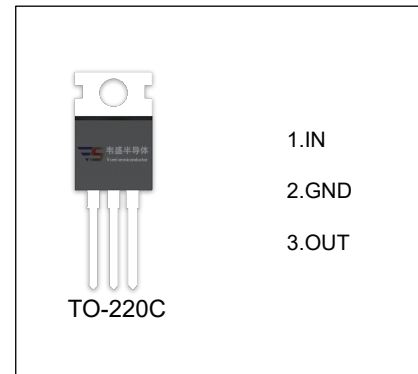


VS7805 Three-terminal positive voltage regulator

FEATURES

- Maximum output current
 I_{OM} : 1.5 A
- Output voltage
 V_O : 5V
- Continuous total dissipation
 P_D : 1.5 W ($T_a = 25^\circ\text{C}$)



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

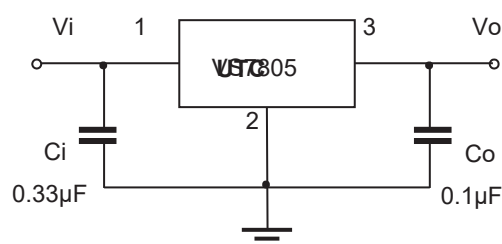
Parameter	Symbol	Value	Unit
Input Voltage	V_i	35	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	83.3	$^\circ\text{C/W}$
Operating Junction Temperature	T_J	150	$^\circ\text{C}$
Operating Temperature	T_{OPR}	-30~+125	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-65~+150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE ($V_i=10\text{V}$, $I_o=500\text{mA}$, $C_i=0.33\mu\text{F}$, $C_o=0.1\mu\text{F}$, unless otherwise specified)

