

UNISONIC TECHNOLOGIES CO., LTD

LD1117/A

LINEAR INTEGRATED CIRCUIT

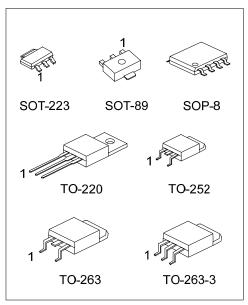
LOW DROP FIXED AND ADJUSTABLE POSITIVE VOLTAGE REGULATORS

DESCRIPTION

The UTC LD1117/A is a low dropout, 3-terminal positive voltage regulator designed to provide output current up to 800mA/1A, There are adjustable version (V_{REF}=1.25V) and various fixed versions.

FEATURES

- * Low dropout voltage
- * Suitable for SCSI-2 active termination if Vou⊤ set to 2.85V
- * Output current up to 0.8A for 1117 and 1.0A for 1117A
- * Built-in current limit and over temperature protection
- * Available in $\pm 1\%$ (at 25°C) and 2% in all temperature range
- * Low current consumption

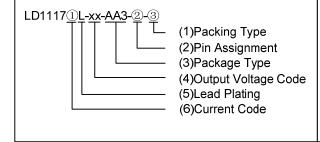


*Pb-free plating product number: LD1117L-xx / LD1117AL-xx

ORDERING INFORMATION

Order I	Number	Dookogo	2	3
Normal	Lead Free Plating Package Pin Assignment LD11170 Lxx AA3 2 3 SOT 223		Packing	
LD1117①-xx-AA3-②-③	LD1117①L-xx-AA3-②-③	SOT-223		
LD1117①-xx-AB3-②-③	LD1117①L-xx-AB3-②-③	SOT-89	A: GOI	
LD1117①-xx-TA3-②-③	LD1117①L-xx-TA3-②-③	TO-220	B: OGI	D. Tono Dool
LD1117①-xx-TN3-②-③	LD1117①L-xx-TN3-②-③	TO-252	(.' (¬(()	R: Tape Reel T: Tube
LD1117①-xx-TQ2-②-③	LD1117①L-xx-TQ2-②-③	TO-263	D: IGO	i. Tube
LD1117①-xx-TQ3-②-③	LD1117①L-xx-TQ3-②-③	TO-263-3		
LD1117①-xx-S08-②-③	LD1117①L-xx-S08-②-③	SOP-8	GOOIxOOx	

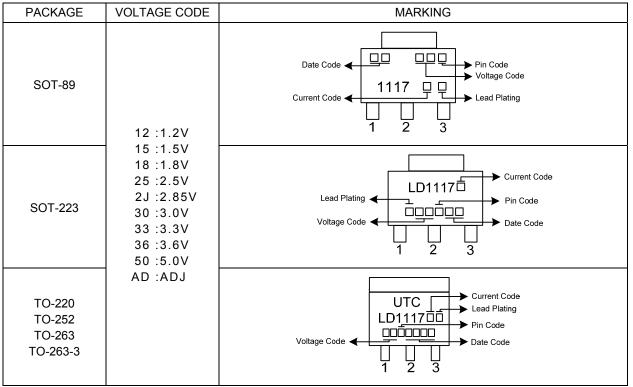
Note: Pin Assignment: I:V_{IN} O:V_{OUT} G:GND



- (1) R: Tape Reel, T: Tube
- (2) refer to Pin Assignment
- (3) AA3: SOT-223, AB3: SOT-89, TA3:TO-220, TN3: TO-252, TQ2: TO-263, TQ3: TO-263-3, S08: SOT-8
- (4) xx: refer to Marking Information
- (5) L: Lead Free Plating, Blank: Pb/Sn
- (6) Blank: 800mA, A: 1A

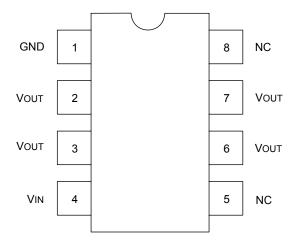
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MARKING INFORMATION

