

1A LOW DROPOUT LINEAR REGULATOR

GENERAL DESCRIPTION

- ♦The YFW 1117-xxx is a series of low dropout three-terminal regulators with a dropout of 1.15V at 1A output current.
- ♦The YFW1117-3.3V provides current limiting and thermal shutdown. Its circuit includes a trimmed bandage. Reference to assure output voltage accuracy to be within 1.5%. Current limit is trimmed to ensure specified. Output current and controlled short-circuit current. On-chip thermal shutdown provides protection against any combination of overload and ambient temperature that would create excessive junction temperature.

FEATURES

- ♦Low Dropout Voltage: 1.15V at 1A Output Current
- ♦Trimmed Current Limit
- ♦On-Chip Thermal Shutdown
- ♦Three-Terminal Adjustable of 3.3V
- ♦Operation Junction Temperature: -40°C to 125°C

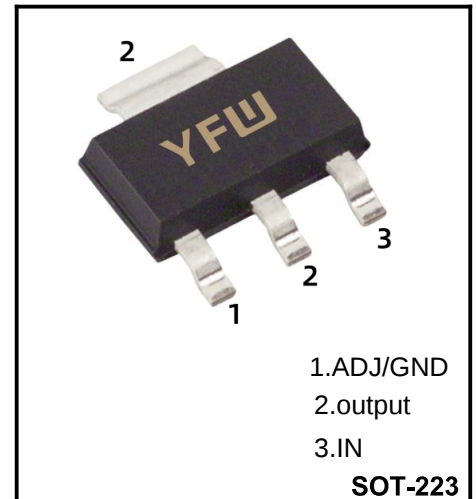
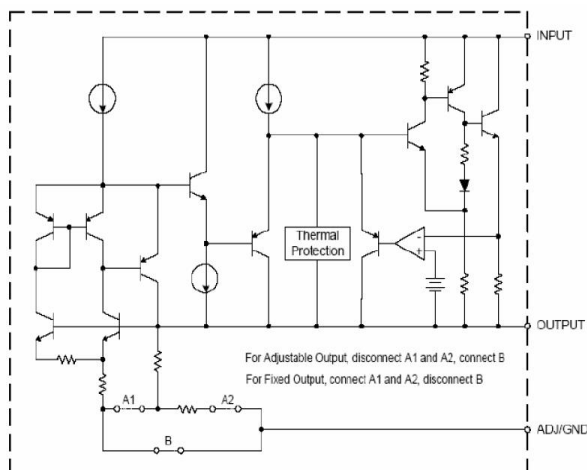
APPLICATION

- ♦PC Motherboard
- ♦LCD Monitor
- ♦Graphic Card
- ♦DVD-Video Player
- ♦NIC/Switch
- ♦Telecon Modem
- ♦ADSL Modem
- ♦Printer and other peripheral Equipment

MECHANICAL DATA

- ♦Case: SOT-223
- ♦Mounting Position: Any.

FUNCTIONAL BLOCK DIAGRAM

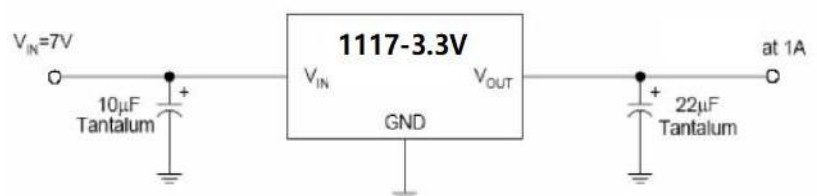


Marking Code

YFW1117-3.3

YFW1117 3.3

TYPICAL APPLICATION CIRCUIT



Maximum Ratings & Thermal Characteristics

(Ratings at 25°C ambient temperature unless otherwise specified.)

