

Absolute Maximum Ratings**T_a=25°C**

Characteristic	Symbol	Rating	Unit
Input voltage	V _I	16	V
Power Dissipation	P _D	2.0	W
Junction Temperature	T _J	150	°C
Storage Temperature Range	T _{stg}	-55 ~ 150	°C

Device Selection Guide (NOTE1)

Device	Output Voltage
S1117API	Adjustable
S1117-15PI	1.5V
S1117-18PI	1.8V
S1117-25PI	2.5V
S1117-285PI	2.85V
S1117-33PI	3.3V
S1117-50PI	5.0V

Note 1 : Other fixed versions are available V_O=1.5V to 5V

Electrical Characteristics

(Electrical Characteristics at $T_J = 25^\circ\text{C}$ and $V_I = (V_O + 1.5\text{V})$, $I_L = 10\text{ mA}$, $C_O = 10\text{ }\mu\text{F}$ unless otherwise specified.)

Characteristic	Symbol	Device	Test Condition		Min	Typ	Max	Unit
Output Voltage	V_O	S1117A	$V_I = (V_O + 1.5\text{V}), I_O = 10\text{ mA}$		1.225	1.25	1.275	V
			$V_I = (V_O + 1.5\text{V})$ to 7V $I_O = 0$ to 1000 mA	*	1.200		1.300	
		S1117-15	$V_I = (V_O + 1.5\text{V}), I_O = 10\text{ mA}$		1.470	1.5	1.530	
			$V_I = (V_O + 1.5\text{V})$ to 7V $I_O = 0$ to 1000 mA	*	1.440		1.560	
		S1117-18	$V_I = (V_O + 1.5\text{V}), I_O = 10\text{ mA}$		1.764	1.8	1.836	
			$V_I = (V_O + 1.5\text{V})$ to 7V $I_O = 0$ to 1000 mA	*	1.728		1.872	
		S1117-25	$V_I = (V_O + 1.5\text{V}), I_O = 10\text{ mA}$		2.450	2.5	2.550	
			$V_I = (V_O + 1.5\text{V})$ to 7V $I_O = 0$ to 1000 mA	*	2.400		2.600	
		S1117-285	$V_I = (V_O + 1.5\text{V}), I_O = 10\text{ mA}$		2.793	2.85	2.907	
			$V_I = (V_O + 1.5\text{V})$ to 7V $I_O = 0$ to 1000 mA	*	2.736		2.964	
		S1117-33	$V_I = (V_O + 1.5\text{V}), I_O = 10\text{ mA}$		3.234	3.3	3.366	
			$V_I = (V_O + 1.5\text{V})$ to 7V $I_O = 0$ to 1000 mA	*	3.168		3.432	
		S1117-50	$V_I = (V_O + 1.5\text{V}), I_O = 10\text{ mA}$		4.900	5.0	5.100	
			$V_I = (V_O + 1.5\text{V})$ to 7V $I_O = 0$ to 1000 mA	*	4.800		5.200	
Line Regulation (Note2)	$\Delta V_{O(\Delta V_I)}$	All	$1.5\text{V} \leq V_I - V_O \leq 7\text{V}$ $I_O = 10\text{ mA}$		-	5	10	mV
Load Regulation (Note2)	$\Delta V_{O(\Delta I_L)}$	All	$V_I = (V_O + 1.5\text{V})$ $I_O = 10\text{ mA} \sim 1000\text{ mA}$		-	10	30	mV
Quiescent Current	I_{QC}	All	$V_I = V_O + 1.5\text{V}$ $V_{ADJ} = 0\text{V}$	*	-	7	13	mA
Minimum Load Current	$I_{L(MIN)}$	S1117A	$V_I = (V_O + 1.5\text{V}), V_O = 0\text{V}$	*		3	7	mA
Adjust Pin Current	I_{ADJ}	S1117A	$V_I = (V_O + 1.5\text{V})$ to 7V $I_O = 10\text{ mA}$	*		55	90	μA
Dropout Voltage (Note4)	V_{DROP}	All	$I_O = 1000\text{ mA}$	*	-	1.2	1.3	V
Ripple Rejection (Note3)	RR	All	$V_I - V_O = 1.5\text{V}, I_O = 1000\text{ mA}$ $V_{Ripple} = 1\text{V}_{P-P}, f = 120\text{ Hz}$		60	72	-	dB
Current Limit	I_{LIMIT}	All	$(V_I - V_O) = 1.5\text{V}$	*	1			A

The * denotes the specifications which apply over the full temperature range.

Note 2: Low duty pulse testing with Kelvin connections required.