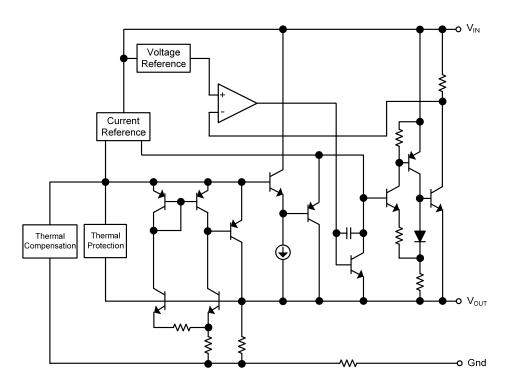


Note: Current code: Blank: 0.8A A: 1A

■ PIN CONFIGURATION



■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
DC Input Voltage	V_{IN}	18	V
Power Dissipation	P_{D}	Internally limited	
Junction Temperature	TJ	+150	°C
Storage temperature	T_{STG}	-65 ~ +150	°C

Note 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.

■ RECOMMENDED OPERATING RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT
Input Voltage	V_{IN}	15	٧
Operating Junction Temperature Range	TJ	0 ~ +125	°C

■ ELECTRICAL CHARACTERISTICS

(Ta=25°C, refer to the test circuits, TJ=0 to 125°C, Co=10 μ F unless otherwise specified)

For LD1117/A-1.2

PARAMETER	SYMBOL	TEST CONDITIO	NS	MIN.	TYP.	MAX.	UNIT
Output Voltage	V_{OUT}	V_{IN} =3.2V, I_{OUT} =10mA, T_{J} =	=25°C	1.188	1.200	1.212	V
		V _{IN} =2.7 to 8V					
Output Voltage	V_{OUT}	LD1117 : I _{OUT} =0 ~ 800n	nΑ	1.176	1.200	1.224	V
		LD1117A : I _{OUT} =0 ~ 1.0A					
Line Regulation	ΔV_{OUT}	V_{IN} =2.7 to 8V, I_{OUT} =0mA			1	6	mV
		V _{IN} =2.7V					
Load Regulation	ΔV_{OUT}	LD1117 : I _{OUT} =0 ~ 800mA			1	10	mV
		LD1117A : I _{OUT} =0 ~ 1000	D1117A : Ι _{Ουτ} =0 ~ 1000mA				
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			15	V	
Quiescent Current	IQ	V _{IN} ≤10V			5	10	mA
Current Limit	I _{LIMIT}	V_{IN} =6.2V, T_J =25°C LD1117		800			mA
Current Limit	ILIMIT			1000			ША
Minimum Load Current	I _{O(MIN)}	V _{IN} =15V			2	5	mA
Output Noise Voltage	eN	B=10Hz to 10KHz, T _J =25	5°C		100		μV
Supply Voltage Rejection	SVR	I_{OUT} =40mA, f=120Hz, T_{J} :	=25°C,	60	75		dB
Cupply Voltage (Vejection)	OVIX	V _{IN} =4.2V, V _{RIPPLE} =1Vpp			7.0		ub_
		I _{OUT} =100mA			1.00	1.10	V
Dropout Voltage	V_D	I _{OUT} =500mA			1.15	1.25	V
2. opear voltage	•	I _{OUT} =800mA			1.20	1.30	V
		I _{OUT} =1000 mA			1.20	1.30	V
Thermal Regulation		Ta=25°C, 30ms Pulse			0.01	0.10	%/W