Parameters	Symbol	Value	Unit
Input Voltage	Vi	20	V
ESD Voltage (Machine Mode)	V_{ESD}	400	V
Operating Ambient Temperature	T_A	-40~+85	°C
Operating Junction Temperature	T_J	-40~+125	°C
Storage Temperature	T_{STG}	-40~+125	°C
Soldering Temperature & Time	T_{solder}	260°C, 10s	
Thermal Resistance From Junction to Ambient	R_{θJA}	250	°C/W

Note: Stresses greater than those listed under “Absolute Maximum Ratings” may cause permanent damage to the device. These are stress ratings only, and functional of the device at these of any other conditions beyond those indicated under “Recommended Operating Conditions” is not implied. Exposure to “Absolute Maximum Ratings” for extended periods may affect device reliability

Recommended Operating Conditions

Parameter	Symbol	Value	Unit
Input Voltage	Vi	15	V
Operating Junction Temperature	Tj	-40~+125	°C

Electrical Characteristics(Ta=25°C unless otherwise noted)

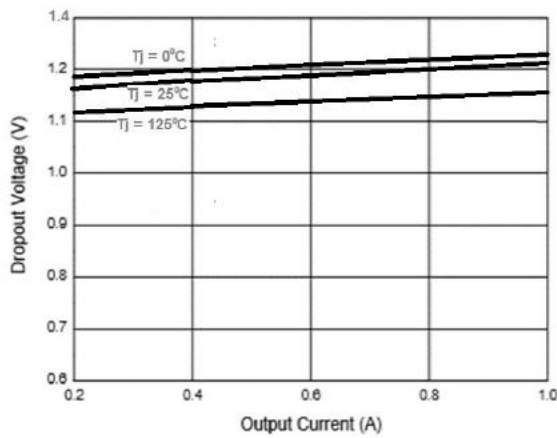
(Vi=10V, Io=40mA, Ci=0.33uF, Co=0.1uF, unless otherwise specified).

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
Output Voltage	IOUT=10mA, VIN=5.3V	VO	3.250	3.3	3.350	V
	10mA≤IOUT≤0.8A, 4.8V≤VIN≤12V		3.234	3.3	3.366	
Line Regulation	IOUT=10mA, 1.5V≤VIN-VOUT≤8.7V	LNR		1	6	mV
Load Regulation	VIN-VOUT=1.5V, 10mA≤IOUT≤0.8A	LDR			10	mV
Dropout Voltage	△VREF=1%, IOUT=0.8A	VD			1.3	V
Current Limit	VIN-VOUT=2.0V	Ilimit	0.8			A
Adjust Pin Current				60	120	uA
Minimum Load Current	1.5V≤VIN-VOUT≤12V (ADJ only)	IL		1.7	5	uA
Quiescent Current	VIN=VOUT+1.25V (ADJ except)	Iq		5	10	mA
Ripple Rejection	f=120Hz, COUT=22uF tantalum, VIN-VOUT=3.0V, IOUT=1.0A	RR	60	75		dB
Temperature Stability				0.5		%
Thermal Shutdown Hysteresis				25		°C

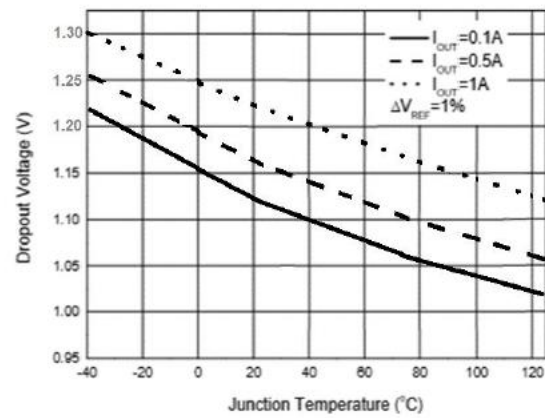
*With package soldering to copper area over backside ground plane or internal power plane R_{θJA} can vary from 46°C/W to >90°C/W depending on mounting technique and the size of the copper area

