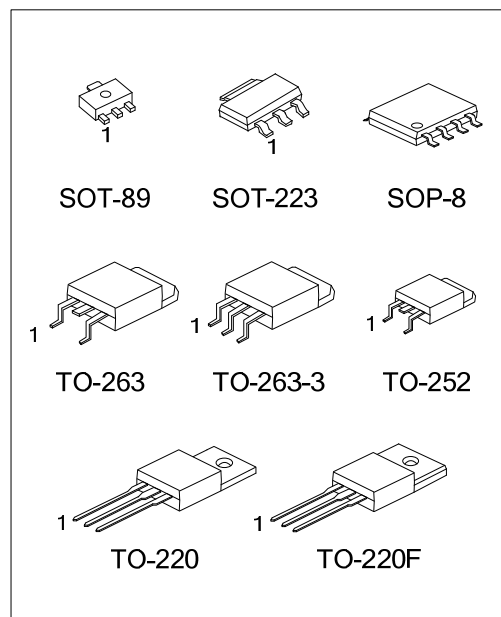


**LD1117/A****LINEAR INTEGRATED CIRCUIT****LOW DROP FIXED AND
ADJUSTABLE POSITIVE
VOLTAGE REGULATORS****DESCRIPTION**

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 V_{OUT} 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
- * Support MLCC

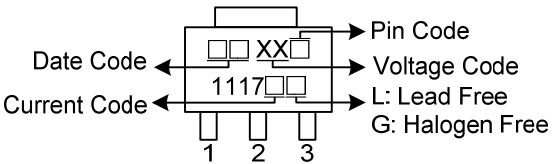
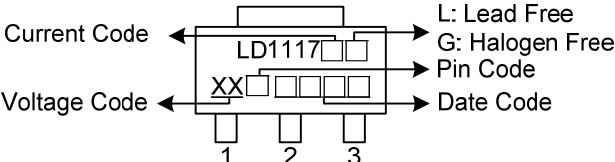
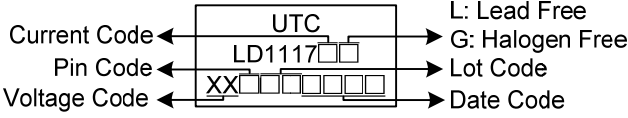
**ORDERING INFORMATION**

Ordering Number		Package	②				③																				
Lead Free	Halogen Free		Pin Assignment					Packing																			
LD1117①L-xx-AA3-②-③	LD1117①G-xx-AA3-②-③	SOT-223	<table><tr><td>Pin Code</td><td>1</td><td>2</td><td>3</td></tr><tr><td>A</td><td>G</td><td>O</td><td>I</td></tr><tr><td>B</td><td>O</td><td>G</td><td>I</td></tr><tr><td>C</td><td>G</td><td>I</td><td>O</td></tr><tr><td>D</td><td>I</td><td>G</td><td>O</td></tr></table>				Pin Code	1	2	3	A	G	O	I	B	O	G	I	C	G	I	O	D	I	G	O	R: Tape Reel T: Tube
Pin Code	1	2					3																				
A	G	O					I																				
B	O	G					I																				
C	G	I					O																				
D	I	G					O																				
LD1117①L-xx-AB3-②-③	LD1117①G-xx-AB3-②-③	SOT-89																									
LD1117①L-xx-TA3-②-③	LD1117①G-xx-TA3-②-③	TO-220																									
LD1117①L-xx-TF3-②-③	LD1117①G-xx-TF3-②-③	TO-220F																									
LD1117①L-xx-TN3-②-③	LD1117①G-xx-TN3-②-③	TO-252																									
LD1117①L-xx-TQ2-②-③	LD1117①G-xx-TQ2-②-③	TO-263																									
LD1117①L-xx-TQ3-②-③	LD1117①G-xx-TQ3-②-③	TO-263-3																									
LD1117①L-xx-S08-②-③	LD1117①G-xx-S08-②-③	SOP-8	GOOIxOOx																								

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

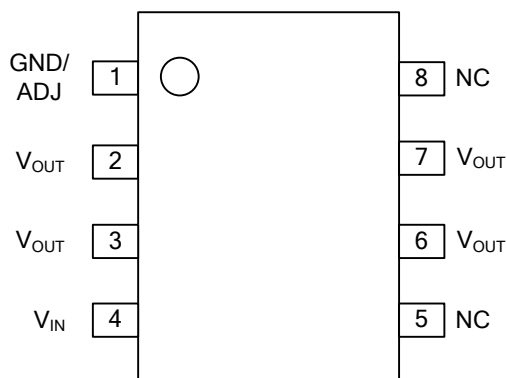
	(1) R: Tape Reel, T: Tube
	(2) refer to Pin Assignment
	(3) AA3: SOT-223, AB3: SOT-89, TA3: TO-220, TF3: TO-220F, TN3: TO-252, TQ2: TO-263, TQ3: TO-263-3, S08: SOP-8
	(4) xx: refer to Marking Information
	(5) G: Halogen Free, L: Lead Free
	(6) Blank: 800mA, A: 1A