For LD1117/A-1.5

PARAMETER	SYMBOL	TEST CONDITI	ONS	MIN.	TYP.	MAX.	UNIT
Output Voltage		V _{IN} =3.5V, I _{OUT} =10mA, T _.		1.485	1.500	1.515	V
Output Voltage		V _{IN} =3 to 8V	D1117 : I _{OUT} =0 ~ 800mA .D1117A : I _{OUT} =0 ~ 1.0A			1.530	V
Line Regulation	ΔV_{OUT}	V _{IN} =3 to 8V, I _{OUT} =0mA			1	6	mV
Load Regulation		V _{IN} =3V LD1117 : I _{OUT} =0 ~ 800mA LD1117A : I _{OUT} =0 ~ 1000mA			1	10	mV
Temperature stability	ΔV_{OUT}			0.5		%	
Long Term Stability	ΔV_{OUT}	1000 hrs, T _J =125°C	1000 hrs, T _J =125°C		0.3		%
Operating Input Voltage	V_{IN}	I _{OUT} =100mA	I _{OUT} =100mA			15	V
Quiescent Current	IQ	V _{IN} ≤10V			5	10	mA
Current Limit	I _{LIMIT}	V _{IN} =6.5V, T _J =25°C	LD1117 LD1117A	800 1000			mA
Output Noise Voltage	eN	B=10Hz to 10KHz, T _J =2	25°C		100		μV
Supply Voltage Rejection	SVR	I _{OUT} =40mA, f=120Hz, T _J V _{IN} =4.5V, V _{RIPPLE} =1Vpp		60	75		dB
Dropout Voltage	V _D	I _{OUT} =100mA I _{OUT} =500mA I _{OUT} =800mA I _{OUT} =1000 mA			1.00 1.15 1.20 1.20	1.10 1.25 1.30 1.30	V V V
Thermal Regulation		Ta=25°C, 30ms Pulse			0.01	0.10	%/W

For LD1117/A-1.8

PARAMETER	SYMBOL	TEST CONDITION	DNS	MIN.	TYP.	MAX.	UNIT
Output Voltage	V _{OUT}	V_{IN} =3.8V, I_{OUT} =10mA, T_{J}	=25°C	1.780	1.800	1.820	V
Output Voltage	V _{OUT}	V_{IN} =3.3 to 8V LD1117 : I_{OUT} =0 ~ 800n LD1117A : I_{OUT} =0 ~ 1000		1.760	1.800	1.840	V
Line Regulation	ΔV_{OUT}	V_{IN} =3.3 to 8V, I_{OUT} =0mA			1	6	mV
Load Regulation		V_{IN} =3.3 V LD1117 : I_{OUT} =0 ~ 800n LD1117A : I_{OUT} =0 ~ 1000			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				10	V
Quiescent Current	I_Q	V _{IN} ≤8V			5	10	mΑ
Current Limit	I _{LIMIT}	V _{IN} =6.8V, T _J =25°C	LD1117 LD1117A	800 1000			mA
Output Noise Voltage	eN	B=10Hz to 10KHz, T _J =25	5°C		100		μV
Supply Voltage Rejection	SVR	I_{OUT} =40mA, f=120Hz, T_{J} : V_{IN} =5.5V, Vripple=1Vpp	=25°C,	60	75		dB
		I _{OUT} =100mA			1.00	1.10	V
Dropout Voltago	V_D	I _{OUT} =500mA			1.15	1.25	V
Dropout Voltage	V D	I _{OUT} =800mA			1.20	1.30	V
		I _{OUT} =1000 mA			1.20	1.30	V
Thermal Regulation		Ta=25°C, 30ms Pulse			0.01	0.10	%/W

For LD1117/A-2.5

I OI EDITITA-Z.3							
PARAMETER	SYMBOL	TEST CONDITION	S	MIN.	TYP.	MAX.	UNIT
Output Voltage	\ \ <u>\</u>	V_{IN} =4.5 V , I_{OUT} =10 mA ,	1%	2.475	2.500	2.525	V
Output Voltage	V _{OUT}	T _J =25°C	2%	2.450	2.500	2.550	V
		V _{IN} =3.9 to 10V	2%	2.450	2.500	2.550	
Output Voltage	V _{OUT}	LD1117 : $I_{OUT}=0 \sim 800 \text{mA}$		2 400	2.500		V
		LD1117A : I _{OUT} =0 ~ 1.0A	4%	2.400	2.500	2.600	
Line Regulation	ΔV_{OUT}	V_{IN} =3.9 to 10V, I_{OUT} =0mA			1	6	mV
		V _{IN} =3.9V					
Load Regulation	ΔV_{OUT}	LD1117 : I _{OUT} =0 ~ 800mA		1	10	mV	
		LD1117A : I _{OUT} =0 ~ 1000m					
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				15	V
Quiescent Current	IQ	V _{IN} ≤10V			5	10	mA
Commont Limit		V -7.5V T -25°C	01117	800			A
Current Limit	I _{LIMIT}	V_{IN} =7.5V, T_J =25°C	D1117A	1000			mA
Output Noise Voltage	eN	B=10Hz to 10KHz, T _J =25°0)		100		μV
Supply Voltage Rejection	SVR	I _{OUT} =40mA, f=120Hz, T _J =2	5°C,	60	75		dB
- Cappiy Voltage (Vejeotion	OVIC	V _{IN} =5.5V, Vripple=1Vpp		- 00	,,,		ub.
		I _{OUT} =100mA			1.00	1.10	V
Dropout Voltage	V_D	I _{OUT} =500mA			1.15	1.25	V
Diopout voitage	V _D	I _{OUT} =800mA			1.20	1.30	V
		I _{OUT} =1000 mA			1.20	1.30	V
Thermal Regulation		Ta=25°C, 30ms Pulse			0.01	0.10	%/W