Typical characteristics

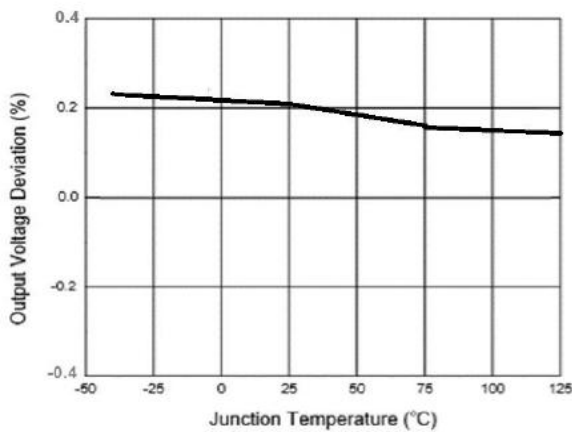
Dropout Voltage vs. Output Current



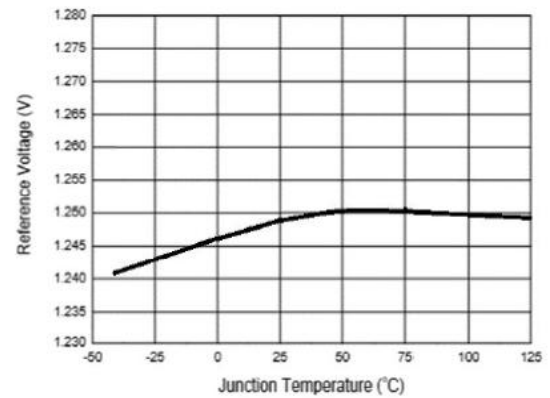
Dropout Voltage vs. Junction Temperature



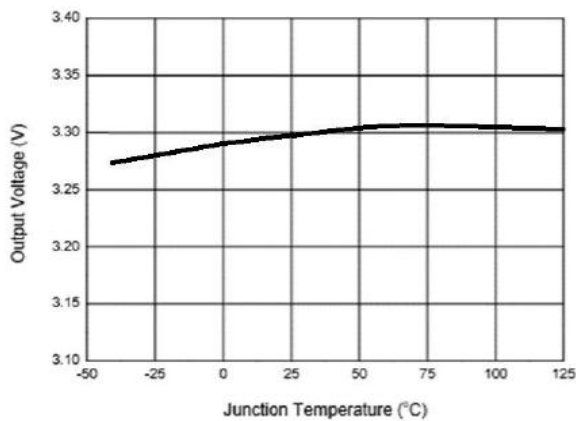
Load Regulation vs. Junction Temperature



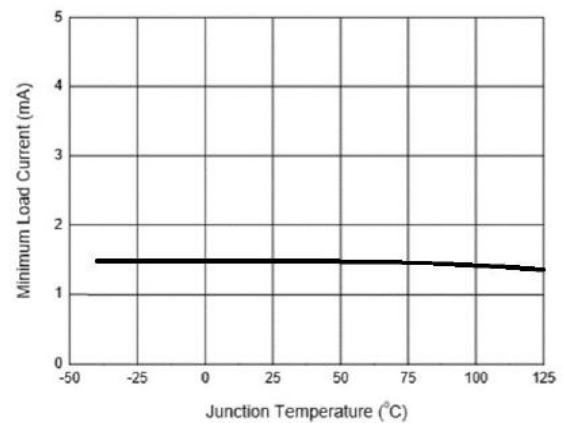
Reference Voltage vs. Junction Temperature