MARKING INFORMATION

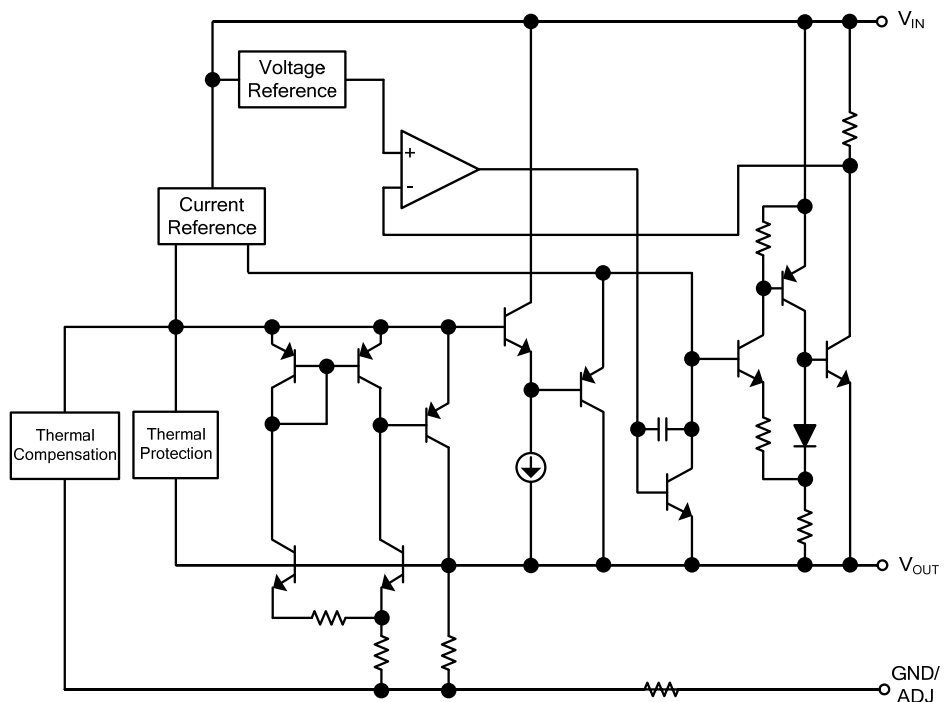
PACKAGE	VOLTAGE CODE	MARKING
SOT-89		
SOT-223	12 :1.2V 15 :1.5V 18 :1.8V 25 :2.5V 2J :2.85V 30 :3.0V 33 :3.3V 36 :3.6V 50 :5.0V AD :ADJ	
TO-220 TO-220F TO-252 TO-263 TO-263-3		

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

PIN CONFIGURATION of SOP-8



■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS (T_A=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
DC Input Voltage	V _{IN}	18	V
Power Dissipation	P _D	Internally limited	
Junction Temperature	T _J	+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	V
Operating Junction Temperature	T _J	0 ~ +125	°C

■ THERMAL DATA

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	SOT-223	θ_{JA}	165	°C/W
	SOT-89		180	°C/W
	SOP-8		150	°C/W
	TO-252		112	°C/W
	TO-220		54	°C/W
	TO-263		64	°C/W
Junction to Case	SOT-223	θ_{JC}	15	°C/W
	SOT-89		50	°C/W
	SOP-8		20	°C/W
	TO-252		12	°C/W
	TO-220		4	°C/W
	TO-263		4	°C/W

■ ELECTRICAL CHARACTERISTICS

($T_A=25^{\circ}\text{C}$, refer to the test circuits, $T_J=0 \sim 125^{\circ}\text{C}$, $C_O=10\mu\text{F}$ unless otherwise specified)

For LD1117/A-1.2

PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Output Voltage	V_{OUT}	$V_{IN}=3.2\text{V}$, $I_{OUT}=10\text{mA}$, $T_J=25^{\circ}\text{C}$	1.176	1.200	1.224	V
Output Voltage	V_{OUT}	$V_{IN}=2.7$ to 8V LD1117 : $I_{OUT}=10\sim 800\text{mA}$ LD1117A : $I_{OUT}=10\sim 1000\text{mA}$	1.176	1.200	1.224	V
Line Regulation	ΔV_{OUT}	$V_{IN}=2.7$ to 8V , $I_{OUT}=10\text{mA}$		1	6	mV
Load Regulation	ΔV_{OUT}	$V_{IN}=2.7\text{V}$ LD1117 : $I_{OUT}=10\sim 800\text{mA}$ LD1117A : $I_{OUT}=10\sim 1000\text{mA}$		1	10	mV
Temperature stability	ΔV_{OUT}			0.5		%
Long Term Stability	ΔV_{OUT}	1000 hrs, $T_J=125^{\circ}\text{C}$		0.3		%
Operating Input Voltage	V_{IN}	$I_{OUT}=100\text{mA}$			15	V
Quiescent Current	I_Q	$V_{IN}\leq 10\text{V}$		5	10	mA
Current Limit	I_{LIMIT}	$V_{IN}=6.2\text{V}$, $T_J=25^{\circ}\text{C}$	LD1117 800 LD1117A 1000			mA
Minimum Load Current	$I_{O(MIN)}$	$V_{IN}=15\text{V}$		2	5	mA
Output Noise Voltage	e_N	$B=10\text{Hz}$ to 10KHz , $T_J=25^{\circ}\text{C}$		100		μV
Supply Voltage Rejection	SVR	$I_{OUT}=40\text{mA}$, $f=120\text{Hz}$, $T_J=25^{\circ}\text{C}$, $V_{IN}=4.2\text{V}$, $V_{RIPPLE}=1V_{PP}$	60	75		dB
Dropout Voltage	V_D	$I_{OUT}=100\text{mA}$		1.00	1.10	V
		$I_{OUT}=500\text{mA}$		1.15	1.25	
		$I_{OUT}=800\text{mA}$		1.20	1.30	
		$I_{OUT}=1\text{A}$		1.20	1.30	
Thermal Regulation		$T_A=25^{\circ}\text{C}$, 30ms Pulse		0.01	0.10	%/W

