

Features

- Maximum Output Current is 1.0A
- Range of Operation Input Voltage: Max 30V
- Line Regulation: 0.03%/V (typ.)
- Standby Current: 2mA (typ.)
- Load Regulation: 0.2%/A (typ.)
- Environment Temperature: -40°C~ 85°C
- Moisture Sensitivity Level 3
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free. "Green" Device (Note 1)
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)

Applications

- Power Management for Computer Mother Board, Graphic Card
- CD Monitor and LCD TV
- DVD Decode Board
- ADSL Modem
- Post Regulators For Switching Supplies

Description

MCT1117C is a series of low dropout three-terminal regulators with a dropout of 1.3V at 1A load current. MCT1117C features a very low standby current 2mA compared to 5mA of competitor.

Other than a fixed version, $V_{out} = 1.2V, 1.5V, 1.8V, 2.5V, 2.85V, 3.3V,$ and 5V, MCT1117C has an adjustable version, which can provide an output voltage from 1.25 to 12V with only two external resistors.

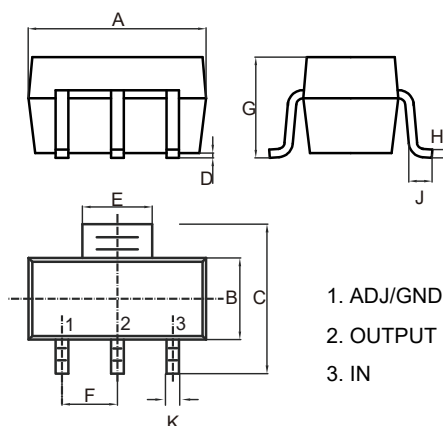
MCT1117C offers thermal shut down function, to assure the stability of chip and power system. And it uses trimming technique to guarantee output voltage accuracy within 2%. Other output voltage accuracy can be customized on demand, such as 1%.

MCC Part Number	Device Marking ⁽²⁾
MCT1117C-1.2	1117 1.2 YYWW
MCT1117C-1.5	1117 1.5 YYWW
MCT1117C-1.8	1117 1.8 YYWW
MCT1117C-2.5	1117 2.5 YYWW
MCT1117C-2.85	1117 2.8 YYWW
MCT1117C-3.3	1117 3.3 YYWW
MCT1117C-5.0	1117 5.0 YYWW
MCT1117C-ADJ	1117 ADJ YYWW

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. YYWW: Date Code.