Note 3: 120 Hz input ripple (C_{ADJ} for ADJ=25 μF)

Note 4: $\Delta V_O = 1\%$

■ Typical Applications

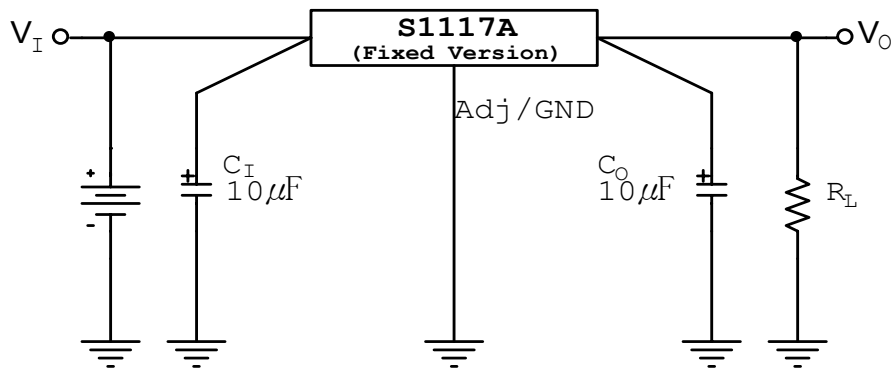
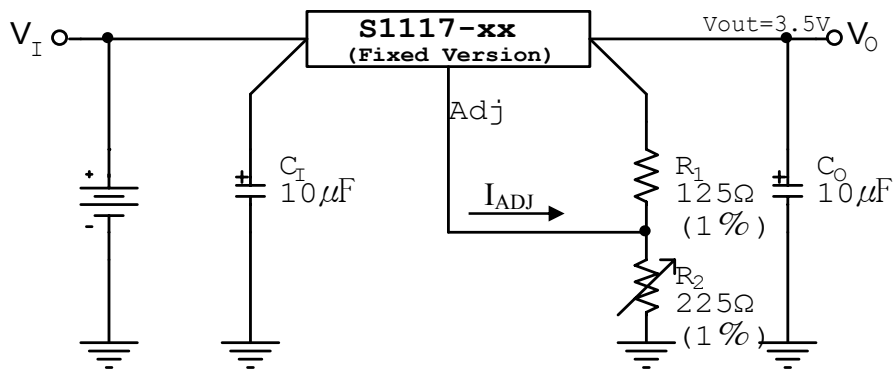


Fig. 1 Fixed Voltage Regulator



$$V_O = V_{ADJ} * (1 + R_2/R_1) + I_{ADJ} * R_2$$

Fig. 2 Adjustable Voltage Regulator

Notes:

- 1) C_I needed if device is far from filter capacitors
- 2) C_O minimum value required for stability