For LD1117/A-2.85

PARAMETER	SYMBOL	TEST CONDITI	ONS	MIN.	TYP.	MAX.	UNIT
Output Voltage	V _{OUT}	V _{IN} =4.85V, I _{OUT} =10mA,	T _J =25°C	2.828	2.850	2.880	V
Output Voltage	V _{OUT}		V _{IN} =4.25 to 10V LD1117 : I _{OUT} =0 ~ 800mA LD1117A : I _{OUT} =0 ~ 1.0A		2.850	2.910	V
Line Regulation	ΔV_{OUT}	V _{IN} =4.25 to 10V, Io=0mA			1	6	mV
Load Regulation	ΔV_OUT	V _{IN} =4.25V LD1117 : I _{OUT} =0 ~ 800mA LD1117A : I _{OUT} =0 ~ 1000mA			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				15	V
Quiescent Current	I_{Q}	V _{IN} ≤10V			5	10	mA
Current Limit	I _{LIMIT}	V _{IN} =7.85V, T _J =25°C	LD1117 LD1117A	800 1000			mA
Output Noise Voltage	eN	B=10Hz to 10KHz, T _J =2	25°C		100		μV
Supply Voltage Rejection	SVR	I _{OUT} =40mA, f=120Hz, T _. V _{IN} =5.85V, Vripple=1Vp	•	60	75		dB
Dropout Voltage	V _D	I _{OUT} =100mA I _{OUT} =500mA I _{OUT} =800mA I _{OUT} =1000 mA			1.00 1.15 1.20 1.20	1.10 1.25 1.30 1.30	V V V
Thermal Regulation		Ta=25°C, 30ms Pulse			0.01	0.10	%/W

For LD1117/A-3.0

101 LD11111A-3.0							
PARAMETER	SYMBOL	TEST CONDITION:	S	MIN.	TYP.	MAX.	UNIT
Output Voltage	\ \ <u>\</u>	 V _{IN} =5V,I _{OUT} =10mA,T _J =25°(1%	2.970	3.000	3.030	V
Output Voltage	V _{OUT}	V _{IN} -5V,I _{OUT} -1UIIIA,I _J =25°C	2%	2.940	3.000	3.060	V
		V _{IN} =4.5 to 10V	2%	2.940	3.000	3.060	
Output Voltage	V_{OUT}	LD1117 : I _{OUT} =0 ~ 800mA					V
		LD1117A : I _{OUT} =0 ~ 1.0A	4%	2.880	3.000	3.120	
Line Regulation	ΔV_{OUT}	V _{IN} =4.5 to 12V, I _{OUT} =0mA			1	6	mV
		V _{IN} =4.5V					
Load Regulation	ΔV_{OUT}	LD1117 : I _{OUT} =0 ~ 800mA	mA		1	10	mV
		LD1117A : I _{OUT} =0 ~ 1000m/	4				
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				15	V
Quiescent Current	ΙQ	V _{IN} ≤10V			5	10	mA
Current Limit		V -9V T -35°C	01117	800			m 1
Current Limit	I _{LIMIT}	V_{IN} =8V, T_J =25°C	01117A	1000			mA
Output Noise Voltage	eN	B=10Hz to 10KHz, $T_J = 25^{\circ}$ C)		100		μV
Cumply Voltage Dejection	C) /D	I _{OUT} =40mA, f=120Hz, T _J =2	5°C,	60	75		40
Supply Voltage Rejection	SVR	V _{IN} =6V, V _{RIPPLE} =1Vpp		60	75		dB
		I _{OUT} =100mA			1.00	1.10	V
Dranaut Valtaria		I _{OUT} =500mA			1.15	1.25	V
Dropout Voltage	V_D	I _{OUT} =800mA			1.20	1.30	V
		I _{OUT} =1000 mA			1.20	1.30	V
Thermal Regulation		Ta=25°C, 30ms Pulse			0.01	0.10	%/W

