



1. Features

- Output Current up to 1 A
- Low Dropout Voltage (1.2V at 1A Output Current)
- Three Terminal Fixed 5.0V
- Line Regulation typically at 0.1% max
- Load Regulation typically at 0.2% max
- Internal Current and Terminal Protection
- Maximum Input Voltage - 15V
- 100% Thermal Limit Burn-In

2. Mechanical Data

- Case:Molded Plastic,SOT-223 .
- Epoxy:UL 94V-0 rate flame retardant.
- Terminals:Plated Leads Solderable per MIL-STD-750,Method-2026.
- Marking:1117-5.0
- Mounting Position : Any.

SOT-223



1 GND
2 OUT
3 IN
4 OUT

3. Maximum Ratings

Electrical Characteristics Rating at 25°C ambient temperature unless otherwise specified.

Characteristic	Symbol	Value	Unit
Power Dissipation	P_D	Internally Limited	W
Input Voltage	V_{IN}	15	V
Voltage Difference	$V_{IN} - V_{OUT}$	10	V
Junction Temperature	T_j	-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

4. Electrical Characteristics (Refer to the test circuits, $T_J=25^{\circ}\text{C}$ $C_O=10\mu\text{F}$ unless otherwise specified)

Characteristics	Symbol	Condition	Min	TYP	Max	Unit
Output Voltage(Note 1)	V_O	$I_O=10\text{mA}$	4.95	5	5.05	V
		$I_O=10\text{mA} - 1\text{A}, V_{IN}=6.5-15\text{V}$	4.95	-	5.1	V
Line Regulation (Note 1)	ΔV_O	$I_O = 10\text{mA}, V_{IN}=6.5-15\text{V}$	-	-	0.20%	-
		$I_O=10\text{mA} - 1\text{A}, V_{IN}=7\text{V}$	-	-	0.40%	-
Operating Input Voltage	V_{IN}	$I_O = 100\text{mA}$	-	-	15	V
Adjustment Pin Current	I_{ADJ}	$V_{IN}-V_O=1.5-12\text{V}, I_O=100\text{mA}$	-	-	120	μA
Adjustment Pin Current Change	ΔI_{ADJ}	$V_{IN}-V_O=1.5-12\text{V}, I_O=100\text{mA}-1\text{A}$	-	-	5	μA
Quiescent Current	I_Q	$V_{IN} - V_O = 5\text{V}$	-	-	10	mA
Current Limit	I_O	$V_{IN} - V_O = 5\text{V}$	1000	-	-	mA
Supply Voltage Rejection	SVR	$I_O=40\text{mA}, f=12\text{Hz}, T_J=25^{\circ}\text{C}, V_{IN}=6.3\text{V}, V_{NIPPLE} = 1V_{PP}$	60	-	-	dB
Dropout Voltage	V_D	$I_O = 100\text{mA}$	-	-	1.1	V
		$I_O = 500\text{mA}$	-	-	1.2	V
		$I_O = 1000\text{mA}$	-	-	1.3	V

Note1 : Low duty pulse testing with Kelvin connections required.