Electrical Characteristic Curves

Fig. 3 V_{DROP} vs. I_O

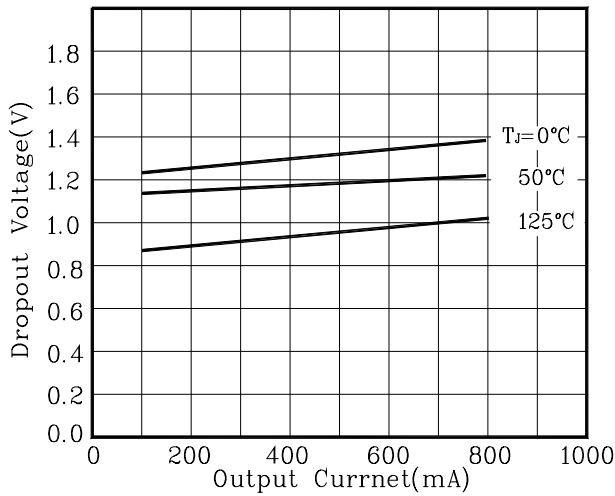


Fig. 4 ΔV_O vs. T_a

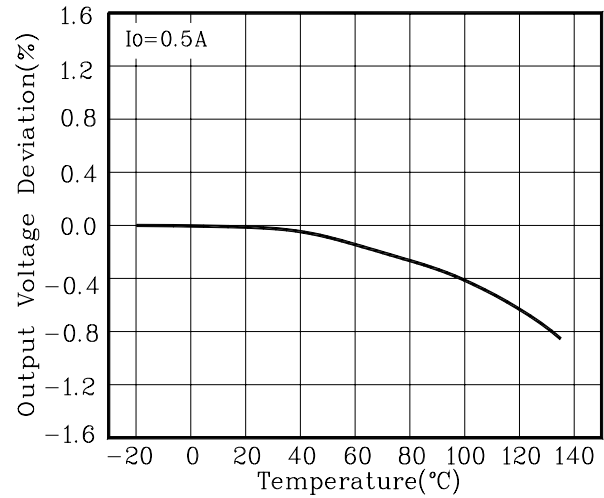


Fig. 5 RR vs. Frequency

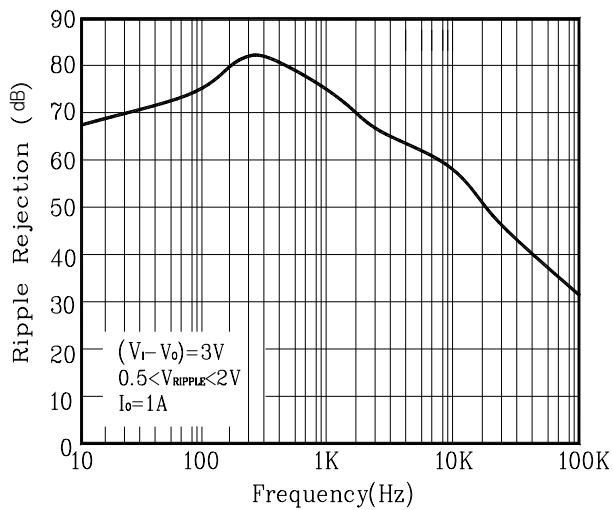


Fig. 6 Temperature Stability

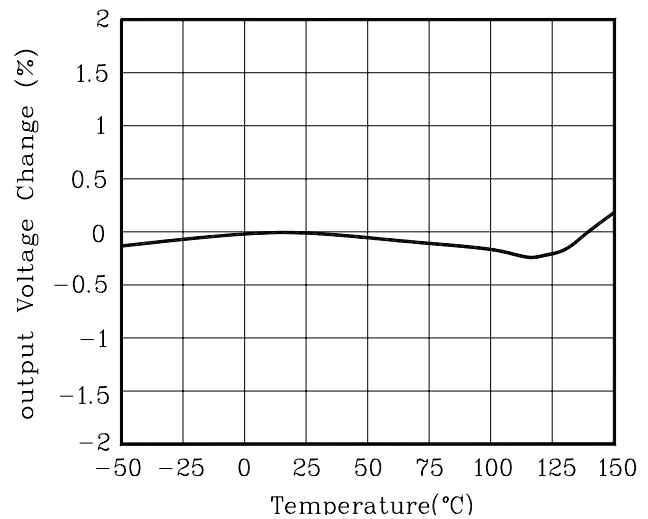


Fig. 7 I_{ADJ} vs. T_a

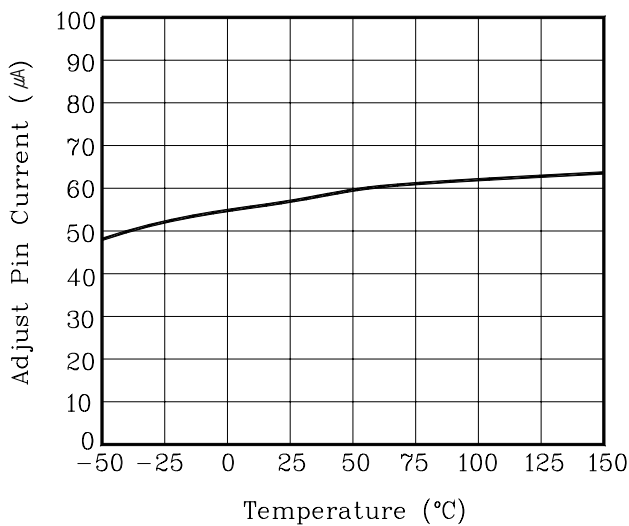
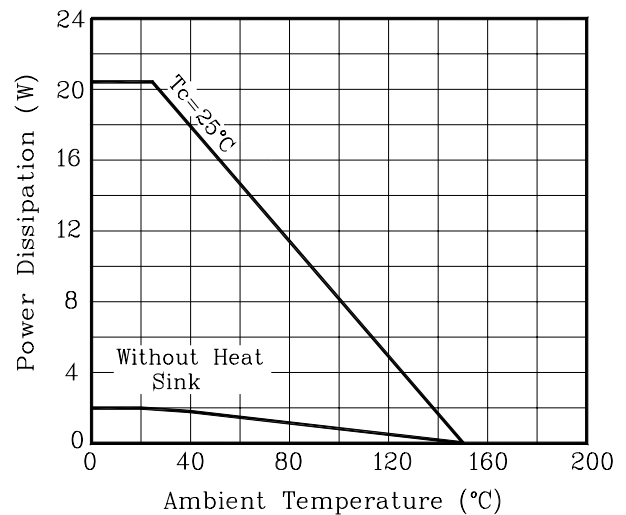


Fig. 8 P_D vs. T_a



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