A1117B-5.0

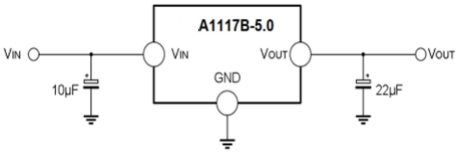
1A Low-Dropout Linear Regulator

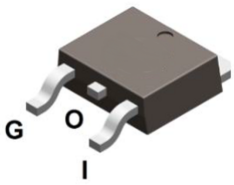
Features

- Output Voltage (5.0V)
- Current limiting and thermal protection
- Output current (1A)

Applications

- Post regualtor for switching DC/DC converter
- High efficiency linear regulators
- Battery charger
- Batterty powered instrumentation





TO-252

Mechanical Data

- Case: TO-252
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
A1117B-5.0	TO-252	80 pcs / Tube or 2500 pcs / Tape & Reel	1117B-5.0

Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Input Voltage	V_I	15	V
Minimum Human Body Model	ESD	2000	V

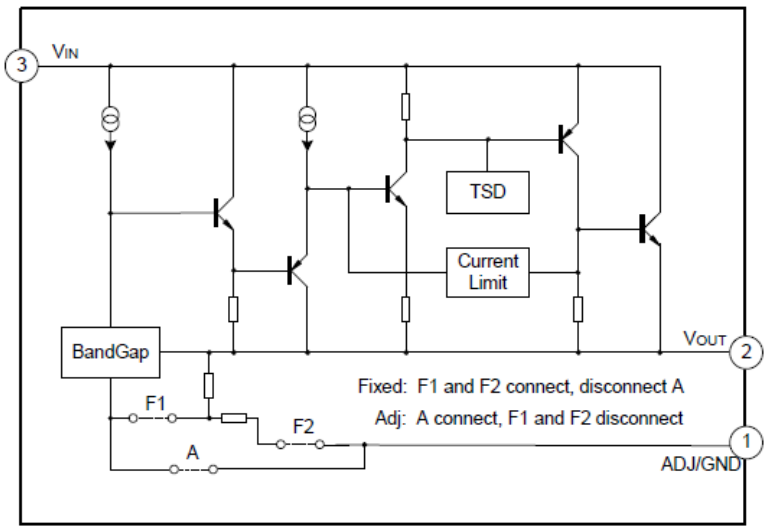
Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation	P_D	1.16	W
Thermal Resistance Junction-to-Air	$R_{\theta JA}$	86	°C/W
Operating Junction Temperature Range	T_{OPR}	-40 ~ +125	°C
Junction Storage Temperature Range	T_J, T_{STG}	-65 ~ +150	°C

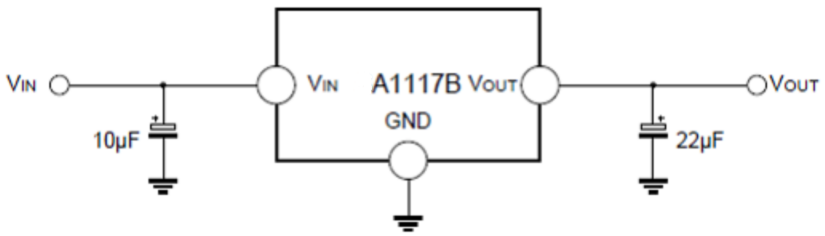
Electrical Characteristics (@ T_J = 25°C, C_I = 10μF, C_O = 22μF unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Output Voltage	V_O	I_O = 10mA, V_I = 7V	4.925	5.000	5.075	V
		0mA ≤ I_O ≤ 1A 6.5V ≤ V_I ≤ 12V	4.900	5.000	5.100	V
Line Regulation	ΔV_O	I_O = 10mA, V_{IMIN} ≤ V_I ≤ 12V	-	-	18	mV
Load Regulation	ΔV_O	V_I = 6.5V, 10mA ≤ I_O ≤ 1A	-	-	18	mV
Dropout Voltage	V_D	I_O = 100mA	-	-	1.25	V
		I_O = 500mA	-	-	1.3	V
		I_O = 1A	-	-	1.4	V
Current Limit	I_{LIMIT}	-	2.1	-	2.5	A
Thermal Regulation	-	-	-	0.5	-	%
Quiescent Current	I_Q	4.25V ≤ V_I ≤ 6.5V	-	-	10	mA
Ripple Rejection	R_R	f_{RIPPLE} = 120Hz V_{IN}-V_{OUT} = 3V, V_{RIPPLE} = 1V_{PP}	60	75	-	dB

Block Diagram



TYPICAL Application Circuits



PS: The above circuits and parameters are for reference only and need to be adjusted according to actual applications

TYPICAL CHARACTERISTICS (@ T_A = 25°C unless otherwise specified)

