

7812 Three-terminal positive voltage regulator

FEATURES

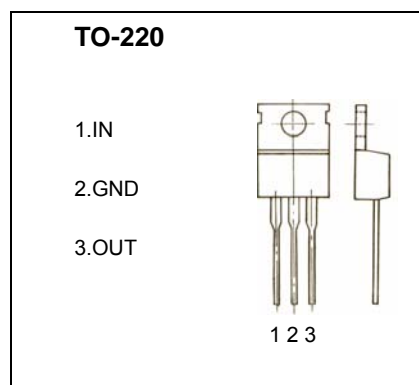
Maximum Output current I_{OM} : 1.5 A

Output voltage V_o : 12 V

Continuous total dissipation

P_D : 2 W ($T_a = 25^\circ\text{C}$)

15 W ($T_C = 25^\circ\text{C}$)



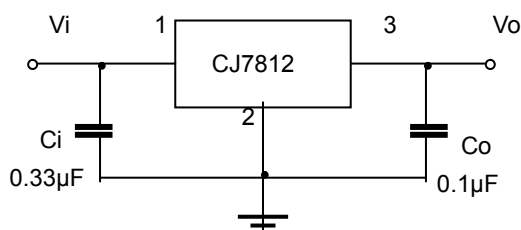
ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

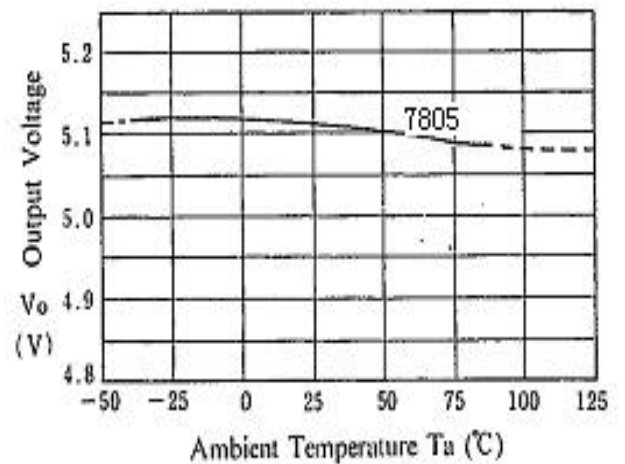
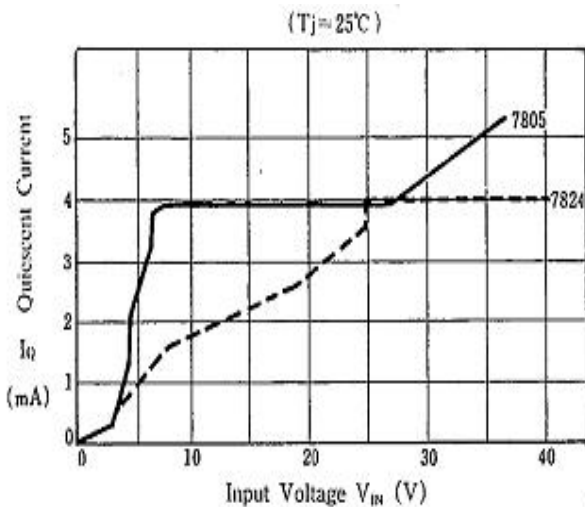
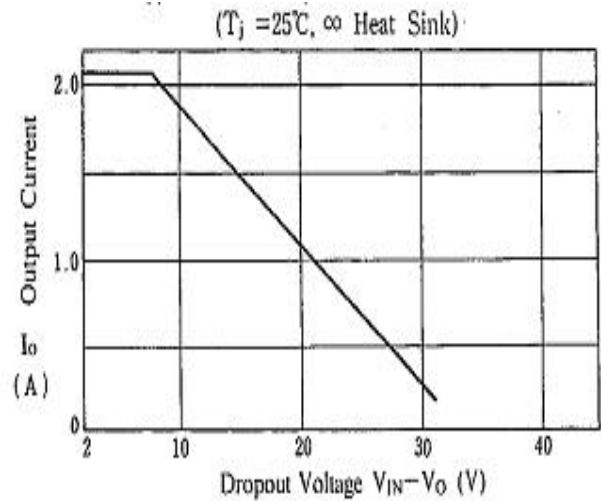
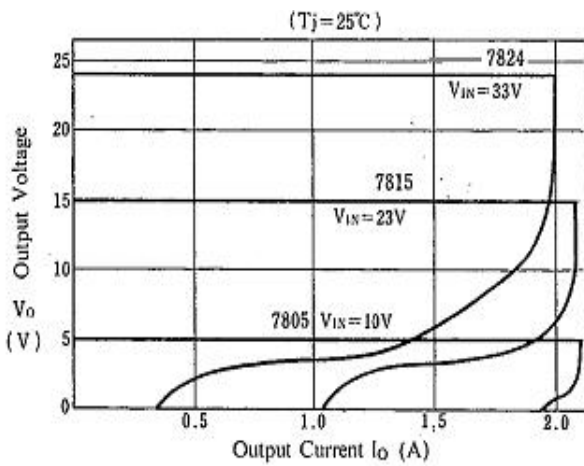
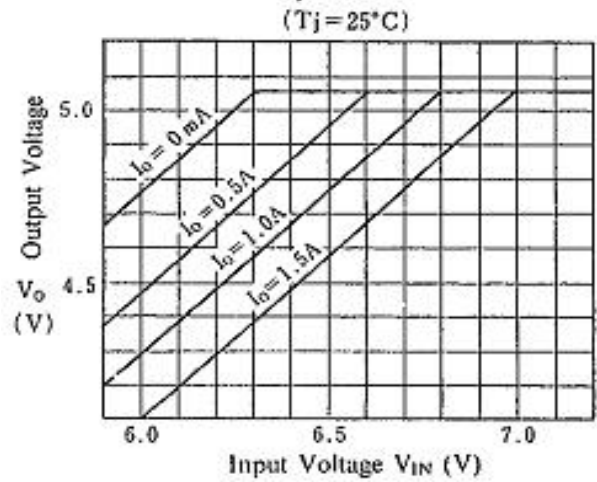
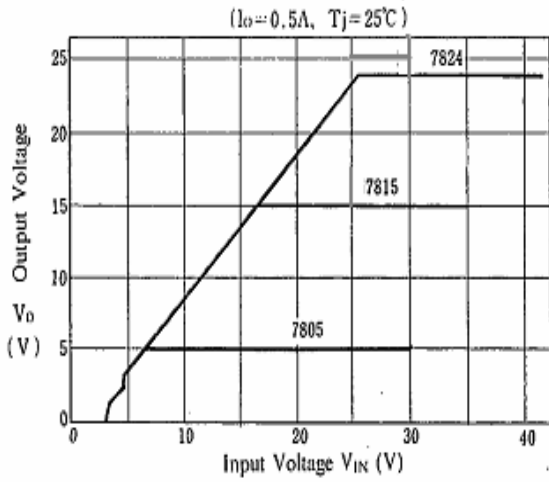
Parameter	Symbol	Value	Unit
Input Voltage	V_i	35	V
Thermal resistance junction-air	$R_{\theta JA}$	65	$^\circ\text{C/W}$
Thermal resistance junction-cases	$R_{\theta JC}$	5	$^\circ\text{C/W}$
Operating Junction Temperature Range	T_{OPR}	0-125	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-65-150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($V_i=19\text{V}$, $I_o=500\text{mA}$, $C_i=0.33\mu\text{F}$, $C_o=0.1\mu\text{F}$, unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Output voltage	V_o	25°C	11.5	12.0	12.5	V