For LD1117/A-1.5

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	V_{OUT}	$V_{IN}=3.5\text{V}$, $I_{OUT}=10\text{mA}$, $T_J=25^{\circ}\text{C}$	1.470	1.500	1.530	V
Output Voltage	V_{OUT}	$V_{IN}=3$ to 8V LD1117 : $I_{OUT}=0\sim 800\text{mA}$ LD1117A : $I_{OUT}=0\sim 1000\text{mA}$	1.470	1.500	1.530	V
Line Regulation	ΔV_{OUT}	$V_{IN}=3$ to 8V , $I_{OUT}=0\text{mA}$		1	6	mV
Load Regulation	ΔV_{OUT}	$V_{IN}=3\text{V}$ LD1117 : $I_{OUT}=0\sim 800\text{mA}$ LD1117A : $I_{OUT}=0\sim 1000\text{mA}$		1	10	mV
Temperature stability	ΔV_{OUT}			0.5		%
Long Term Stability	ΔV_{OUT}	1000 hrs, $T_J=125^{\circ}\text{C}$		0.3		%
Operating Input Voltage	V_{IN}	$I_{OUT}=100\text{mA}$			15	V
Quiescent Current	I_Q	$V_{IN}\leq 10\text{V}$		5	10	mA
Current Limit	I_{LIMIT}	$V_{IN}=6.5\text{V}$, $T_J=25^{\circ}\text{C}$	LD1117 800 LD1117A 1000			mA
Output Noise Voltage	e_N	$B=10\text{Hz}$ to 10KHz , $T_J=25^{\circ}\text{C}$		100		μV
Supply Voltage Rejection	SVR	$I_{OUT}=40\text{mA}$, $f=120\text{Hz}$, $T_J=25^{\circ}\text{C}$, $V_{IN}=4.5\text{V}$, $V_{RIPPLE}=1V_{PP}$	60	75		dB
Dropout Voltage	V_D	$I_{OUT}=100\text{mA}$		1.00	1.10	V
		$I_{OUT}=500\text{mA}$		1.15	1.25	
		$I_{OUT}=800\text{mA}$		1.20	1.30	
		$I_{OUT}=1\text{A}$		1.20	1.30	
Thermal Regulation		$T_A=25^{\circ}\text{C}$, 30ms Pulse		0.01	0.10	%/W

■ ELECTRICAL CHARACTERISTICS(Cont.)

For LD1117/A-1.8

PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Output Voltage	V_{OUT}	$V_{IN}=3.8V$, $I_{OUT}=10mA$, $T_J=25^{\circ}C$	1.764	1.800	1.836	V
Output Voltage	V_{OUT}	$V_{IN}=3.3$ to $8V$ LD1117 : $I_{OUT}=0\sim 800mA$ LD1117A : $I_{OUT}=0\sim 1000mA$	1.764	1.800	1.836	V
Line Regulation	ΔV_{OUT}	$V_{IN}=3.3$ to $8V$, $I_{OUT}=0mA$		1	6	mV
Load Regulation	ΔV_{OUT}	$V_{IN}=3.3V$ LD1117 : $I_{OUT}=0\sim 800mA$ LD1117A : $I_{OUT}=0\sim 1000mA$		1	10	mV
Temperature stability	ΔV_{OUT}			0.5		%
Long Term Stability	ΔV_{OUT}	1000 hrs, $T_J=125^{\circ}C$		0.3		%
Operating Input Voltage	V_{IN}	$I_{OUT}=100mA$			15	V
Quiescent Current	I_Q	$V_{IN}\leq 10V$		5	10	mA
Current Limit	I_{LIMIT}	$V_{IN}=6.8V$, $T_J=25^{\circ}C$	LD1117 800 LD1117A 1000			mA
Output Noise Voltage	e_N	$B=10Hz$ to $10KHz$, $T_J=25^{\circ}C$		100		μV
Supply Voltage Rejection	SVR	$I_{OUT}=40mA$, $f=120Hz$, $T_J=25^{\circ}C$, $V_{IN}=5.5V$, $V_{RIPPLE}=1V_{PP}$	60	75		dB
Dropout Voltage	V_D	$I_{OUT}=100mA$		1.00	1.10	V
		$I_{OUT}=500mA$		1.15	1.25	
		$I_{OUT}=800mA$		1.20	1.30	
		$I_{OUT}=1A$		1.20	1.30	
Thermal Regulation		$T_A=25^{\circ}C$, 30ms Pulse		0.01	0.10	%/W

