DATA SHEET

PS1117

1.0A LOW DROPOUT POSITIVE VOLTAGE REGULATOR

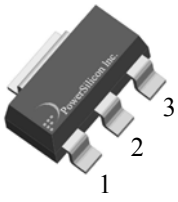
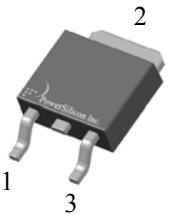
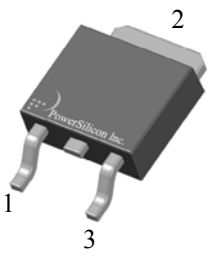
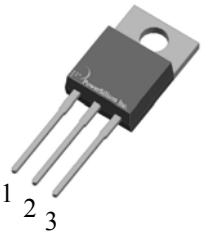
DESCRIPTION

The PS1117 series of positive adjustable and fixed regulators are designed to provide 1A with high efficiency. All internal circuitry is designed to operate down to 1.3V input to output differential. On-chip trimming adjusts the reference voltage to 1%.

FEATURES

- Adjustable or Fixed Output
- Output Current of 1A
- Low Dropout, 1.5V max at 1A Output Current
- 0.04% Line Regulation
- 0.2 % Load Regulation
- 100% Thermal Limit Burn-In
- Fast Transient Response
- Lead Free And Halogen-Free

PIN CONFIGURATION

PIN	CONFIGURATION	SOT-223	TO-252	TO-263	TO-220
1	ADJ/GND				
2	OUTPUT				
3	INPUT				

ORDERING INFORMATION

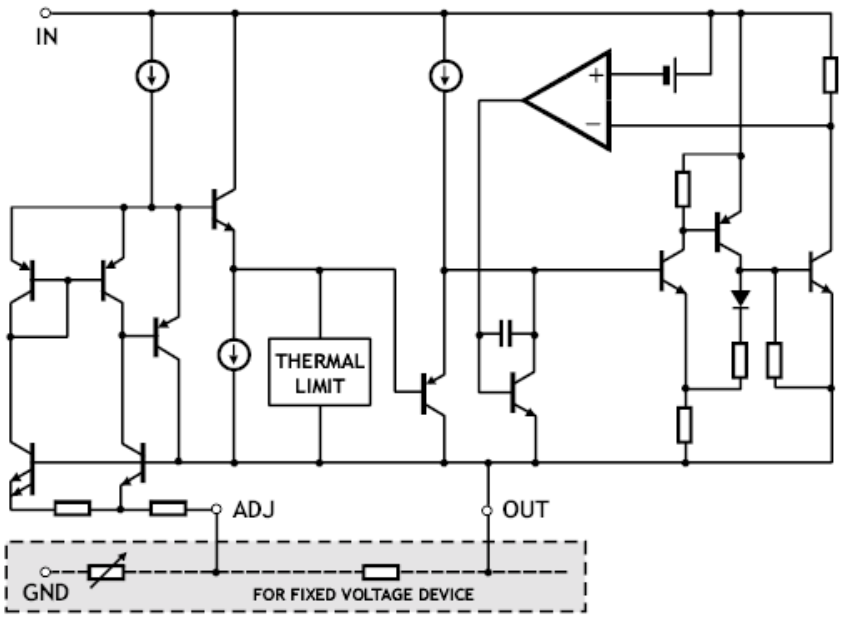
Part Number	Package	Shipping
PS1117-X.X-T43	SOT-223	Tape Reel
PS1117-X.X-TC2	TO-252	Tube
PS1117-X.X-TC2R	TO-252	Tape Reel
PS1117-X.X-TA2	TO-263	Tube
PS1117-X.X-TA2R	TO-263	Tape Reel
PS1117-X.X-TB3	TO-220	Tube

Marking Information:

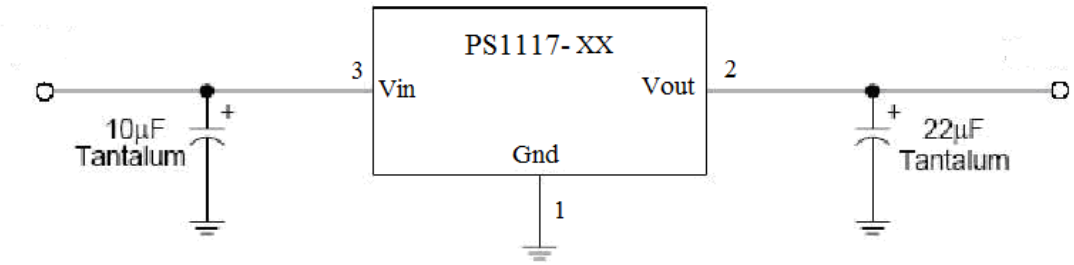
1117-XX
LSYWW

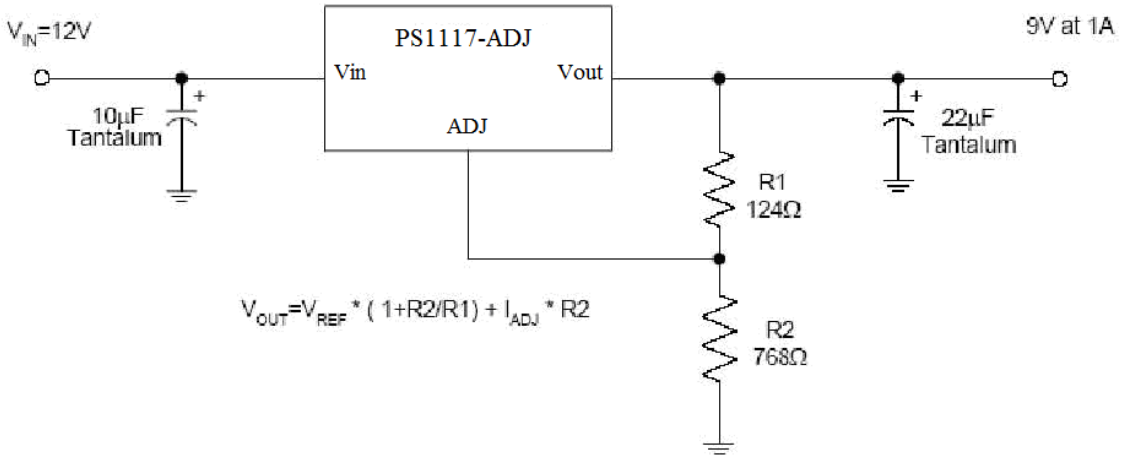
Marking Code: 1117
Output Voltage Code: XX **EX:** 3.3V, XX=33
Date Code: Y: year
WW: weeks

SCHEMATIC DIAGRAM



TYPICAL APPLICATION





ABSOLUTE MAXIMUM RATINGS

(T_A=25°C,unless otherwise specified.)

PARAMETER	SYMBOL	RATING	UNIT
Input-to-output Differential Voltage, V_{IN}-V_{OUT}	V_{IN}	15	V
Power Dissipation	P_D	Internal limited	W
Operating Junction Temperature Range	T_{OPR}	-20 ~ +125	°C
Storage Temperature Range	T_{STG}	-65 ~ +150	°C
Lead Temperature (Soldering 10 sec)	T_{LEAD}	300	°C

Note: Absolute Maximum Ratings are stress ratings only and functional device operation is not implied. The device could be permanently damaged beyond absolute maximum ratings.

ELECTRICAL CHARACTERISTICS

I_{LOAD} = 0mA and T_J = 25°C (unless otherwise noted)

PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Reference Voltage (Note.1)	V_{IN} =5V, I_{LOAD} = 10mA	1.238	1.25	1.262	V
	V_{IN} – V_{OUT} = 1.5V~10V, I_{LOAD} = 10mA~1A	1.225	1.25	1.275	
Output Voltage (Note.1)	V_{IN} – V_{OUT} = 1.5V, Variation from nominal V_{OUT}	-1	-	+1	%
	V_{IN} – V_{OUT} = 1.5V~10V I_{LOAD} = 0mA~1A, Variation from nominal V_{OUT}	-2	-	+2	
Line Regulation (Note.1)	I_{LOAD} = 10mA, V_{IN} – V_{OUT} = 1.5V ~ 10V	-	0.04	0.2	%
Load Regulation (Note.1)	V_{IN} – V_{OUT} = 1.5V I_{LOAD} = 10mA ~ 1A	-	0.2	0.4	
Minimum Load Current	V_{IN} =5V, V_{ADJ} = 0V	-	3	7	mA
Ground Pin Current	V_{IN} – V_{OUT} = 1.5V I_{LOAD} = 10mA ~ 1A	-	7	10	mA
Adjust Pin Current	V_{IN} – V_{OUT} = 1.5V ~ 10V I_{LOAD} = 10mA	-	40	90	uA
Current Limit	V_{IN} – V_{OUT} = 1.5V	1	1.4	-	A
Ripple Rejection (Note.2)	V_{IN} – V_{OUT} = 3V I_{LOAD} = 1A	60	65	-	dB
Dropout Voltage (Note.1,3)	I_{LOAD} = 1A	-	1.3	1.5	V
Temperature Coefficient	V_{IN} – V_{OUT} = 1.5V, I_{LOAD} = 10mA	-	0.005	-	%/°C