Note2 : 120Hz input ripple

Note3 : $\Delta V_{OUT} = 1\%$



5. Rating And Characteristic Curves

Fig.1 Voltage Regulator With Reference

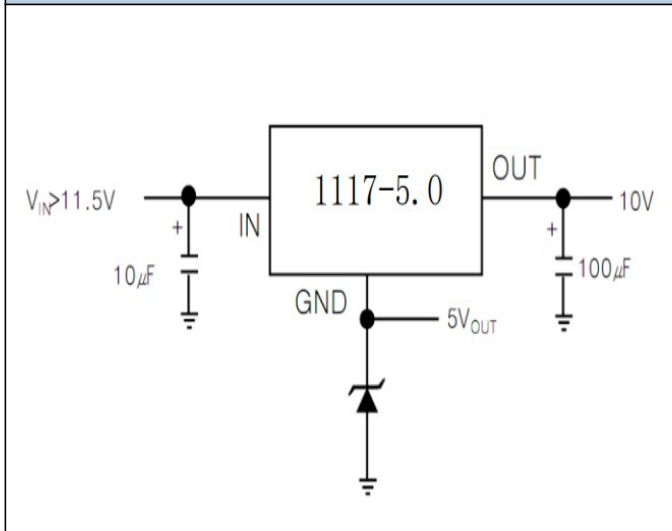
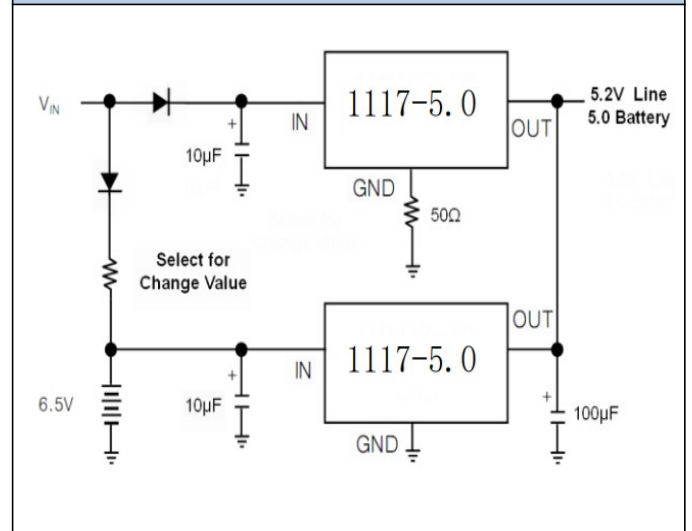
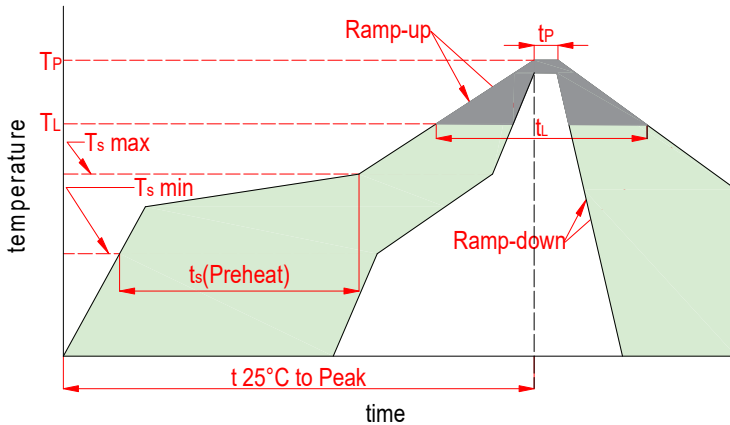


Fig.2 Battery Backed-up Regulated Supply



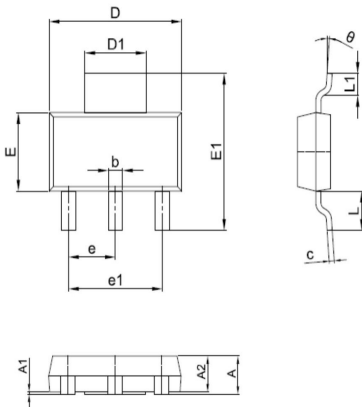


6. Soldering Parameters



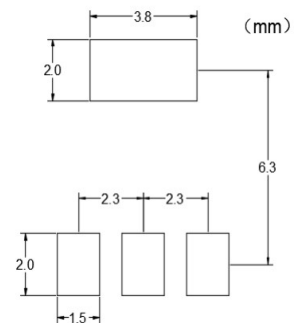
Reflow Condition		Lead-free
Pre Heat	Temp. min(T_s (min))	150°C
	Temp. max(T_s (min))	200°C
	Time(min to max)(t_s)	60~120s
Aver. ramp up rate(Liquidus Temp.)(T_L)to peak		3°C/s max
T_s (max) to T_L -Ramp-up Rate		3°C/s max
Reflow	Temp.(T_L)(Liquidus)	217°C
	Temp.(t_L)(Liquidus)	60~150s
Peak Temp.(T_P)		260 ^{+0/-5} °C
Time within actual peak Temp.(t_p)		30s max
Ramp-down Rate		6°C/s max
Time 25°C to peak Tempe.(T_p)		8 minutes max
Do not exceed		260°C

7. Dimensions

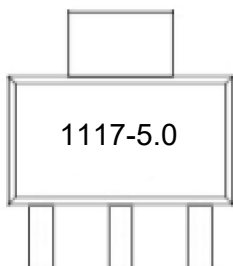


Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.059	0.071	1.500	1.800
A1	0.000	0.004	0.000	0.100
A2	0.059	0.067	1.500	1.700
b	0.026	0.030	0.650	0.750
c	0.008	0.012	0.200	0.300
D	0.252	0.260	6.400	6.600
D1	0.114	0.122	2.900	3.100
E	0.130	0.146	3.300	3.700
E1	0.270	0.281	6.850	7.150
e	0.087	0.094	2.200	2.400
e1	0.173	0.189	4.400	4.800
L	0.065	0.073	1.650	1.850
L1	0.035	0.045	0.900	1.150

Mounting PAD Layout



8. Part Marking System



9. Package Information

Package	Type	Tape Width (mm)	Quantity(pcs)
SOT-223	XN1117-5.0	12	4000



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