For LD1117/A-3.3

PARAMETER	SYMBOL	TEST CONDITIONS	3	MIN.	TYP.	MAX.	UNIT
Output Voltago	V	V _{IN} =5.3V,I _{OUT} =10mA,	1%	3.267	3.300	3.333	V
Output Voltage	V _{OUT}	T _J =25°C	2%	3.235	3.300	3.365	V
		V _{IN} =4.75 to 10V	2%	3.235	3.300	3.365	
Output Voltage	V _{оит}	LD1117 : I _{OUT} =0 ~ 800mA LD1117A : I _{OUT} =0 ~ 1.0A	4%	3.160	3.300	3.440	V
Line Regulation	ΔV_{OUT}	V_{IN} =4.75 to 15V, I_{OUT} =0mA			1	6	mV
Load Regulation	ΔV_OUT	V _{IN} =4.75V LD1117 : I _{OUT} =0 ~ 800mA LD1117A : I _{OUT} =0 ~ 1000mA			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				15	V
Quiescent Current	ΙQ	V _{IN} ≤15V			5	10	mA
Current Limit	I _{LIMIT}	IV _{IN} =8.3V. I ₁ =25°C)1117)1117A	800 1000			mA
Output Noise Voltage	eN	B=10Hz to 10KHz, T _J =25°C	;		100		μV
Supply Voltage Rejection	SVR	I_{OUT} =40mA, f=120Hz, T _J =25 V _{IN} =6.3V, V _{RIPPLE} =1Vpp	5°C,	60	75		dB
		I _{OUT} =100mA			1.00	1.10	V
Dropout Voltage	V_D	I _{OUT} =500mA			1.15	1.25	V
Diopout voitage	v _D	I _{OUT} =800mA			1.20	1.30	V
		I _{OUT} =1000 mA			1.20	1.30	V
Thermal Regulation		Ta=25°C, 30ms Pulse			0.01	0.10	%/W

For LD1117/A-3.6

PARAMETER	SYMBOL	TEST CONDIT	TIONS	MIN.	TYP.	MAX.	UNIT
Output Voltage	Vout	V _{IN} =5.6V, I _{OUT} =10mA,	T」=25°C	3.564	3.600	3.636	V
Output Voltage	V _{OUT}		_D1117 : I _{OUT} =0 ~ 800mA _D1117A : I _{OUT} =0 ~ 1.0A		3.600	3.672	V
Line Regulation	ΔV_{OUT}	V _{IN} =5 to 15V, I _{OUT} =0m	4		1	6	mV
Load Regulation	ΔV_OUT	V _{IN} =5V LD1117 : I _{OUT} =0 ~ 800mA LD1117A : I _{OUT} =0 ~ 1000mA			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	I _{OUT} =100mA			15	V
Quiescent Current	ΙQ	V _{IN} ≤15V			5	10	mA
Current Limit	I _{LIMIT}	V _{IN} =8.6V, Tj=25°C	LD1117 LD1117A	800 1000			mA
Output Noise Voltage	eN	B=10Hz to 10KHz, T _J =	=25°C		100		μV
Supply Voltage Rejection	SVR	I _{OUT} =40mA, f=120Hz, ⁻ V _{IN} =6.6V, V _{RIPPLE} =1Vp		60	75		dB
Dropout Voltage	V _D	I _{OUT} =100mA I _{OUT} =500mA I _{OUT} =800mA I _{OUT} =1000 mA			1.00 1.15 1.20 1.20	1.10 1.25 1.30 1.30	V V V
Thermal Regulation		Ta=25°C, 30ms Pulse			0.01	0.10	%/W