The * denotes the specifications which apply over the full temperature range (see previous table, T_J)

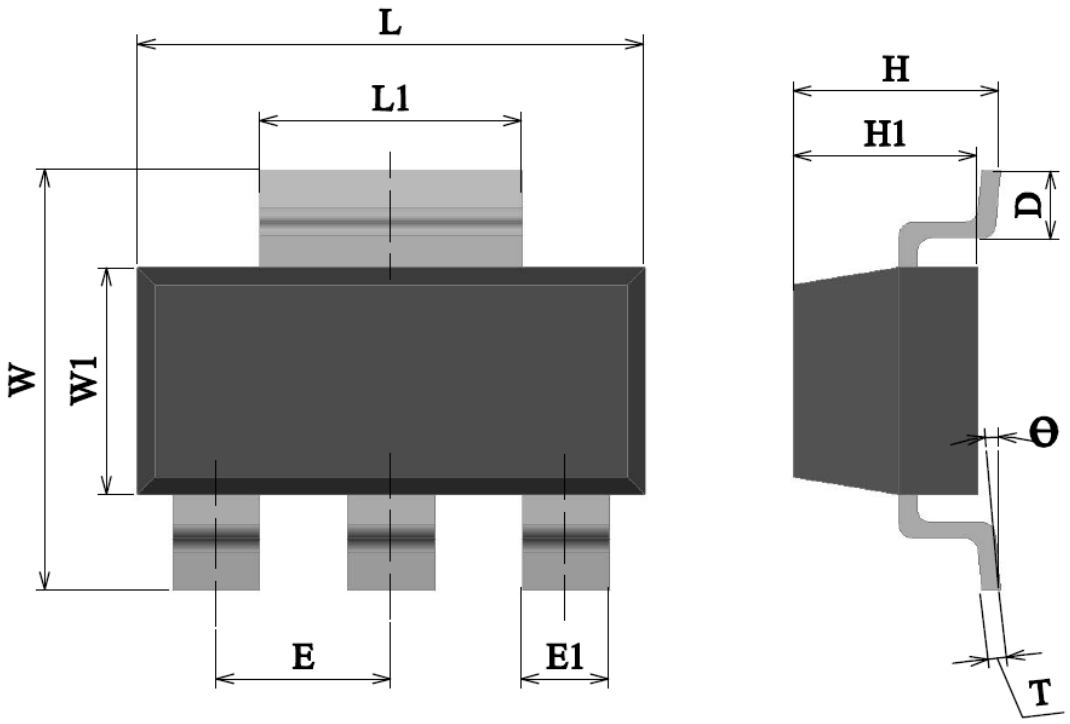
Notes:

1: Low duty pulse testing with Kelvin connections required.

2: 120Hz input ripple (C_{ADJ} for ADJ = 25µF, C_{OUT} = 25µF)