Low Dropout Linear Regulator

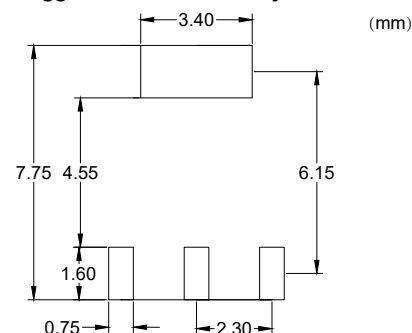
SOT-223



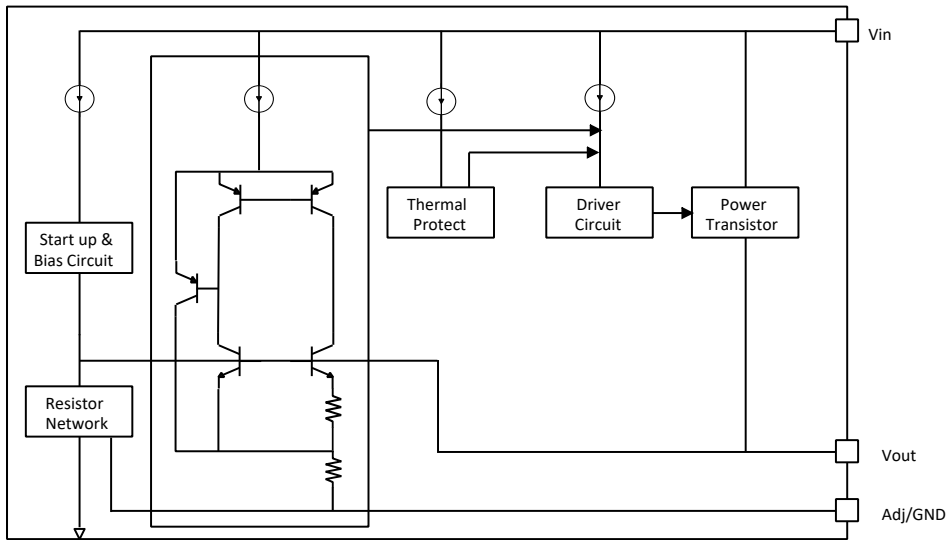
DIMENSIONS

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.248	0.264	6.30	6.70	
B	0.130	0.146	3.30	3.70	
C	0.264	0.287	6.70	7.30	
D	0.001	0.004	0.02	0.10	
E	0.114	0.122	2.90	3.10	
F	0.091		2.30		TYP.
G	---	0.071	---	1.80	
H	0.009	0.014	0.23	0.35	
J	0.030	---	0.75	---	
K	0.026	0.033	0.66	0.84	

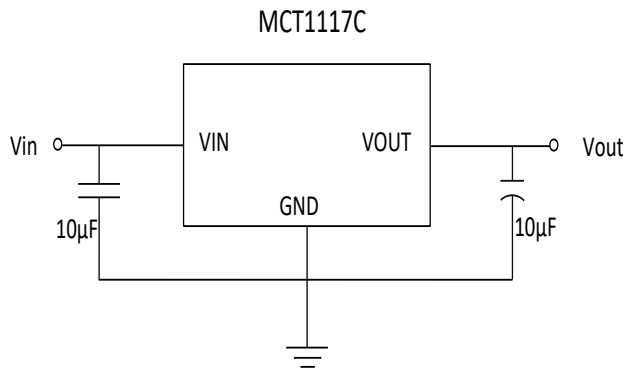
Suggested Solder Pad Layout



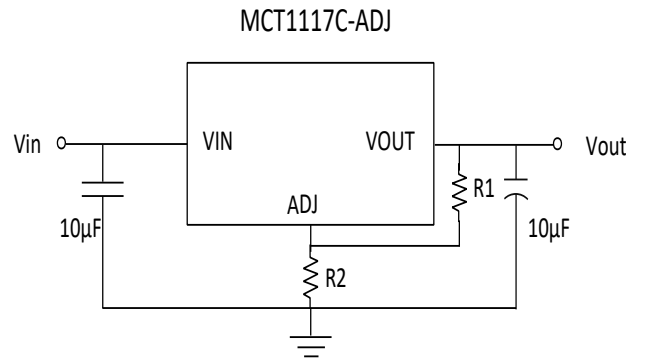
Functional Block Diagram



Typical Application Circuit



Application circuit of MCT1117C fixed version



Application circuit of MCT1117C-ADJ

Absolute Maximum Ratings

- Max Input Voltage: 30V
- Max Operating Junction Temperature: 150°C
- Ambient Temperature Range: -40~+85°C
- Storage Temperature Range: -40~+150°C
- Lead Temperature & Time: 260°C, 10s

Caution: Exceed these limits to damage to the device. Exposure to absolute maximum rating conditions may affect device reliability.

Recommended Work Conditions

- Recommended Maximum Input Voltage: 18V
- Recommended Operating Junction Temperature: -20~+125°C

Package Thermal Resistance

- SOT-223 θ_{JC} : 20 °C/W
- SOT-223 θ_{JA} : 60 °C/W

Power Dissipation

- SOT-223 : 1.2W

Electrical Characteristics ($T_A=25^\circ\text{C}$, unless otherwise noted.)

