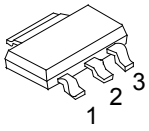
LD4117

LINEAR INTEGRATED CIRCUIT

LOW DROP FIXED AND ADJUSTABLE POSITIVE VOLTAGE REGULATORS



SOT-223

■ DESCRIPTION

The UTC **LD4117** is a low dropout, 3-terminal positive voltage regulator designed to provide output current up to 1A, There are adjustable version (V_{REF}=1.25V) and various fixed versions.

■ FEATURES

* Low dropout voltage
* Suitable for SCSI-2 active termination if V_{OUT} set to 2.85V
* Output current up to 1A
* Built-in current limit and over temperature protection
* Low current consumption
* Support MLCC

■ ORDERING INFORMATION

Ordering Number		Package	①	②
Lead Free	Halogen Free		Pin Assignment	Packing
LD4117L-xx-AA3-①-R	LD4117G-xx-AA3-①-R	SOT-223	(see below)	R: Tape Reel

Pin Code	1	2	3
A	G	O	I
B	O	G	I
C	G	I	O
D	I	G	O

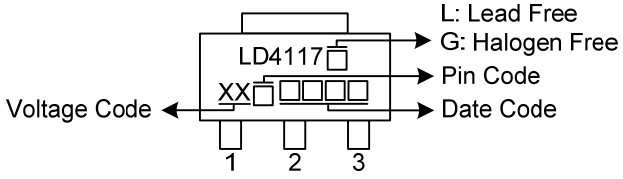
Notes: 1. Pin Assignment: I: V_{IN} O: V_{OUT} G: GND
2. xx: Output Voltage.

LD4117G-xx-AA3-①-②

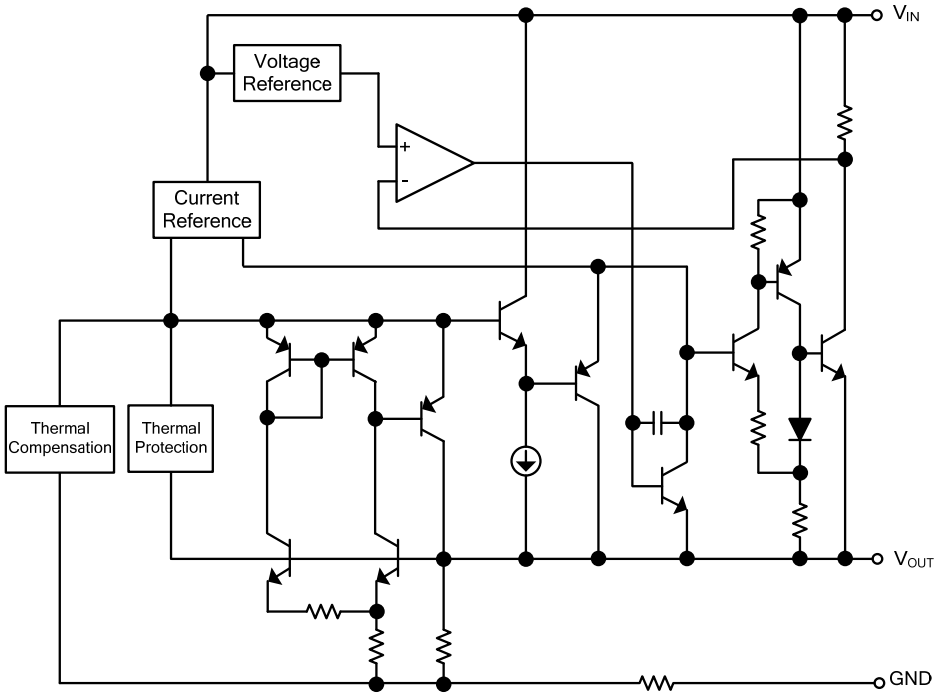
(1)Packing Type
(2)Pin Assignment
(3)Package Type
(4)Output Voltage Code
(5)Green Package

(1) R: Tape Reel
(2) refer to Pin Assignment
(3) AA3: SOT-223
(4) xx: refer to Marking Information
(5) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING INFORMATION

PACKAGE	VOLTAGE CODE	MARKING
SOT-223	33: 3.3V	

■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS (T_A=25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
DC Input Voltage	V_{IN}	20	V
Power Dissipation	P_D	Internally limited	
Junction Temperature	T_J	+150	°C
Operating Temperature (Note 2)	T_{OPR}	-40 ~ +125	°C
Storage temperature	T_{STG}	-65 ~ +150	°C

Notes: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.
2. This condition is only determined from design. It can't be 100% tested in mass production.