For LD1117/A-2.5

PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Output Voltage	V_{OUT}	$V_{IN}=4.5V$, $I_{OUT}=10mA$, $T_J=25^{\circ}C$	2.450	2.500	2.550	V
Output Voltage	V_{OUT}	$V_{IN}=3.9$ to $10V$ LD1117 : $I_{OUT}=0\sim 800mA$ LD1117A : $I_{OUT}=0\sim 1000mA$	2.450	2.500	2.550	V
Line Regulation	ΔV_{OUT}	$V_{IN}=3.9$ to $10V$, $I_{OUT}=0mA$		1	6	mV
Load Regulation	ΔV_{OUT}	$V_{IN}=3.9V$ LD1117 : $I_{OUT}=0\sim 800mA$ LD1117A : $I_{OUT}=0\sim 1000mA$		1	10	mV
Temperature stability	ΔV_{OUT}			0.5		%
Long Term Stability	ΔV_{OUT}	1000 hrs, $T_J=125^{\circ}C$		0.3		%
Operating Input Voltage	V_{IN}	$I_{OUT}=100mA$			15	V
Quiescent Current	I_Q	$V_{IN}\leq 10V$		5	10	mA
Current Limit	I_{LIMIT}	$V_{IN}=7.5V$, $T_J=25^{\circ}C$	LD1117 800 LD1117A 1000			mA
Output Noise Voltage	e_N	$B=10Hz$ to $10KHz$, $T_J=25^{\circ}C$		100		μV
Supply Voltage Rejection	SVR	$I_{OUT}=40mA$, $f=120Hz$, $T_J=25^{\circ}C$, $V_{IN}=5.5V$, $V_{RIPPLE}=1V_{PP}$	60	75		dB
Dropout Voltage	V_D	$I_{OUT}=100mA$		1.00	1.10	V
		$I_{OUT}=500mA$		1.15	1.25	
		$I_{OUT}=800mA$		1.20	1.30	
		$I_{OUT}=1A$		1.20	1.30	
Thermal Regulation		$T_A=25^{\circ}C$, 30ms Pulse		0.01	0.10	%/W

■ ELECTRICAL CHARACTERISTICS(Cont.)

For LD1117/A-2.85

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	V_{OUT}	$V_{IN}=4.85V$, $I_{OUT}=10mA$, $T_J=25^{\circ}C$	2.793	2.850	2.907	V
Output Voltage	V_{OUT}	$V_{IN}=4.25$ to $10V$ LD1117 : $I_{OUT}=0\sim 800mA$ LD1117A : $I_{OUT}=0\sim 1000mA$	2.793	2.850	2.907	V
Line Regulation	ΔV_{OUT}	$V_{IN}=4.25$ to $10V$, $I_{OUT}=0mA$		1	6	mV
Load Regulation	ΔV_{OUT}	$V_{IN}=4.25V$ LD1117 : $I_{OUT}=0\sim 800mA$ LD1117A : $I_{OUT}=0\sim 1000mA$		1	10	mV
Temperature stability	ΔV_{OUT}			0.5		%
Long Term Stability	ΔV_{OUT}	1000 hrs, $T_J=125^{\circ}C$		0.3		%
Operating Input Voltage	V_{IN}	$I_{OUT}=100mA$			15	V
Quiescent Current	I_Q	$V_{IN}\leq 10V$		5	10	mA
Current Limit	I_{LIMIT}	$V_{IN}=7.85V$, $T_J=25^{\circ}C$	LD1117 800 LD1117A 1000			mA
Output Noise Voltage	e_N	$B=10Hz$ to $10KHz$, $T_J=25^{\circ}C$		100		μV
Supply Voltage Rejection	SVR	$I_{OUT}=40mA$, $f=120Hz$, $T_J=25^{\circ}C$, $V_{IN}=5.85V$, $V_{RIPPLE}=1V_{PP}$	60	75		dB
Dropout Voltage	V_D	$I_{OUT}=100mA$		1.00	1.10	V
		$I_{OUT}=500mA$		1.15	1.25	
		$I_{OUT}=800mA$		1.20	1.30	
		$I_{OUT}=1A$		1.20	1.30	
Thermal Regulation		$T_A=25^{\circ}C$, 30ms Pulse		0.01	0.10	%/W

For LD1117/A-3.0

PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Output Voltage	V_{OUT}	$V_{IN}=5V$, $I_{OUT}=10mA$, $T_J=25^{\circ}C$	2.940	3.000	3.060	V
Output Voltage	V_{OUT}	$V_{IN}=4.5$ to $10V$ LD1117 : $I_{OUT}=0\sim 800mA$ LD1117A : $I_{OUT}=0\sim 1000mA$	2.940	3.000	3.060	V
Line Regulation	ΔV_{OUT}	$V_{IN}=4.5$ to $12V$, $I_{OUT}=0mA$		1	6	mV
Load Regulation	ΔV_{OUT}	$V_{IN}=4.5V$ LD1117 : $I_{OUT}=0\sim 800mA$ LD1117A : $I_{OUT}=0\sim 1000mA$		1	10	mV
Temperature stability	ΔV_{OUT}			0.5		%
Long Term Stability	ΔV_{OUT}	1000 hrs, $T_J=125^{\circ}C$		0.3		%
Operating Input Voltage	V_{IN}	$I_{OUT}=100mA$			15	V
Quiescent Current	I_Q	$V_{IN}\leq 15V$		5	10	mA
Current Limit	I_{LIMIT}	$V_{IN}=8V$, $T_J=25^{\circ}C$	LD1117 800 LD1117A 1000			mA
Output Noise Voltage	e_N	$B=10Hz$ to $10KHz$, $T_J=25^{\circ}C$		100		μV
Supply Voltage Rejection	SVR	$I_{OUT}=40mA$, $f=120Hz$, $T_J=25^{\circ}C$, $V_{IN}=6V$, $V_{RIPPLE}=1V_{PP}$	60	75		dB
Dropout Voltage	V_D	$I_{OUT}=100mA$		1.00	1.10	V
		$I_{OUT}=500mA$		1.15	1.25	
		$I_{OUT}=800mA$		1.20	1.30	
		$I_{OUT}=1A$		1.20	1.30	
Thermal Regulation		$T_A=25^{\circ}C$, 30ms Pulse		0.01	0.10	%/W

■ ELECTRICAL CHARACTERISTICS(Cont.)

