

RoHS Compliant Product
A suffix of "-C" specifies halogen and lead-free

DESCRIPTION

SJU1117 is low dropout three-terminal regulators with a dropout of 1.15V at 1A output current.

SJU1117 provides current limiting and thermal shutdown. Its circuit includes a trimmed bandgap reference to assure output voltage accuracy to be within 1%. 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.

SJU1117 has an adjustable version that can provide the output voltage from 1.25V to 5V with only 2 external resistors.

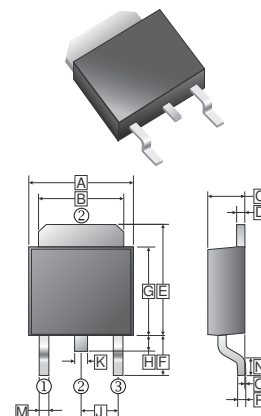
FEATURES

- Low Dropout Voltage: 1.15V at 1A Output Current
- Trimmed Current Limit
- On-Chip Thermal Shutdown
- Three-Terminal Shutdown
- Operation Junction Temperature: 0°C to 125°C

APPLICATIONS

- PC Motherboard
- LCD Monitor
- Graphic Card
- DVD-Video Player

TO-252



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	6.35	6.90	J	2.186	2.386
B	4.95	5.50	K	0.64	1.14
C	2.10	2.50	M	0.50	1.14
D	0.43	0.9	N	1.3	1.8
E	6.0	7.5	O	0	0.13
F	2.90 REF		P	0.58REF.	
G	5.40	6.40			
H	0.60	1.20			

MARKING

CJU1117-□	ADJ: Adjustable Output	2.5: Fixed Output 2.5V
	1.5: Fixed Output 1.5V	3.3: Fixed Output 3.3V
	1.8: Fixed Output 1.8V	5.0: Fixed Output 5.0V

PACKAGE INFORMATION

Package	MPQ	Leader Size
TO-252	2.5K	13 inch

ABSOLUTE MAXIMUM RATINGS ¹

Parameter	Symbol	Value	Unit
Input Voltage	V_{IN}	20	V
ESD(Machine Model)	ESD	600	V
Thermal Resistance from Junction to Case ²	$R_{\theta JC}$	10	°C/W
Lead Temperature@Soldering, 10 sec	T_L	300	°C
Maximum Junction and Storage Temperature Range	T_J, T_{STG}	150, -65~150	°C

Notes:

1. Stresses which are greater than those listed in the following form may cause permanent damage to the device. The form only indicates the stress ratings; furthermore, the function of the device at these or any other conditions beyond the indications of the form is not implied. Exposure to the form for extended periods may affect the reliability of the device.
2. With package soldering to copper area over backside ground plane or internal power plane, $R_{\theta JA}$ can vary from 46°C/W to over 90°C/W. It depends on the mounting technique and the size of the copper area.

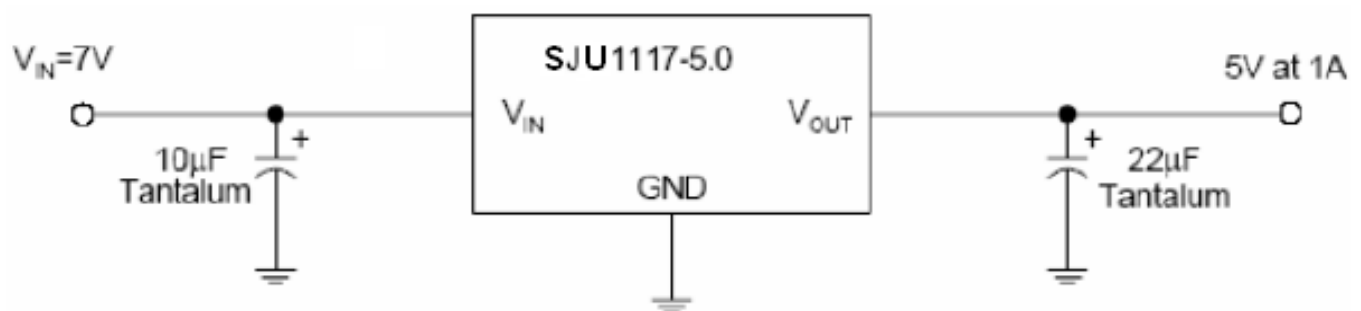
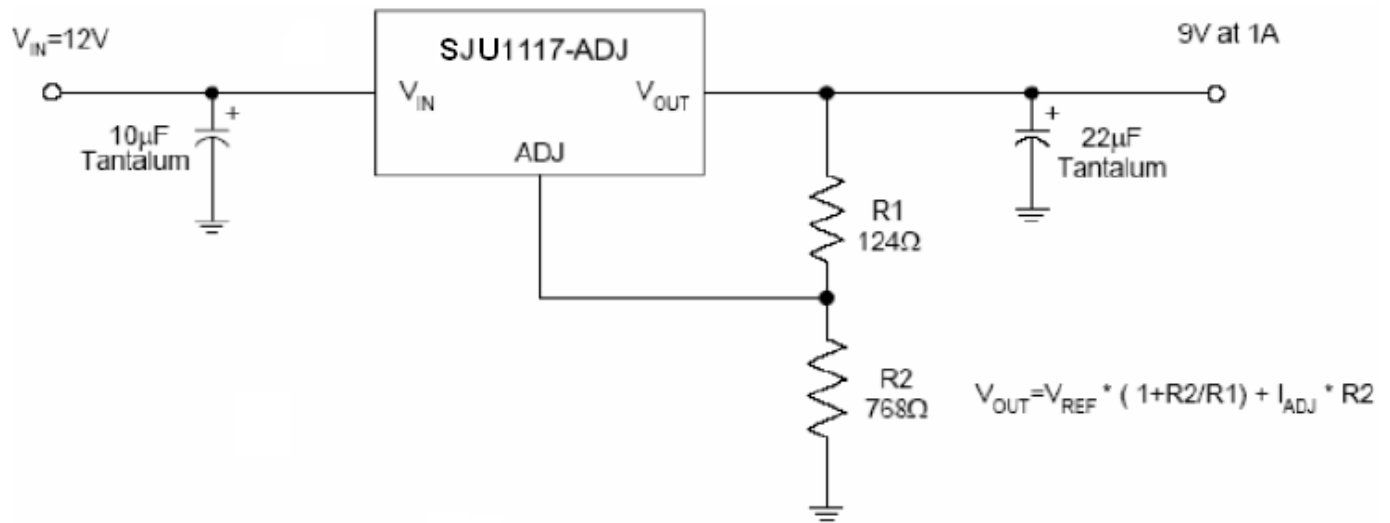
RECOMMENDED OPERATING CONDITIONS