■ RECOMMENDED OPERATING RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT
Input Voltage	V_{IN}	18	V
Operating Junction Temperature	T_J	-40 ~ +125	°C

■ THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	165	°C/W
Junction to Case	θ_{JC}	15	°C/W

■ ELECTRICAL CHARACTERISTICS

(T_A=25°C, refer to the test circuits, C_O=10μF, unless otherwise specified)

For LD4117-3.3

PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Output Voltage	V_{OUT}	V_{IN}=5.3V, I_{OUT}=10mA, T_J=25°C	3.234	3.300	3.366	V
Output Voltage	V_{OUT}	V_{IN}=4.75 to 10V, I_{OUT}=0~1A	3.234	3.300	3.366	V
Line Regulation	ΔV_{OUT}	V_{IN}=4.75 to 18V, I_{OUT}=0mA		1	6	mV
Load Regulation	ΔV_{OUT}	V_{IN}=4.75V, I_{OUT}=0~1A		1	10	mV
Temperature stability	ΔV_{OUT}			0.5		%
Long Term Stability	ΔV_{OUT}	1000 hrs, T_J=125°C		0.3		%
Operating Input Voltage	V_{IN}	I_{OUT}=100mA			18	V
Quiescent Current	I_Q	V_{IN}≤18V		5	10	mA
Current Limit	I_{LIMIT}	V_{IN}=8.3V, T_J=25°C	1			A
Output Noise Voltage	e_N	B=10Hz to 10KHz, T_J=25°C		100		μV
Supply Voltage Rejection	SVR	I_{OUT}=40mA, f=120Hz, T_J=25°C, V_{IN}=6.3V, V_{RIPPLE}=1V_{PP}	60	75		dB
Dropout Voltage	V_D	I_{OUT}=100mA		1.00	1.10	V
		I_{OUT}=500mA		1.15	1.25	V
		I_{OUT}=800mA		1.20	1.30	V
		I_{OUT}=1A		1.20	1.30	V
Thermal Regulation		T_A=25°C, 30ms Pulse		0.01	0.10	%/W

■ TYPICAL APPLICATIONS

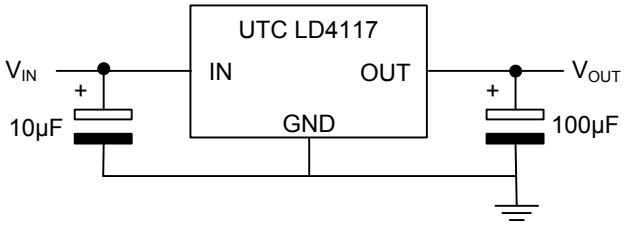


Fig.1 Tyncal Application Circuit

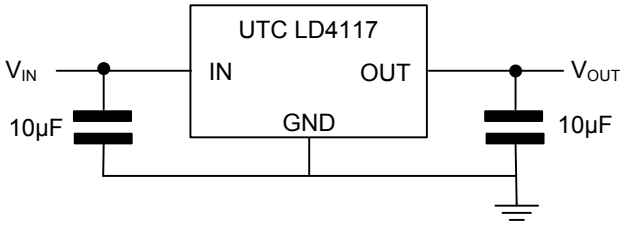


Fig.2 Tyncal Application Circuit (FOR MLCC)