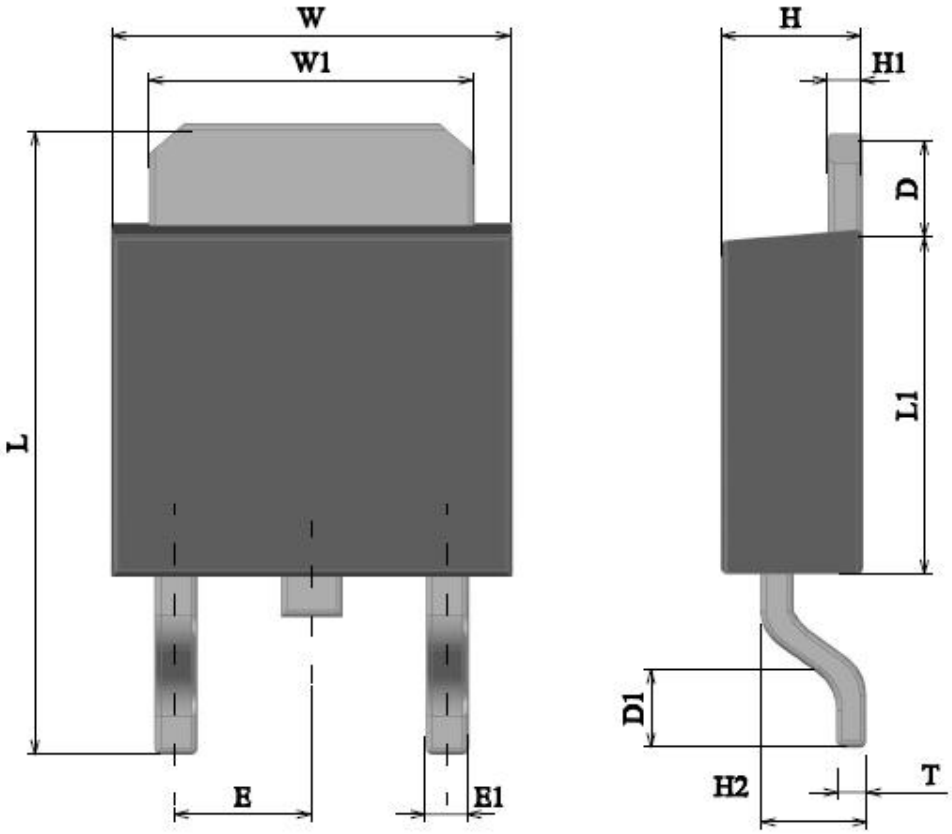
3: ΔV_{OUT}, ΔV_{REF} = 1%

SOT-223 DIMENSION



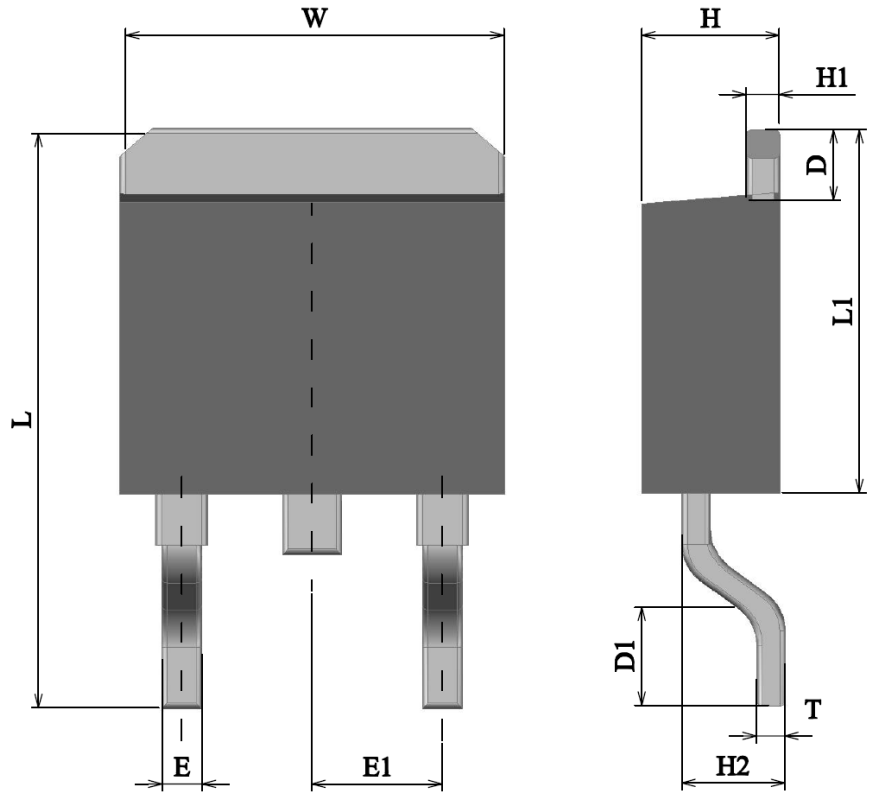
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
L	6.30	6.71	0.248	0.264
L1	2.90	3.15	0.114	0.124
W	6.70	7.30	0.264	0.287
W1	3.33	3.71	0.131	0.146
E	2.30 BSC		0.091 BSC	
E1	0.60	0.84	0.024	0.033
H	1.52	1.80	0.060	0.071
H1	1.50	1.70	0.059	0.067
D	0.90	1.15	0.035	0.045
T	0.25	0.35	0.010	0.014
θ	0°	10°	0 °	10°