Parameter	Symbol	Item	Test Conditions	Min	Typ	Max	Unit
Reference Voltage	Vref	ADJ	$10\text{mA} \leq I_{out} \leq 1\text{A}$, $V_{in}=3.25\text{V}$	1.225	1.25	1.275	V
Output Voltage	Vout	1.2V	$0 \leq I_{out} \leq 1\text{A}$, $V_{in}=3.2\text{V}$	1.176	1.2	1.224	V
		1.5V	$0 \leq I_{out} \leq 1\text{A}$, $V_{in}=3.5\text{V}$	1.47	1.5	1.53	
		1.8V	$0 \leq I_{out} \leq 1\text{A}$, $V_{in}=3.8\text{V}$	1.764	1.8	1.836	
		2.5V	$0 \leq I_{out} \leq 1\text{A}$, $V_{in}=4.5\text{V}$	2.45	2.5	2.55	
		2.85V	$0 \leq I_{out} \leq 1\text{A}$, $V_{in}=4.85\text{V}$	2.793	2.85	2.907	
		3.3V	$0 \leq I_{out} \leq 1\text{A}$, $V_{in}=5.3\text{V}$	3.234	3.3	3.366	
		5.0V	$0 \leq I_{out} \leq 1\text{A}$, $V_{in}=7\text{V}$	4.9	5	5.1	
Line Regulation	ΔV_{out}	ADJ	$I_{out}=10\text{mA}$, $2.75\text{V} \leq V_{in} \leq 12\text{V}$		0.03	0.2	%V
		1.2V	$I_{out}=10\text{mA}$, $2.7\text{V} \leq V_{in} \leq 10\text{V}$		0.03	0.2	
		1.5V	$I_{out}=10\text{mA}$, $3\text{V} \leq V_{in} \leq 10\text{V}$		0.03	0.2	
		1.8V	$I_{out}=10\text{mA}$, $3.3\text{V} \leq V_{in} \leq 12\text{V}$		0.03	0.2	
		2.5V	$I_{out}=10\text{mA}$, $4.0\text{V} \leq V_{in} \leq 12\text{V}$		0.03	0.2	
		2.85V	$I_{out}=10\text{mA}$, $4.35\text{V} \leq V_{in} \leq 12\text{V}$		0.03	0.2	
		3.3V	$I_{out}=10\text{mA}$, $4.8\text{V} \leq V_{in} \leq 12\text{V}$		0.03	0.2	
		5.0V	$I_{out}=10\text{mA}$, $6.5\text{V} \leq V_{in} \leq 12\text{V}$		0.03	0.2	

Electrical Characteristics ($T_A=25^\circ\text{C}$, unless otherwise noted.)

Parameter	Symbol	Item	Test Conditions	Min	Typ	Max	Unit	
Load Regulation	ΔV_{out}	ADJ	$V_{in} = 2.75\text{V}, 10\text{mA} \leq I_{out} \leq 1\text{A}$		2	8	mV	
		1.2V	$V_{in} = 2.7\text{V}, 10\text{mA} \leq I_{out} \leq 1\text{A}$		2	8		
		1.5V	$V_{in} = 3.0\text{V}, 10\text{mA} \leq I_{out} \leq 1\text{A}$		2	8		
		1.8V	$V_{in} = 3.3\text{V}, 10\text{mA} \leq I_{out} \leq 1\text{A}$		3	12		
		2.5V	$V_{in} = 4.0\text{V}, 10\text{mA} \leq I_{out} \leq 1\text{A}$		4	16		
		2.85V	$V_{in} = 4.35\text{V}, 10\text{mA} \leq I_{out} \leq 1\text{A}$		5	20		
		3.3V	$V_{in} = 4.8\text{V}, 10\text{mA} \leq I_{out} \leq 1\text{A}$		6	24		
		5.0V	$V_{in} = 6.5\text{V}, 10\text{mA} \leq I_{out} \leq 1\text{A}$		9	36		
Dropout Voltage	V_{drop}		$I_{out} = 100\text{mA}$		1.15	1.3	V	
			$I_{out} = 1\text{A}$		1.3	1.4		
Minimum Load Current	I_{min}	ADJ			2	10	mA	
Quiescent Current	I_q	1.2V	$V_{in} = 10\text{V}$		2	5	mA	
		1.5V	$V_{in} = 10\text{V}$		2	5		
		1.8V	$V_{in} = 12\text{V}$		2	5		
		2.5V	$V_{in} = 12\text{V}$		2	5		
		2.85V	$V_{in} = 12\text{V}$		2	5		
		3.3V	$V_{in} = 12\text{V}$		2	5		
		5.0V	$V_{in} = 12\text{V}$		2	5		
Adjust Pin Current	I_{adj}	ADJ	$V_{in} = 5\text{V}, 10\text{mA} \leq I_{out} \leq 1\text{A}$		55	120	μA	
I_{adj} Change	I_{change}	ADJ	$V_{in} = 5\text{V}, 10\text{mA} \leq I_{out} \leq 1\text{A}$		0.2	10	μA	
Temperature Coefficient	$\Delta V/\Delta T$		$V_{in} = 4.5\text{V}, I_{out} = 10\text{mA}, V_{OUT} = 3.3\text{V}$ $20^\circ\text{C} \leq T_a \leq 120^\circ\text{C}$		± 100		ppm	
Maximum Output Current	$I_{out(max)}$				1.0	1.2	A	
Power Supply Rejection Ratio	PSRR		Ripple 1.0 V_{p-p} $V_{IN} = V_{OUT} + 2\text{V},$ $I_{OUT} = 100\text{mA}$	$f = 120\text{Hz}$		60		dB
				$f = 1\text{KHz}$		62		dB
RMS Output Noise	V_{NOISE}		$10\text{Hz} \leq f \leq 100\text{kHz}, \text{No Load}$		0.005		%	
Thermal Shutdown Temperature	T_{OTSD}				220		$^\circ\text{C}$	
Thermal Shutdown Hysteresis	T_{HYOTSD}				20		$^\circ\text{C}$	

