

1.0A Low-Dropout Linear Regulator

General Description

The YFW1117-1.8 positive fixed regulators are designed to provide 1A with high efficiency. All internal circuitry is designed to operate down to 1.4V input to output differential. On-chip trimming adjusts the reference voltage to 1%. Current limit the typical value of 1.0A allows to minimize the stress on both the regulator and the power source circuitry under overload conditions

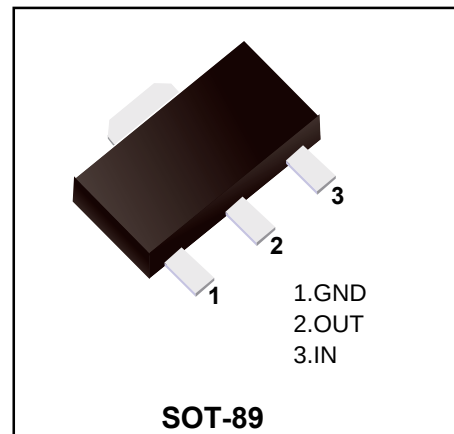
Features

- ◆ Available in 1.8V
- ◆ Space Saving SOT-89 Package
- ◆ Current Limiting and Thermal Protection
- ◆ Output Current 1A
- ◆ Temperature Range 0°C to 125°C
- ◆ Line Regulation 0.2% (Max)
- ◆ Load Regulation 0.4% (Max)

Applications

- ◆ High Efficiency Linear Regulators
- ◆ Post Regulators for Switching Supplies
- ◆ Adjustable Power Supply

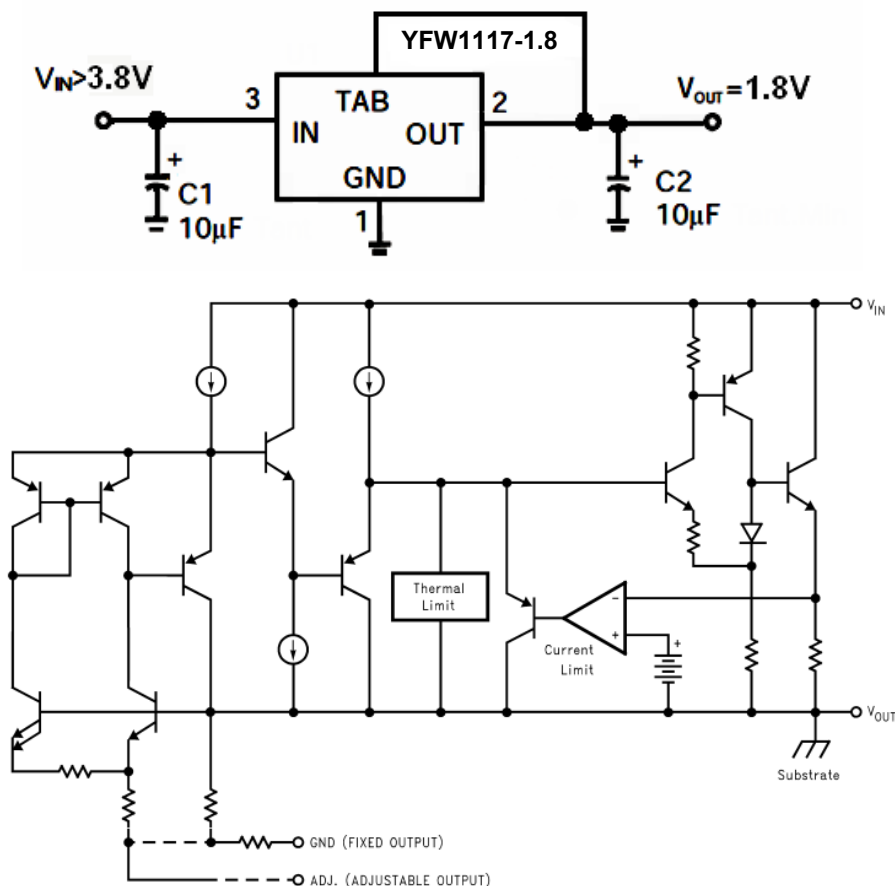
Typical Application



Marking Code

YFW1117-1.8

YFW1117 1.8



Absolute Maximum Ratings

Parameter	Symbol	Maximum	Unit
Power Dissipation	P_D	Internally Limited	W
Input Voltage	V_{IN}	15	V
Junction Temperature	T_J	150	°C
Operating Temperature	T_{OPR}	-40 ~ +125	°C
Storage Temperature	T_{STG}	-65 ~ +150	°C
Lead Temperature (Soldering, 10 sec)	T_{LEAD}	300	°C
Minimum ESD Rating (HBM)	V_{ESD}	2	kV

Electrical Characteristics

Electrical Characteristics at $I_{LOAD} = 0\text{ mA}$ and $T_J = +25^\circ\text{C}$ unless otherwise specified.