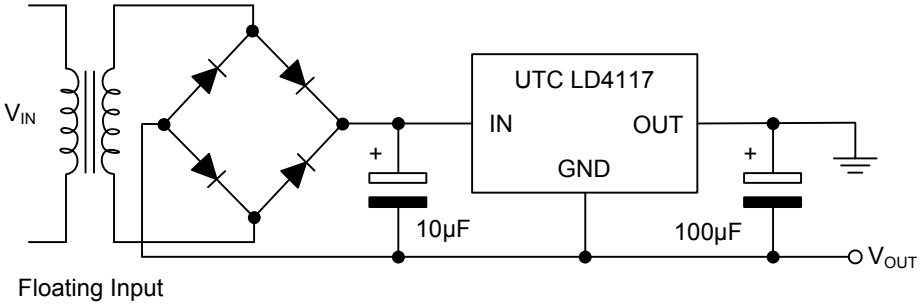


Fig.3 Negative Supply

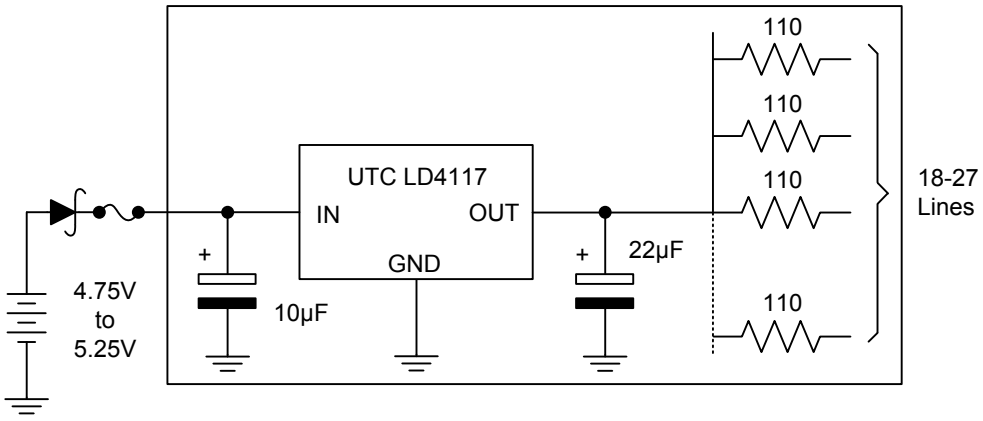


Fig.4 Active Terminator for SCSI-2 BUS

■ TYPICAL APPLICATIONS (Cont.)

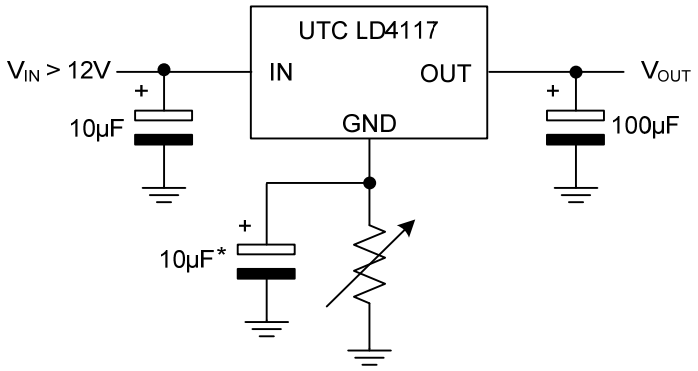
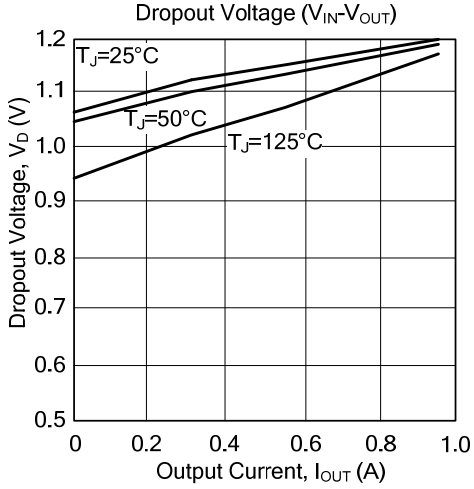