* All test are conducted under ambient temperature 25°C and within a short period of time 20ms.

* Load current smaller than minimum load current of MCT1117C-ADJ will lead to unstable or oscillation output.

Curve Characteristics

Fig.1 - MCT1117C-ADJ Line regulation

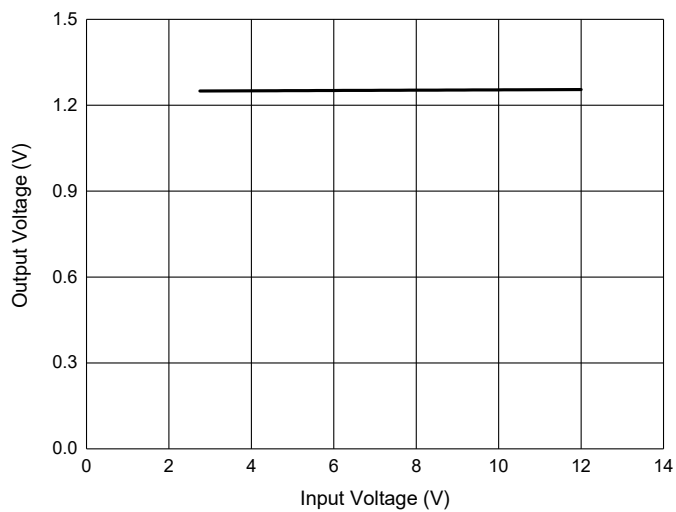


Fig.2 - MCT1117C-ADJ Load Regulation

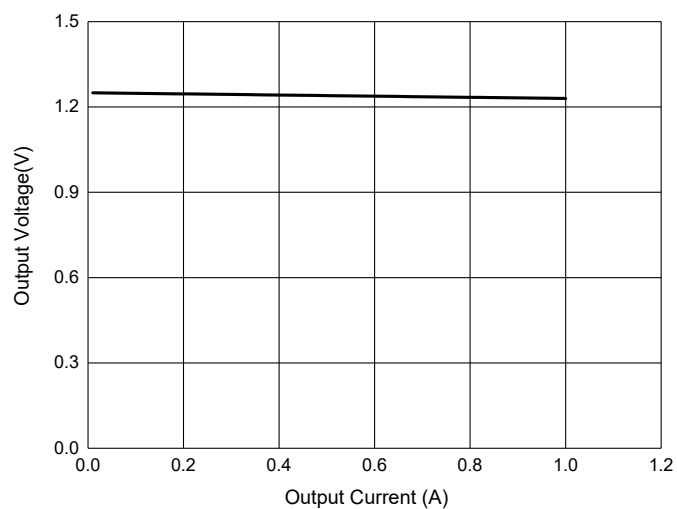


Fig.3 - MCT1117C-ADJ Dropout Voltage

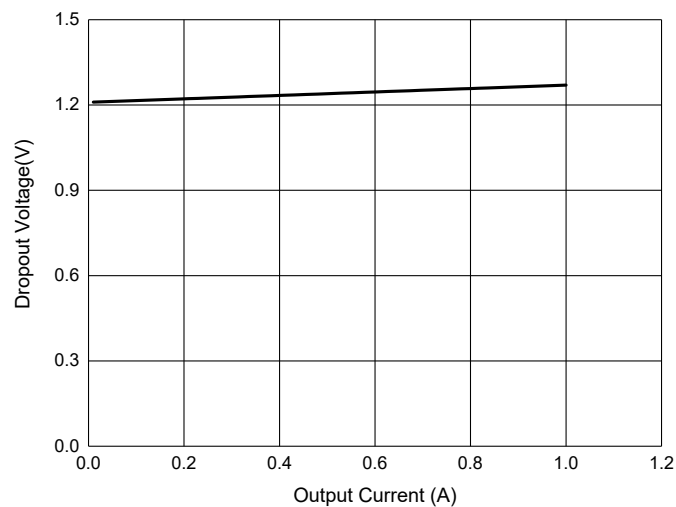
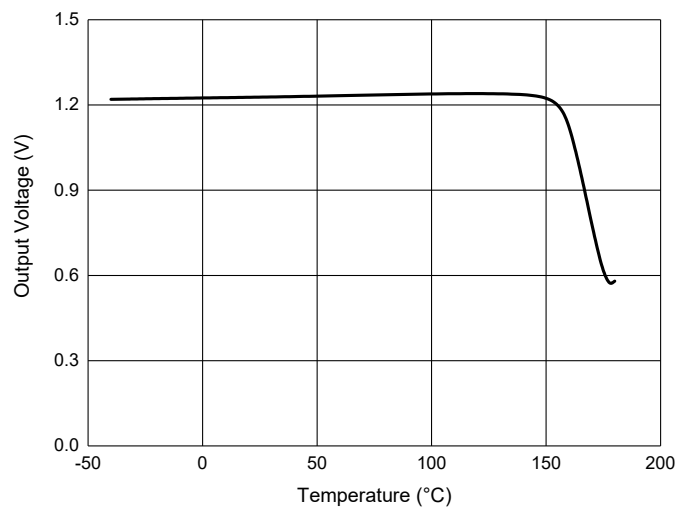


Fig. 4 - MCT1117C-ADJ Thermal Performance with OTP



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 2.5Kpcs/Reel

IMPORTANT NOTICE

Micro Commercial Components Corp. reserves the right to make changes without further notice to any product herein to make corrections, modifications, enhancements, improvements, or other changes. **Micro Commercial Components Corp.** does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold **Micro Commercial Components Corp.** and all the companies whose products are represented on our website, harmless against all damages. **Micro Commercial Components Corp.** products are sold subject to the general terms and conditions of commercial sale, as published at <https://www.mccsemi.com/Home/TermsAndConditions>.

LIFE SUPPORT

MCC's products are not authorized for use as critical components in life support devices or systems without the express written approval of Micro Commercial Components Corporation.

CUSTOMER AWARENESS

Counterfeiting of semiconductor parts is a growing problem in the industry. Micro Commercial Components (MCC) is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. MCC strongly encourages customers to purchase MCC parts either directly from MCC or from Authorized MCC Distributors who are listed by country on our web page cited below. Products customers buy either from MCC directly or from Authorized MCC Distributors are genuine parts, have full traceability, meet MCC's quality standards for handling and storage. **MCC will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources.** MCC is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.

单击下面可查看定价，库存，交付和生命周期等信息

[>>MCC\(美微科\)](#)