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Output Voltage	V_{OUT}	$I_{OUT}=10\text{mA}$, $V_{IN}=3.8\text{V}$ $T_J=25^\circ\text{C}$ $0 \leq I_{OUT} \leq 1\text{A}$, $1.4\text{V} \leq V_{IN} \leq 10\text{V}$	1.764 1.746	1.800 1.800	1.836 1.854	V
Line Regulation	ΔV_{OUT}	$I_{OUT} = 0\text{mA}$, $3.3\text{V} \leq V_{IN} \leq 8\text{V}$		1	6	mV
Load Regulation	ΔV_{OUT}	$V_{IN}=3.2\text{V}$, $0 \leq I_{OUT} \leq 1\text{A}$		1	10	mV
Dropout Voltage	V_D	$I_{OUT}=100\text{mA}$		1.00	1.10	V
		$I_{OUT}=500\text{mA}$		1.15	1.25	
		$I_{OUT}=1.0\text{A}$		1.20	1.30	
Current Limit	I_{LIMIT}	$V_{IN}=6.8\text{V}$	1		2	A
Quiescent Current	I_Q	$V_{IN} \leq 10\text{V}$		5	10	mA
Output Noise Voltage	eN	B=10Hz to 10KHz		10		μV
Supply Voltage Rejection	SVR	$I_{OUT}=40\text{mA}$, $f=120\text{Hz}$ $V_{IN}=5.5\text{V}$, $V_{RIPPLE}=1V_{PP}$	60		75	
Thermal Regulation		$T_A=25^\circ\text{C}$, 30ms Pulse		0.01	0.10	0%/W
GND Pin Current	I_G			60	120	μA