Parameter	Symbol	Min	Max	Unit
Input Voltage	V_{IN}	-	15	V
Operating Junction Temperature Range	T_J	0	125	°C

ELECTRICAL CHARACTERISTICS ($V_{IN} \leq 10V$, $T_J = 25^\circ C$, unless otherwise specified)

Symbol	Part Number	Test Condition	Min	Typ	Max	Unit
Reference Voltage	SJU1117-ADJ	$I_{OUT} = 10mA$, $V_{IN} - V_{OUT} = 2V$, $P \leq$ Maximum Power Dissipation	1.238	1.25	1.262	V
		$10mA \leq I_{OUT} \leq 1A$, $1.4V \leq V_{IN} - V_{OUT} \leq 8V$, $P \leq$ Maximum Power Dissipation	1.225	1.25	1.27	
Output Voltage	SJU1117-1.5	$I_{OUT} = 10mA$, $V_{IN} = 3.5V$	1.485	1.5	1.515	V
		$10mA \leq I_{OUT} \leq 1A$, $3V \leq V_{IN} \leq 10V$	1.47	1.5	1.53	
	SJU1117-1.8	$I_{OUT} = 10mA$, $V_{IN} = 3.8V$	1.782	1.8	1.818	
		$10mA \leq I_{OUT} \leq 1A$, $3.2V \leq V_{IN} \leq 10V$	1.746	1.8	1.854	
	SJU1117-2.5	$I_{OUT} = 10mA$, $V_{IN} = 4.5V$	2.475	2.5	2.525	
		$10mA \leq I_{OUT} \leq 1A$, $3.9V \leq V_{IN} \leq 10V$	2.45	2.5	2.55	
	SJU1117-3.3	$I_{OUT} = 10mA$, $V_{IN} = 5V$	3.267	3.3	3.333	
		$10mA \leq I_{OUT} \leq 1A$, $4.75V \leq V_{IN} \leq 10V$	3.235	3.3	3.365	
SJU1117-5.0	$I_{OUT} = 10mA$, $V_{IN} = 7V$	4.95	5	5.05		
	$10mA \leq I_{OUT} \leq 1A$, $6.5V \leq V_{IN} \leq 12V$	4.9	5	5.1		
ΔV_O (Line Regulation)	SJU1117-ADJ	$I_{OUT} = 10mA$, $1.5V \leq V_{IN} - V_{OUT} \leq 10V$	-	0.035	0.2	%
	SJU1117-1.5		-	1	6	mV
	SJU1117-1.8		-	1	6	
	SJU1117-2.5		-	1	6	
	SJU1117-3.3		-	1	6	
	SJU1117-5.0		-	1	10	
ΔV_O (Load Regulation)	SJU1117-ADJ	$10mA \leq I_{OUT} \leq 1A$, $V_{IN} - V_{OUT} = 2V$	-	0.2	0.4	%
	SJU1117-1.5		-	1	10	mV
	SJU1117-1.8		-	1	10	
	SJU1117-2.5		-	1	10	
	SJU1117-3.3		-	1	10	
	SJU1117-5.0		-	1	15	
Dropout Voltage	$\Delta V_{REF} = 1\%$, $I_{OUT} = 0.1A$		-	1	1.1	V
	$\Delta V_{REF} = 1\%$, $I_{OUT} = 0.5A$		-	1.08	1.18	
	$\Delta V_{REF} = 1\%$, $I_{OUT} = 1A$		-	1.15	1.25	
Current Limit	$V_{IN} - V_{OUT} = 2V$		1.25	1.35	-	A
Adjust Pin Current			-	60	120	μA
Adjust Pin Current Change	$10mA \leq I_{OUT} \leq 1A$, $1.4V \leq V_{IN} - V_{OUT} \leq 10V$		-	0.2	5	μA
Minimum Load Current	SJU1117-ADJ	$1.5V \leq V_{IN} - V_{OUT} \leq 10V$	-	1.7	5	mA
Quiescent Current	$V_{IN} = V_{OUT} + 1.25V$		-	5	10	mA
Ripple Rejection	$f = 120Hz$, $C_{OUT} = 22\mu F$ Tantalum, $V_{IN} - V_{OUT} = 3V$, $I_{OUT} = 1A$		60	75	-	dB
Temperature Stability			-	0.5	-	%
Long-Term Stability	$T_A = 125^\circ C$, 1000hrs		-	0.3	-	%
RMS Output Noise (% of V_{OUT})	$T_A = 25^\circ C$, $10Hz \leq f \leq 10KHz$		-	0.003	-	%
Thermal Shutdown Hysteresis			-	25	-	°C

TYPICAL APPLICATION



FUNCTIONAL BLOCK DIAGRAM