		$I_o = 5.0\text{mA} - 1.0\text{A}$, $P \leq 15\text{W}$ $14.5\text{V} \leq V_i \leq 27\text{V}$	0-125 $^\circ\text{C}$	11.4	12	12.6
Load Regulation	ΔV_o	$14.5\text{V} \leq V_i \leq 30\text{V}$	25°C	10	240	mV
		$16\text{V} \leq V_i \leq 22\text{V}$	25°C	3	120	mV
Line regulation	ΔV_o	$I_o = 5\text{mA} - 1.5\text{A}$	25°C	12	240	mV
		$I_o = 250\text{mA} - 750\text{mA}$	25°C	4	120	mV
Quiescent Current	I_q	25°C		4.3	8	mA
Quiescent Current Change	ΔI_q	$5.0\text{mA} \leq I_o \leq 1.0\text{A}$	0-125 $^\circ\text{C}$		0.5	mA
		$14.5\text{V} \leq V_i \leq 30\text{V}$	0-125 $^\circ\text{C}$		1.0	mA
Output voltage drift	$\Delta V_o / \Delta T$	$I_o = 5\text{mA}$	0-125 $^\circ\text{C}$	-1		mV/ $^\circ\text{C}$
Output Noise Voltage	V_N	$f = 10\text{Hz to } 100\text{KHz}$	25°C	75		μV
Ripple Rejection	RR	$f = 120\text{Hz}$, $15\text{V} \leq V_i \leq 25\text{V}$	0-125 $^\circ\text{C}$	55	71	dB
Dropout Voltage	V_d	$I_o = 1.0\text{A}$	25°C	2		V
Output resistance	R_o	$f = 1\text{KHz}$	25°C	18		m Ω
Short Circuit Current	I_{sc}	25°C		350		mA
Peak Current	I_{pk}	25°C		2.2		A

TYPICAL APPLICATION





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