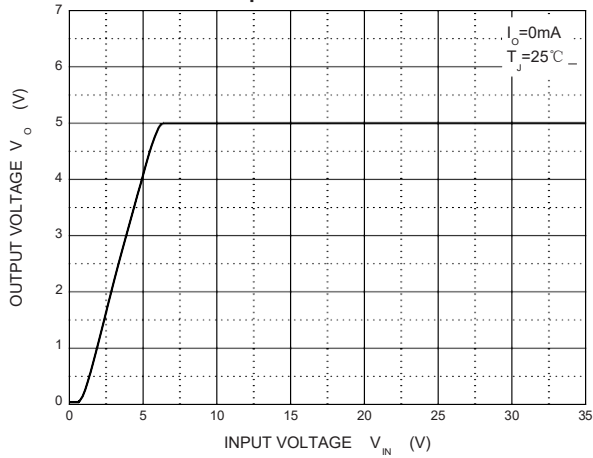
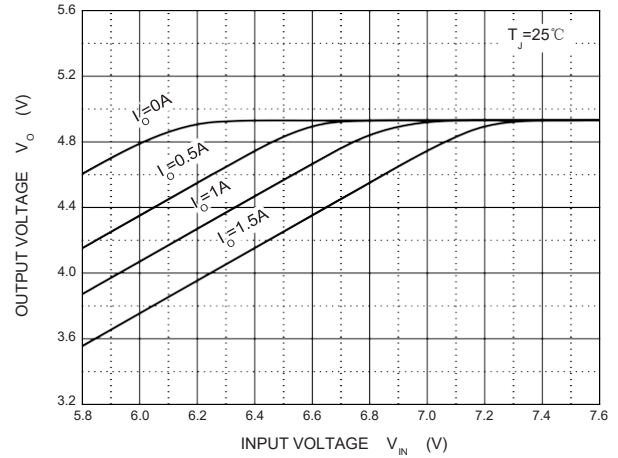
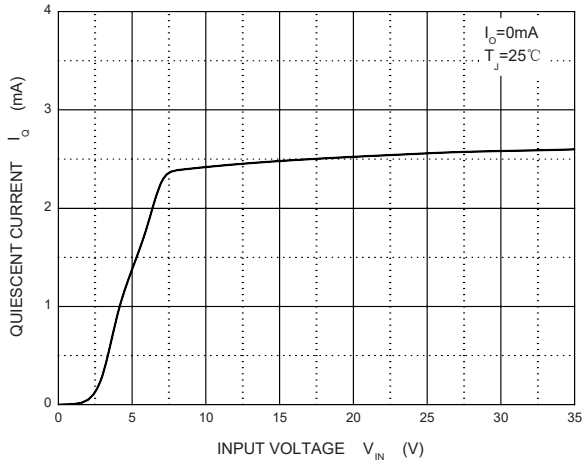
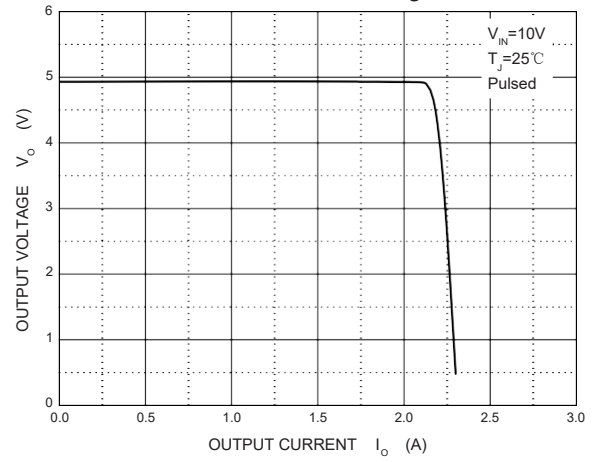
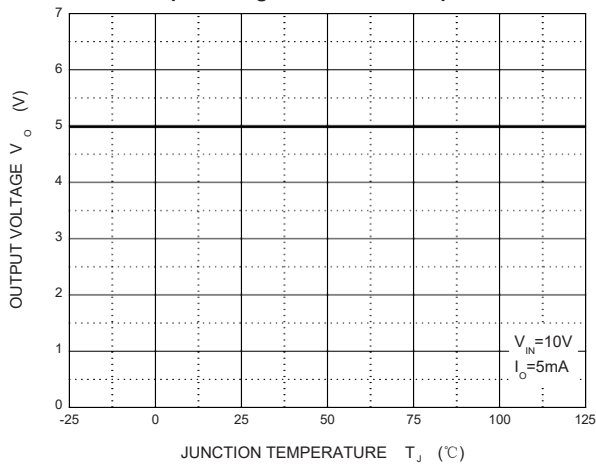
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Output voltage	V_o	$T_J=25^\circ\text{C}$	4.85	5.0	5.15	V
		$7\text{V} \leq V_i \leq 20\text{V}$, $I_o=5\text{mA}-1\text{A}$	4.75	5.00	5.25	V
Load Regulation	ΔV_o	$I_o=5\text{mA}-1.5\text{A}$, $T_J=25^\circ\text{C}$		9	100	mV
		$I_o=250\text{mA}-750\text{mA}$, $T_J=25^\circ\text{C}$		4	50	mV
Line regulation	ΔV_o	$7\text{V} \leq V_i \leq 25\text{V}$, $T_J=25^\circ\text{C}$		4	100	mV
		$8\text{V} \leq V_i \leq 12\text{V}$, $T_J=25^\circ\text{C}$		1.6	50	mV
Quiescent Current	I_q	$T_J=25^\circ\text{C}$		5	8	mA
Quiescent Current Change	ΔI_q	$7\text{V} \leq V_i \leq 25\text{V}$		0.3	1.3	mA
		$5\text{mA} \leq I_o \leq 1\text{A}$		0.03	0.5	mA
Output Noise Voltage	V_N	$10\text{Hz} \leq f \leq 100\text{kHz}$, $T_J=25^\circ\text{C}$		42		$\mu\text{V}/V_o$
Output voltage drift	$\Delta V_o/\Delta T$	$I_o=5\text{mA}$		-1.1		$\text{mV}/^\circ\text{C}$
Ripple Rejection	RR	$8\text{V} \leq V_i \leq 18\text{V}$, $f=120\text{Hz}$	62	73		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		$\text{m}\Omega$
Short Circuit Current	I_{sc}	$T_J=25^\circ\text{C}$		230		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

Current Cut-off Grid Voltage

Output Voltage vs Junction Temperature

Power Derating Curve