TO-252(DPAK) DIMENSION



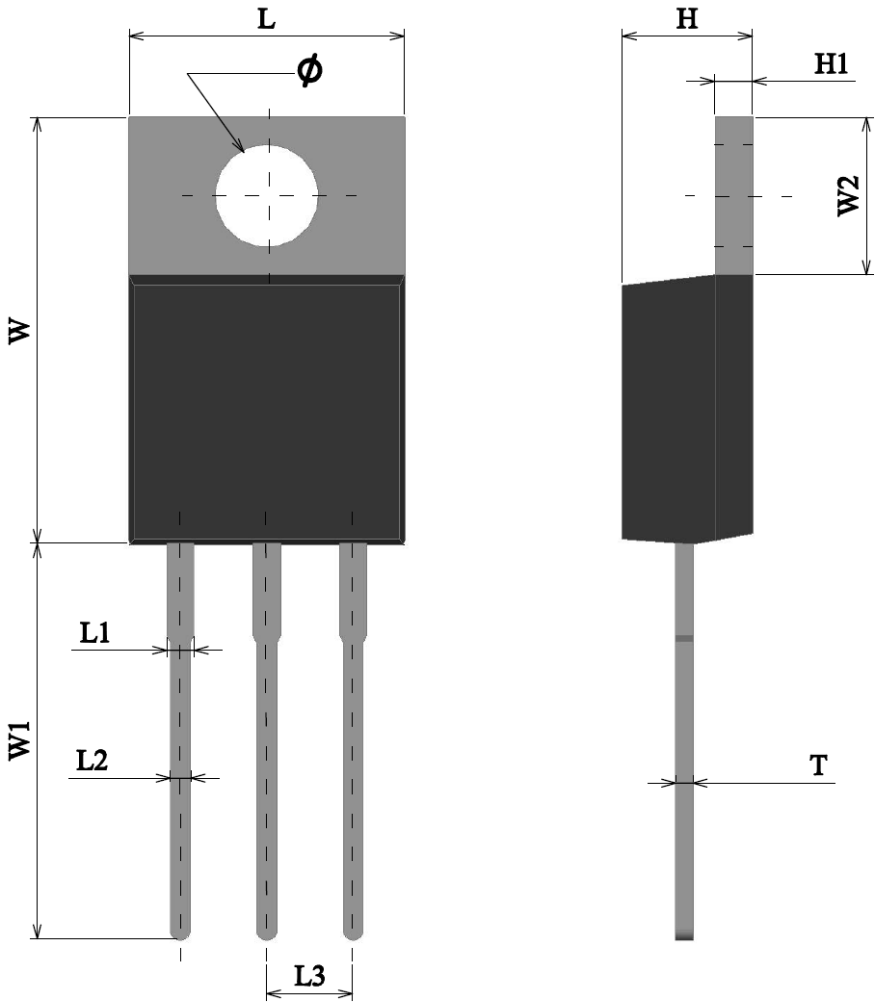
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
L	8.00	10.00	0.315	0.394
L1	5.30	5.70	0.209	0.224
D	0.77	1.60	0.030	0.063
D1	0.51	1.78	0.020	0.070
W	6.30	6.80	0.248	0.268
W1	4.45	5.50	0.175	0.217
E	2.3 Nominal		0.091 Nominal	
E1	-	0.97	-	0.038
H	2.03	2.53	0.080	0.100
H1	0.40	1.01	0.016	0.040
H2	1.30	1.80	0.051	0.071
T	0.43	0.60	0.017	0.024

TO-263 DIMENSION



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
L	14.60	15.88	0.575	0.625
L1	8.25	9.25	0.325	0.364
D	1.14	1.40	0.045	0.055
D1	2.29	2.79	0.090	0.110
W	9.65	10.69	0.380	0.421
E1	2.29	2.79	0.090	0.110
E	0.51	1.14	0.020	0.045
H	4.37	4.83	0.172	0.190
H1	1.40	1.41	0.055	0.056
H2	2.03	2.92	0.080	0.115
T	0.30	0.64	0.012	0.025

TO-220 DIMENSION



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
L	9.65	10.67	0.380	0.420
L1	1.14	1.78	0.045	0.070
L2	0.50	1.15	0.020	0.045
L3	2.28	2.80	0.090	0.110
W	14.22	16.51	0.560	0.650
W1	12.70	14.74	0.500	0.580
W2	5.58	7.49	0.220	0.295
H	2.03	4.83	0.080	0.190
H1	0.50	1.40	0.020	0.055
T	0.30	1.15	0.012	0.045
φ	0.36	0.64	0.014	0.025