For LD1117/A-3.3

PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Output Voltage	V_{OUT}	$V_{IN}=5.3V$, $I_{OUT}=10mA$, $T_J=25^{\circ}C$	3.234	3.300	3.366	V
Output Voltage	V_{OUT}	$V_{IN}=4.75$ to $10V$ LD1117 : $I_{OUT}=0\sim 800mA$ LD1117A : $I_{OUT}=0\sim 1000mA$	3.234	3.300	3.366	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 : $I_{OUT}=0\sim 800mA$ LD1117A : $I_{OUT}=0\sim 1000mA$		1	10	mV
Temperature stability	ΔV_{OUT}			0.5		%
Long Term Stability	ΔV_{OUT}	1000 hrs, $T_J=125^{\circ}C$		0.3		%
Operating Input Voltage	V_{IN}	$I_{OUT}=100mA$			15	V
Quiescent Current	I_Q	$V_{IN}\leq 15V$		5	10	mA
Current Limit	I_{LIMIT}	$V_{IN}=8.3V$, $T_J=25^{\circ}C$	LD1117 800 LD1117A 1000			mA
Output Noise Voltage	e_N	$B=10Hz$ to $10KHz$, $T_J=25^{\circ}C$		100		μV
Supply Voltage Rejection	SVR	$I_{OUT}=40mA$, $f=120Hz$, $T_J=25^{\circ}C$, $V_{IN}=6.3V$, $V_{RIPPLE}=1V_{PP}$	60	75		dB
Dropout Voltage	V_D	$I_{OUT}=100mA$		1.00	1.10	V
		$I_{OUT}=500mA$		1.15	1.25	
		$I_{OUT}=800mA$		1.20	1.30	
		$I_{OUT}=1A$		1.20	1.30	
Thermal Regulation		$T_A=25^{\circ}C$, 30ms Pulse		0.01	0.10	%/W

For LD1117/A-3.6

PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Output Voltage	V_{OUT}	$V_{IN}=5.6V$, $I_{OUT}=10mA$, $T_J=25^{\circ}C$	3.528	3.600	3.672	V
Output Voltage	V_{OUT}	$V_{IN}=5$ to $10V$ LD1117 : $I_{OUT}=0\sim 800mA$ LD1117A : $I_{OUT}=0\sim 1000mA$	3.528	3.600	3.672	V
Line Regulation	ΔV_{OUT}	$V_{IN}=5$ to $15V$, $I_{OUT}=0mA$		1	6	mV
Load Regulation	ΔV_{OUT}	$V_{IN}=5V$ LD1117 : $I_{OUT}=0\sim 800mA$ LD1117A : $I_{OUT}=0\sim 1000mA$		1	10	mV
Temperature stability	ΔV_{OUT}			0.5		%
Long Term Stability	ΔV_{OUT}	1000 hrs, $T_J=125^{\circ}C$		0.3		%
Operating Input Voltage	V_{IN}	$I_{OUT}=100mA$			15	V
Quiescent Current	I_Q	$V_{IN}\leq 15V$		5	10	mA
Current Limit	I_{LIMIT}	$V_{IN}=8.6V$, $T_J=25^{\circ}C$	LD1117 800 LD1117A 1000			mA
Output Noise Voltage	e_N	$B=10Hz$ to $10KHz$, $T_J=25^{\circ}C$		100		μV
Supply Voltage Rejection	SVR	$I_{OUT}=40mA$, $f=120Hz$, $T_J=25^{\circ}C$, $V_{IN}=6.6V$, $V_{RIPPLE}=1V_{PP}$	60	75		dB
Dropout Voltage	V_D	$I_{OUT}=100mA$		1.00	1.10	V
		$I_{OUT}=500mA$		1.15	1.25	
		$I_{OUT}=800mA$		1.20	1.30	
		$I_{OUT}=1A$		1.20	1.30	
Thermal Regulation		$T_A=25^{\circ}C$, 30ms Pulse		0.01	0.10	%/W

■ ELECTRICAL CHARACTERISTICS(Cont.)