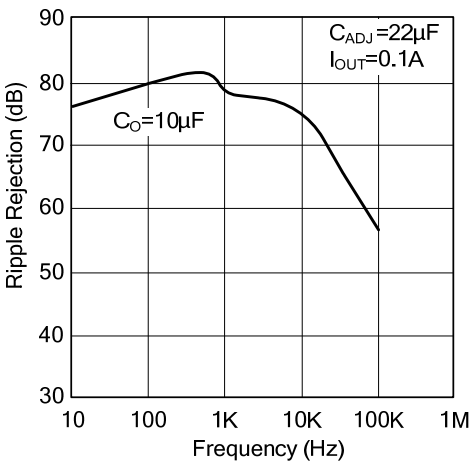
Fig.5 Circuit for Increasing Output Voltage

■ TYPICAL CHARACTERISTICS

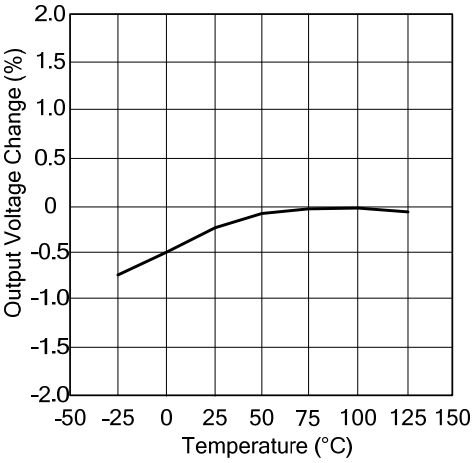
Dropout Voltage (V_{IN}-V_{OUT})



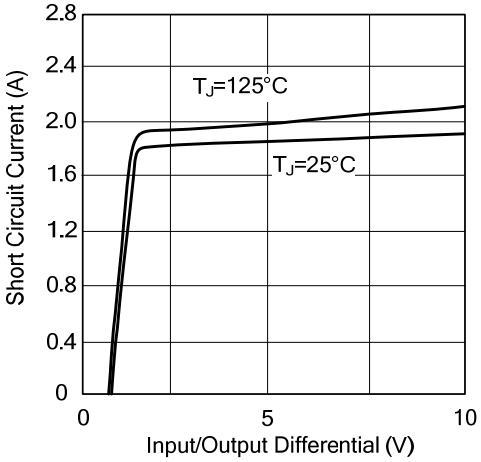
Ripple Rejection



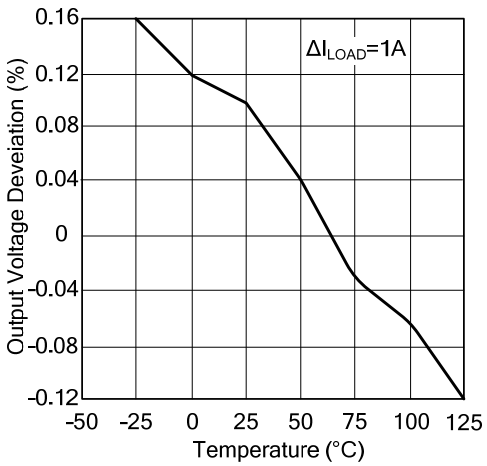
Temperature Stability



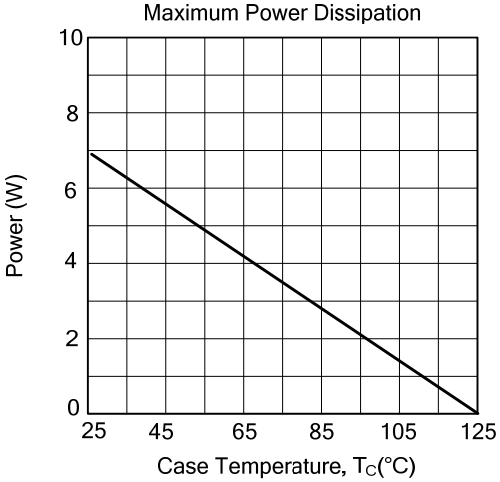
Short-Circuit Current



Load Regulation



Maximum Power Dissipation



■ TYPICAL CHARACTERISTICS (Cont.)