For LD1117/A-5.0

1 01 ED1111/A-3.0							
PARAMETER	SYMBOL	TEST CONDITIONS	1	MIN.	TYP.	MAX.	UNIT
Output Voltage	\/	\/ -7\/	1%	4.950	5.000	5.050	V
Output Voltage	V _{OUT}	$V_{IN}=7V,I_{OUT}=10$ mA, $T_J=25$ °C		4.900	5.000	5.100	V
		V _{IN} =6.5 to 15V	2%	4.900	5.000	5.100	
Output Voltage		LD1117 : I _{OUT} =0 ~ 800mA LD1117A : I _{OUT} =0 ~ 1.0A	4%	4.800	5.000	5.200	V
Line Regulation		V _{IN} =6.5 to 15V, I _{OUT} =0mA	•		1	6	mV
Load Regulation		V _{IN} =6.5V LD1117 : I _{OUT} =0 ~ 800mA LD1117A : I _{OUT} =0 ~ 1000mA			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				15	V
Quiescent Current	IQ	V _{IN} ≤15V			5	10	mA
Current Limit	I _{LIMIT}	IV _{INI} =10V. I ₁ =25°C	1117 1117A	800 1000			mA
Output Noise Voltage	eN	B=10Hz to 10KHz, T _J =25°C			100		μV
Supply Voltage Rejection	SVR	I_{OUT} =40mA, f=120Hz, T_J =25 V_{IN} =8V, V_{RIPPLE} =1Vpp	°C,	60	75		dB
		I _{OUT} =100mA			1.00	1.10	V
Dropout Voltage	V_D	I _{OUT} =500mA			1.15	1.25	V
Propout voitage	v _D	I _{OUT} =800mA			1.20	1.30	V
		I _{OUT} =1000 mA			1.20	1.30	V
Thermal Regulation		Ta=25°C, 30ms Pulse			0.01	0.10	%/W

For LD1117/A-ADJUSTABLE

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT	
Reference Voltage	V_{REF}	V _{IN} -V _{OUT} =2V, I _{OUT} =10mA	1.238	1.25	1.262	V	
Reference Voltage	V_{REF}	V _{IN} -V _{OUT} =1.4 to 10V LD1117 : I _{OUT} =10 ~ 800 LD1117A : I _{OUT} =10 ~ 100	1.225		1.275	٧	
Line Regulation	ΔV_{OUT}	V_{IN} - V_{OUT} =1.5 to 13.75V, I		0.035	0.200	%	
Load Regulation	ΔV_OUT	V _{IN} -V _{OUT} =3V LD1117 : I _{OUT} =10 ~ 800 LD1117A : I _{OUT} =10 ~ 100		0.10	0.400	%	
Temperature stability	ΔV_{OUT}				0.50		%
Long Term Stability	ΔV_{OUT}	1000 hrs, T _J =125°C			0.3		%
Operating Input Voltage	V_{IN}					15	V
Adjustment Pin Current	I_{ADJ}	V _{IN} ≤15V			60	120	μΑ
Adjustment Pin Current Change	ΔI_{ADJ}	V _{IN} -V _{OUT} =1.4 to 10V, LD1117 : I _{OUT} =10 ~ 800mA LD1117A : I _{OUT} =10 ~ 1000mA			1	5	μΑ
Minimum Load Current	I _{O(MIN)}	V _{IN} =15V			2	5	mA
Current Limit	I _{LIMIT}	V _{IN} -V _{OUT} =5V, T _J =25°C	LD1117 LD1117A	800 1000			mA
Output Noise (%Vo)	eN	B=10Hz to 10KHz, T _J =25°C			0.003		%
Supply Voltage Rejection	SVR	I_{OUT} =40mA, f=120Hz, T_J =25°C, V_{IN} - V_{OUT} =3V, V_{II} pple=1Vpp		60	75		dB
Dropout Voltage	V _D	I _{OUT} =100mA I _{OUT} =500mA I _{OUT} =800mA I _{OUT} =1000mA			1.00 1.15 1.20 1.20	1.10 1.25 1.30 1.30	> > >
Thermal Regulation		Ta=25°C, 30ms Pulse			0.01	0.10	%/W

■ THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT		
	SOT-223		15	 -	
	SOP-8		20		
Thermal Resistance Junction-Case	TO-252 θ _{JC}	θ_{JC}	12	°C/W	
	TO-220		4		
	TO-263		4		
	SOT-223		165		
	SOP-8		150	°C/W	
Thermal Resistance Junction-Ambient	TO-252	θ_{JA}	112		
	TO-220		54		
	TO-263		64		