For LD1117/A-5.0

PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Output Voltage	V_{OUT}	$V_{IN}=7V$, $I_{OUT}=10mA$, $T_J=25^{\circ}C$	4.900	5.000	5.100	V
Output Voltage	V_{OUT}	$V_{IN}=6.5$ to $15V$ LD1117 : $I_{OUT}=0\sim 800mA$ LD1117A : $I_{OUT}=0\sim 1.0A$	4.900	5.000	5.100	V
Line Regulation	ΔV_{OUT}	$V_{IN}=6.5$ to $15V$, $I_{OUT}=0mA$		1	10	mV
Load Regulation	ΔV_{OUT}	$V_{IN}=6.5V$ LD1117 : $I_{OUT}=0\sim 800mA$ LD1117A : $I_{OUT}=0\sim 1000mA$		1	15	mV
Temperature stability	ΔV_{OUT}			0.5		%
Long Term Stability	ΔV_{OUT}	1000 hrs, $T_J=125^{\circ}C$		0.3		%
Operating Input Voltage	V_{IN}	$I_{OUT}=100mA$			15	V
Quiescent Current	I_Q	$V_{IN}\leq 15V$		5	10	mA
Current Limit	I_{LIMIT}	$V_{IN}=10V$, $T_J=25^{\circ}C$	LD1117 800 LD1117A 1000			mA
Output Noise Voltage	e_N	$B=10Hz$ to $10KHz$, $T_J=25^{\circ}C$		100		μV
Supply Voltage Rejection	SVR	$I_{OUT}=40mA$, $f=120Hz$, $T_J=25^{\circ}C$, $V_{IN}=8V$, $V_{RIPPLE}=1V_{PP}$	60	75		dB
Dropout Voltage	V_D	$I_{OUT}=100mA$ $I_{OUT}=500mA$ $I_{OUT}=800mA$ $I_{OUT}=1A$		1.00 1.15 1.20 1.20	1.10 1.25 1.30 1.30	V
Thermal Regulation		$T_A=25^{\circ}C$, 30ms Pulse		0.01	0.10	%/W

For LD1117/A-ADJ

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Reference Voltage	V_{REF}	$V_{IN}-V_{OUT}=2V$, $I_{OUT}=10mA$, $T_J=25^{\circ}C$	1.225	1.25	1.275	V
Reference Voltage	V_{REF}	$V_{IN}-V_{OUT}=1.4$ to $10V$ LD1117 : $I_{OUT}=10\sim 800mA$ LD1117A : $I_{OUT}=10\sim 1000mA$	1.225	1.25	1.275	V
Line Regulation	ΔV_{OUT}	$V_{IN}-V_{OUT}=1.5$ to $13.75V$, $I_{OUT}=10mA$		0.035	0.2	%
Load Regulation	ΔV_{OUT}	$V_{IN}-V_{OUT}=3V$ LD1117 : $I_{OUT}=10\sim 800mA$ LD1117A : $I_{OUT}=10\sim 1000mA$		0.1	0.4	%
Temperature stability	ΔV_{OUT}			0.50		%
Long Term Stability	ΔV_{OUT}	1000 hrs, $T_J=125^{\circ}C$		0.3		%
Operating Input Voltage	V_{IN}				15	V
Adjustment Pin Current	I_{ADJ}	$V_{IN}\leq 15V$		60	120	μA
Adjustment Pin Current Change	ΔI_{ADJ}	$V_{IN}-V_{OUT}=1.4$ to $10V$, LD1117 : $I_{OUT}=10\sim 800mA$ LD1117A : $I_{OUT}=10\sim 1000mA$		1	5	μA
Minimum Load Current	$I_{O(MIN)}$	$V_{IN}=15V$		2	5	mA
Current Limit	I_{LIMIT}	$V_{IN}-V_{OUT}=5V$, $T_J=25^{\circ}C$	LD1117 800 LD1117A 1000			mA
Output Noise (% V_O)	e_N	$B=10Hz$ to $10KHz$, $T_J=25^{\circ}C$		0.003		%
Supply Voltage Rejection	SVR	$I_{OUT}=40mA$, $f=120Hz$, $T_J=25^{\circ}C$, $V_{IN}-V_{OUT}=3V$, $V_{RIPPLE}=1V_{PP}$	60	75		dB
Dropout Voltage	V_D	$I_{OUT}=100mA$ $I_{OUT}=500mA$ $I_{OUT}=800mA$ $I_{OUT}=1A$		1.00 1.15 1.20 1.20	1.10 1.25 1.30 1.30	V
Thermal Regulation		$T_A=25^{\circ}C$, 30ms Pulse		0.01	0.10	%/W

■ TYPICAL APPLICATIONS

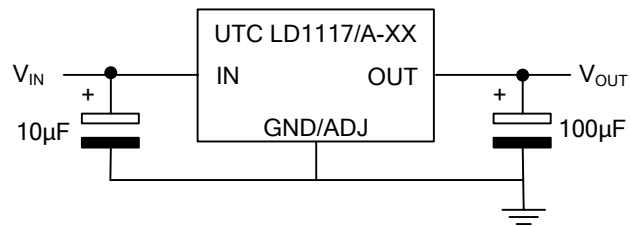


Fig.1 Tyncal Application Circuit

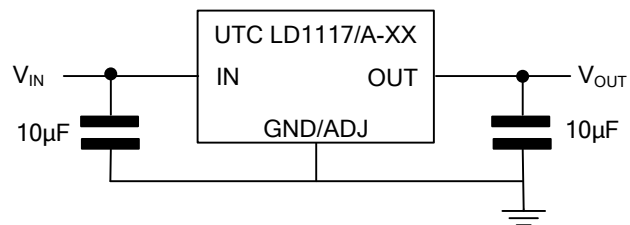


Fig.2 Tyncal Application Circuit (FOR MLCC)