Typical Performance Characteristics

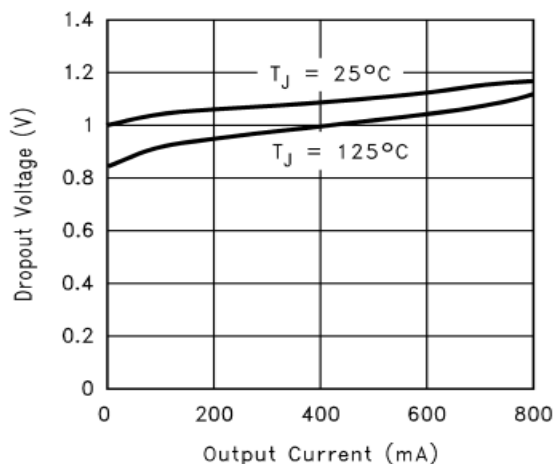


Figure 1. Dropout Voltage

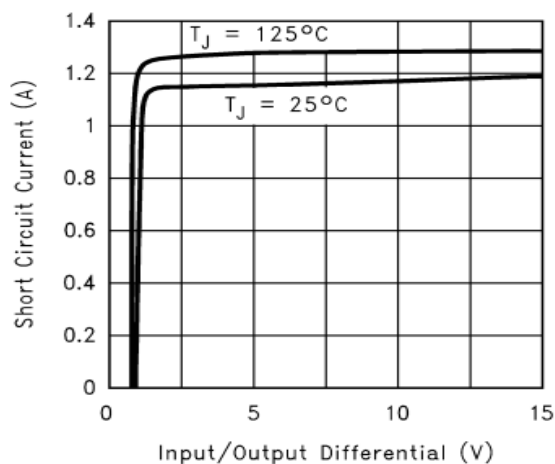


Figure 2. Short-Circuit Current

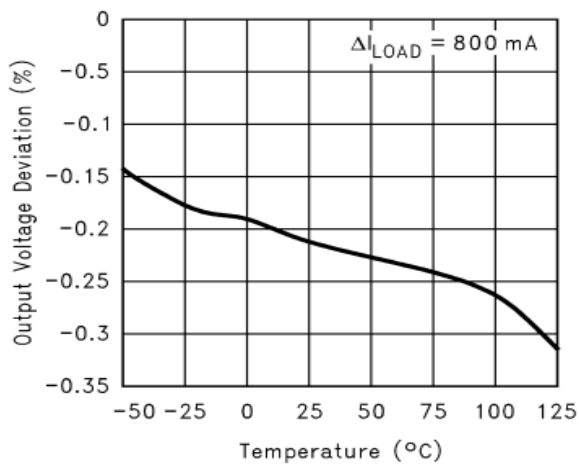


Figure 3. Load Regulation

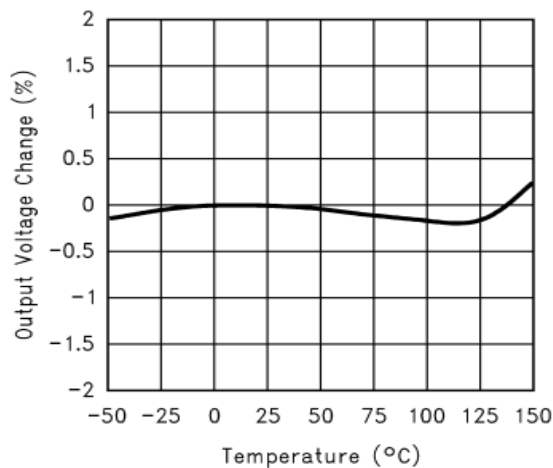


Figure 4. Temperature Stability

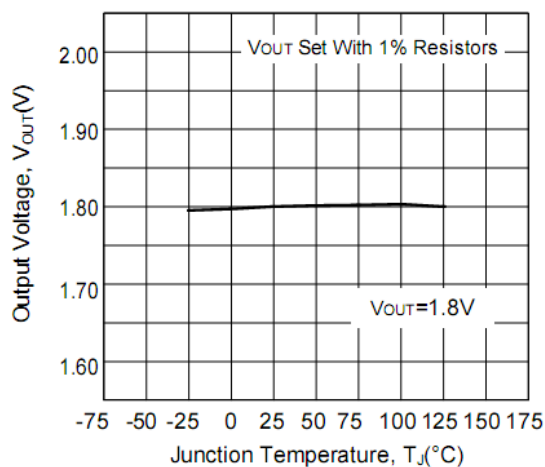


Figure 5. Output Voltage vs. Temperature

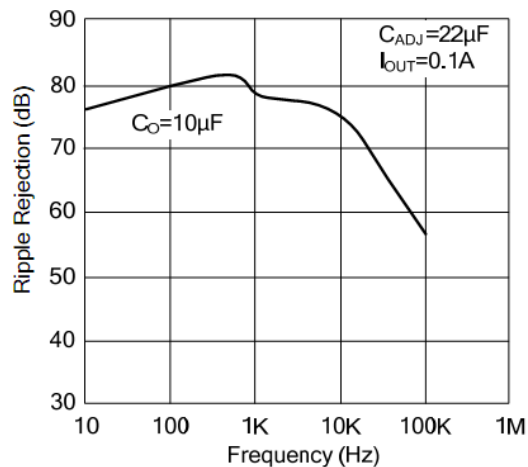


Figure 6. Ripple Rejection

Ordering information

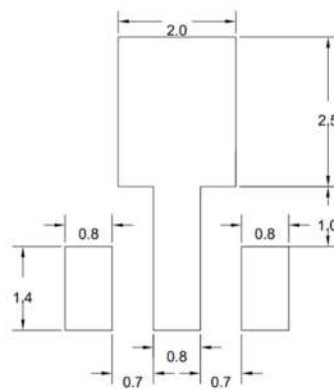
Package	Packing Description	Base Quantity	Packing Quantity
SOT-89	Tape/Reel, 7" reel	1000pcs/Reel	6000PCS/Box 30000PCS/Carton

Package Dimensions

SOT-89

Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	1.40	1.60	0.055	0.063
b	0.32	0.52	0.013	0.020
b1	0.38	0.58	0.015	0.023
c	0.35	0.45	0.014	0.018
D	4.40	4.60	0.173	0.181
D1	1.45	1.65	0.057	0.065
D2	1.70	1.80	0.067	0.071
E	2.30	2.60	0.091	0.102
E1	3.95	4.25	0.156	0.167
E2	1.80	2.00	0.071	0.079
e	1.40	1.60	0.055	0.063
e1	2.80	3.20	0.110	0.126
L	0.90	1.20	0.035	0.047

The recommended mounting pad size



UNIT:MM

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