■ TYPICAL APPLICATIONS

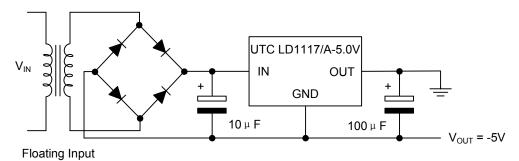


FIG.1 Negative Supply

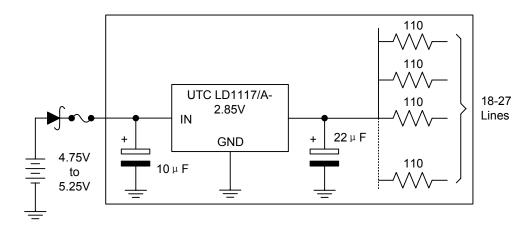
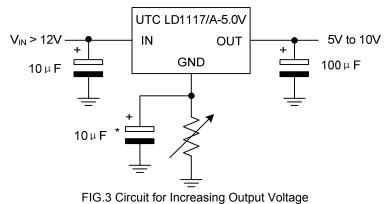


FIG.2 Active Terminator for SCSI-2 BUS



rig.3 Circuit for increasing Output Voltage

■ APPLICATION NOTE of LD1117/A ADJUSTABLE

The LD1117/A ADJUSTABLE has a reference voltage of between the OUT and ADJ pins. I_{ADJ} is $60\mu A$ typ. (120 μA max.) and ΔI_{ADJ} is $1\mu A$ typ. (5 μA max.).

R1 is normally fixed to 120Ω .

From figure 4 we obtain:

 $V_{OUT} = V_{REF} + R2(I_{ADJ} + I_{R1}) = V_{REF} + R2(I_{ADJ} + V_{REF} / R1) = V_{REF}(1 + R2/R1) + R2 \times I_{ADJ}$

Usually R2 value is in the range of few K Ω , so the R2 X I_{ADJ} product could be neglected; then the above expression becomes: $V_{OUT}=V_{REF}(1+R2/R1)$

For better load regulation, realize a good Kelvin connection of R1 and R2 is important. Particularly R1 connection must be realized very close to OUT and ADJ pin, while R2 ground connection must be placed as near as possible to the negative Load pin. Ripple rejection can be improved by introducing a $10\mu F$ electrolytic capacitor placed in parallel to the R2 resistor (See Fig. 5)

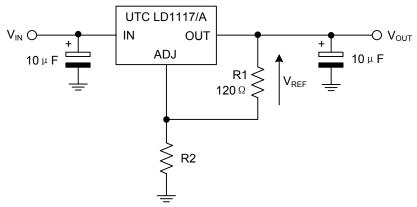


FIG.4 Adjustable Output Voltage Application Circuit

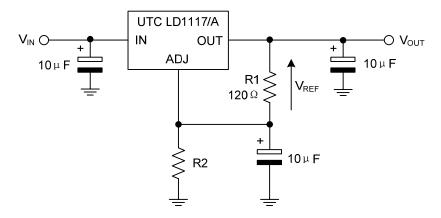
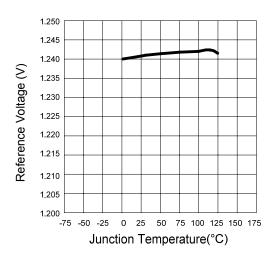


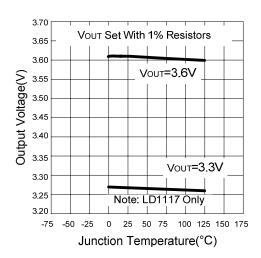
FIG.5 Adjustable Output Voltage Application with improved Ripple Rejection.

■ TYPICAL PERFORMANCE CHARACTERISTICS

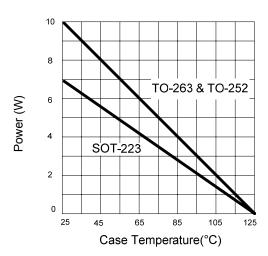
Reference Voltge vs. Temperature



Output Voltage vs. Temperautre



Maximum Power Dissipation



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