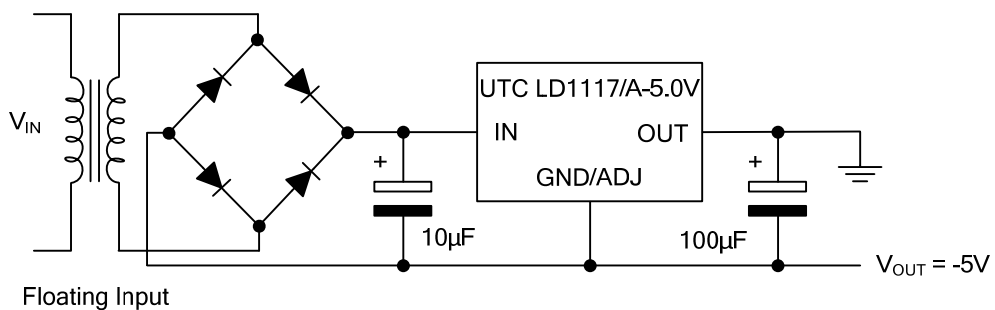


Fig.3 Negative Supply

■ TYPICAL APPLICATIONS(Cont.)

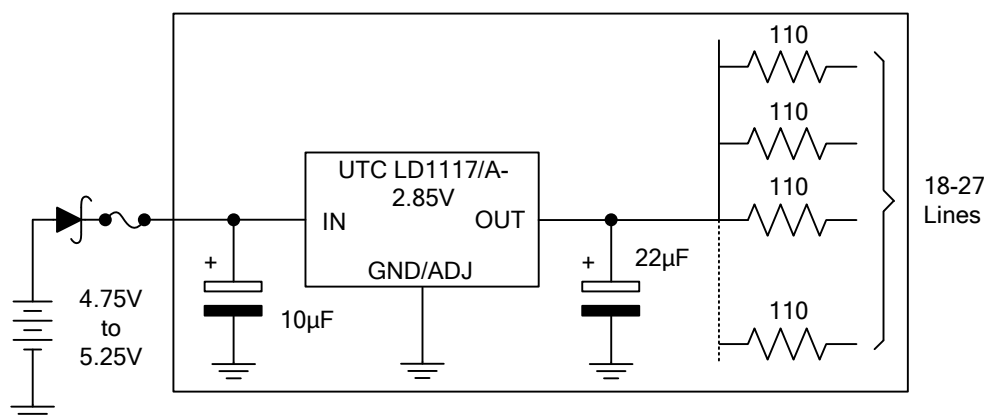


Fig.4 Active Terminator for SCSI-2 BUS

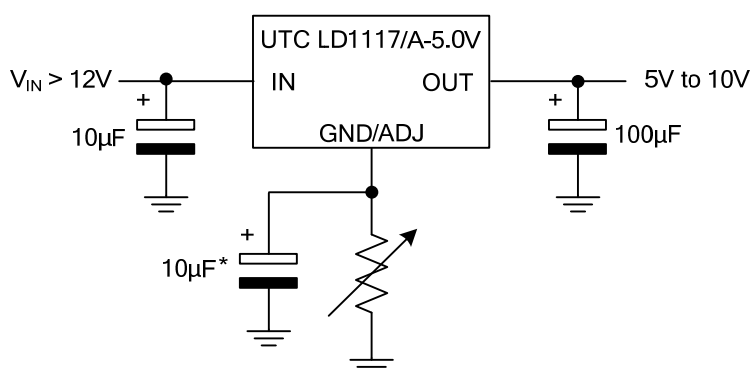


Fig.5 Circuit for Increasing Output Voltage

■ APPLICATION NOTE of LD1117/A ADJUSTABLE

The **LD1117/A** adjustable has a reference voltage of between the OUT and ADJ/GND pins. I_{ADJ} is 60 μ A typ. (120 μ A max.) and ΔI_{ADJ} is 1 μ A typ. (5 μ A max.).

R_1 is normally fixed to 120 Ω .

From figure 4 we obtain:

$$V_{OUT} = V_{REF} + R_2(I_{ADJ} + I_{R1}) = V_{REF} + R_2(I_{ADJ} + V_{REF}/R_1) = V_{REF}(1 + R_2/R_1) + R_2 \times I_{ADJ}$$

Usually R_2 value is in the range of few K Ω , so the $R_2 \times I_{ADJ}$ product could be neglected; then the above expression becomes: $V_{OUT} = V_{REF}(1 + R_2/R_1)$

For better load regulation, realize a good Kelvin connection of R_1 and R_2 is important. Particularly R_1 connection must be realized very close to OUT and ADJ/GND pin, while R_2 ground connection must be placed as near as possible to the negative Load pin. Ripple rejection can be improved by introducing a 10 μ F electrolytic capacitor placed in parallel to the R_2 resistor (See Fig. 8)