Output Voltage vs. Junction Temperature

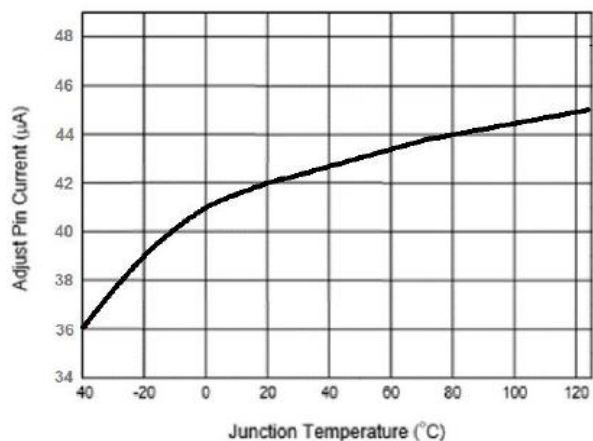


Minimum Load Current vs. Junction Temperature

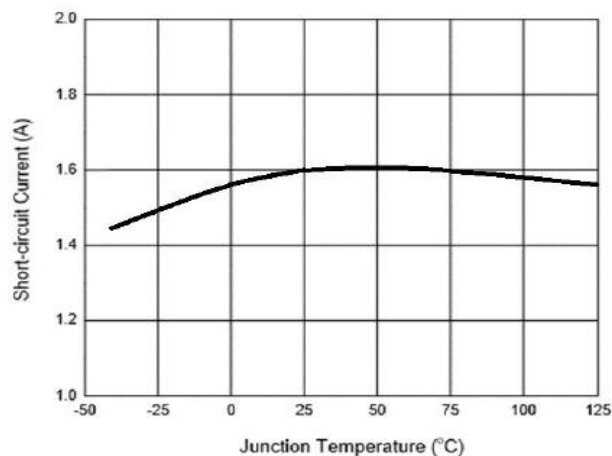


Typical characteristics

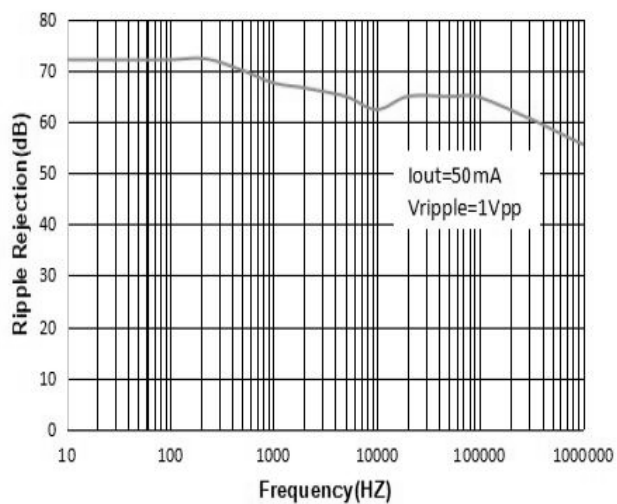
Adjust Pin Current vs. Junction Temperature



Short-circuit Current vs. Junction Temperature



PSRR Vs.Frequency



Ordering information

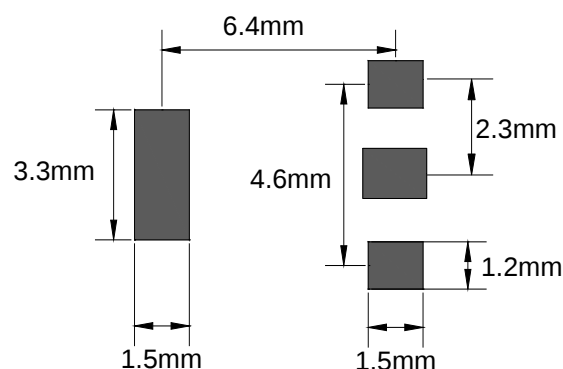
Package	Packing Description	Base Quantity	Packing Quantity
SOT-223	Tape/Reel, 7" reel	1000pcs/Reel	6000PCS/Box 30000PCS/Carton
	Tape/Reel, 13" reel	2500pcs/Reel	5000PCS/Box 30000PCS/Carton

Package Dimensions

SOT-223

Dlm	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	1.50	1.80	0.059	0.071
A1	0.00	0.10	0.000	0.004
A2	1.50	1.70	0.059	0.067
b	0.65	0.75	0.026	0.030
c	0.20	0.30	0.008	0.012
D	6.40	6.60	0.252	0.260
D1	2.90	3.10	0.114	0.122
E	3.30	3.70	0.130	0.146
E1	6.85	7.15	0.270	0.281
e	2.20	2.40	0.087	0.094
e1	4.40	4.80	0.173	0.189
L	1.65	1.85	0.065	0.073
L1	0.90	1.15	0.035	0.045

The recommended mounting pad size



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