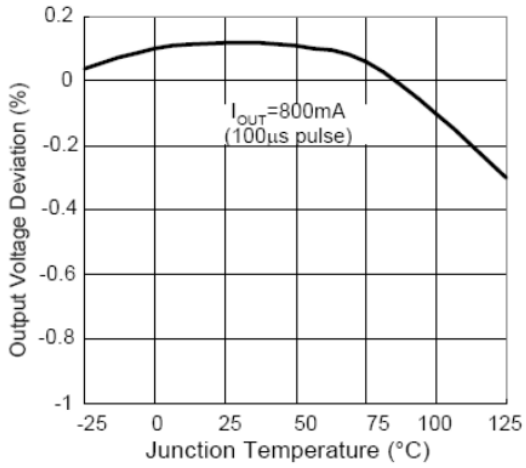


Fig 1 Load Regulation vs. Temperature

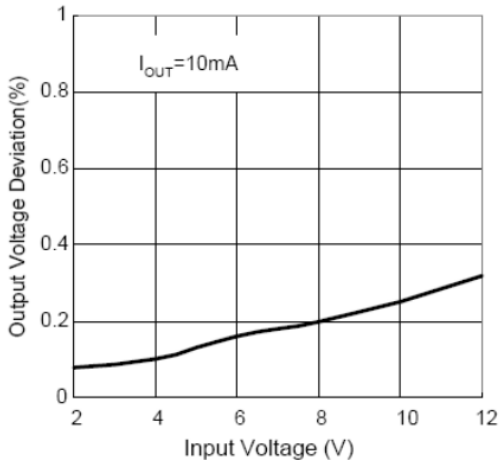


Fig 2 Line Regulation vs. Temperature

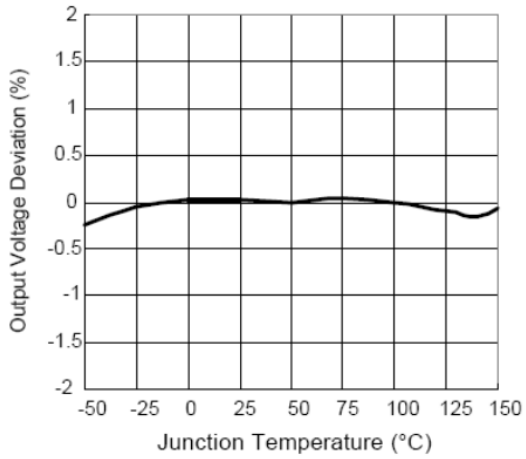


Fig 3 Output Voltage Change vs. Temperature

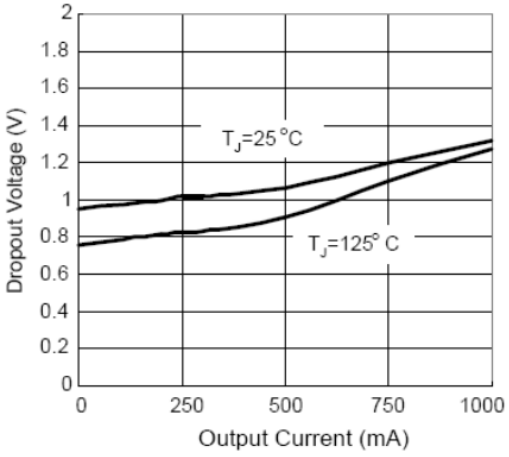


Fig 4 Dropout Voltage vs. Output Current

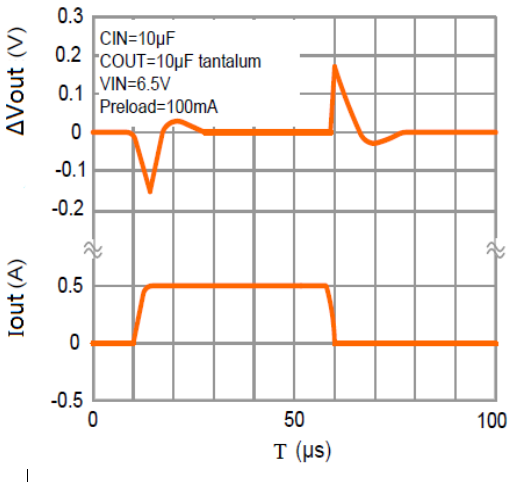


Fig 5 Load Transient Response

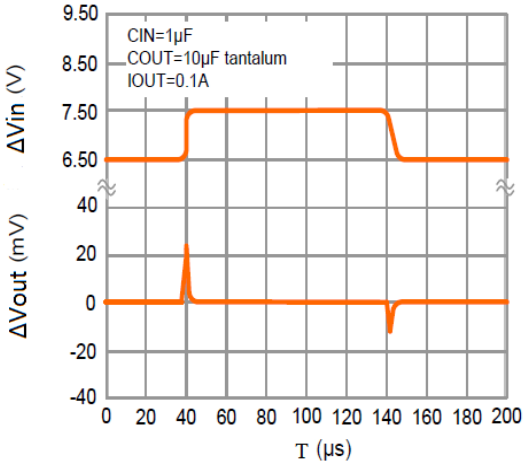
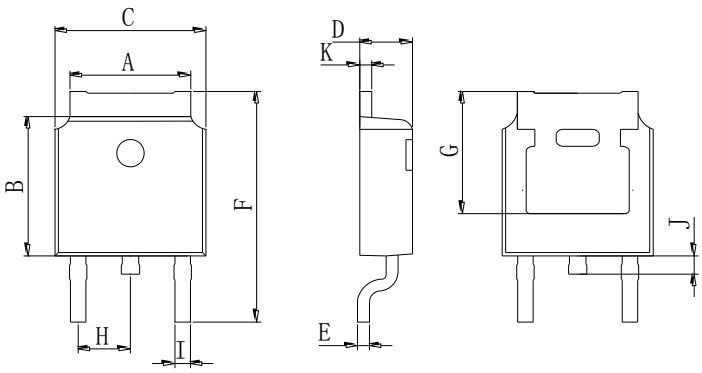


Fig 6 Line Transient Response

Package Outline Dimensions (Unit: mm)



TO-252		
Dimension	**Min.**	**Max.**
A	5.05	5.65
B	5.80	6.40
C	6.25	6.85
D	2.20	2.40
E	0.40	0.60
F	9.71	10.31
G	5.05	5.65
H	2.10	2.50
I	0.70	0.90
J	0.50	0.70
K	0.40	0.60

Mounting Pad Layout (Unit: mm)

TO-252