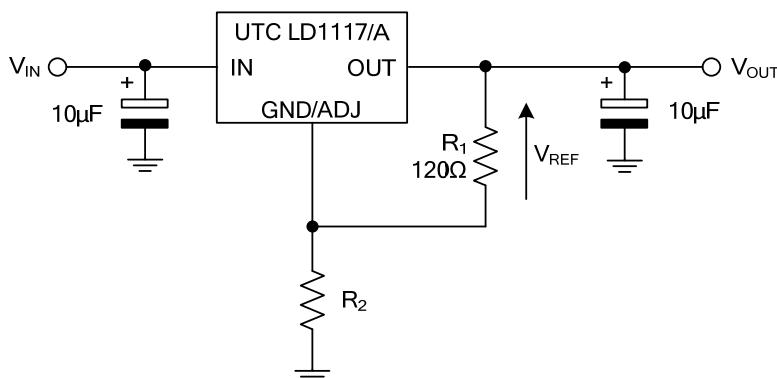


Fig.6 Adjustable Output Voltage Application Circuit

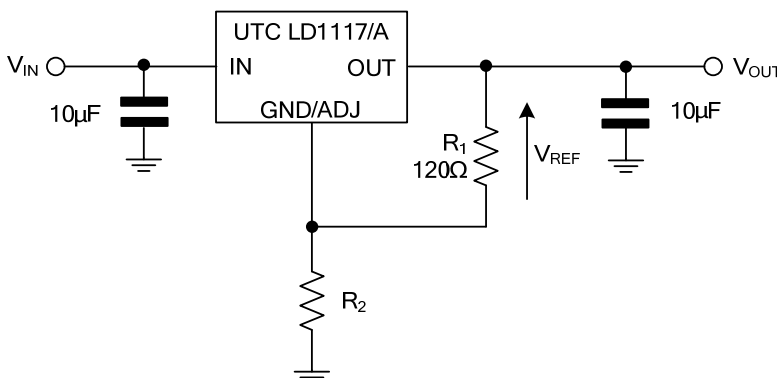


Fig.7 Adjustable Output Voltage Application Circuit (FOR MLCC)

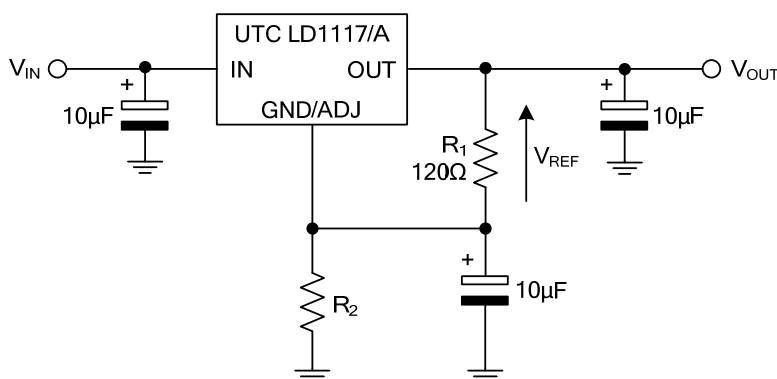
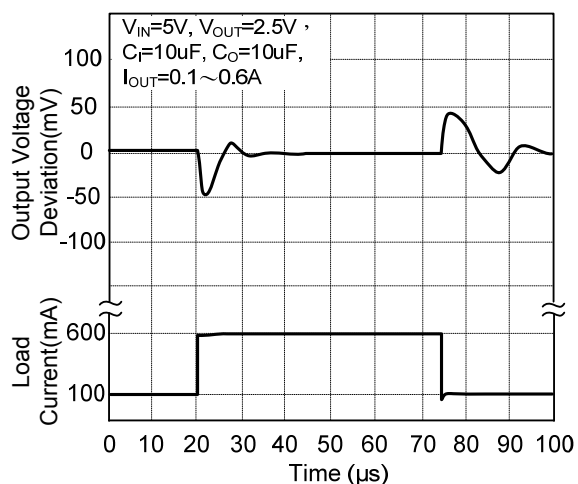


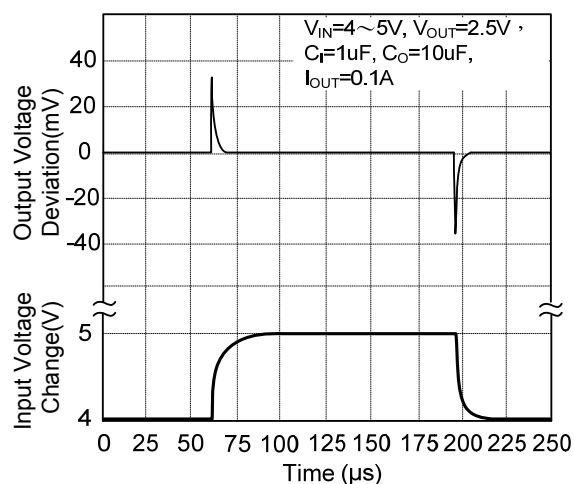
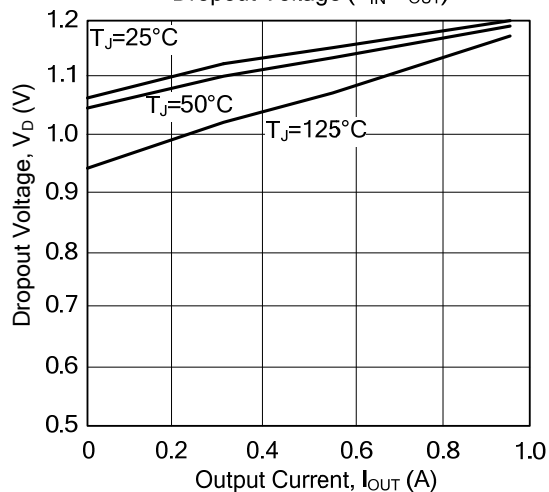
Fig.8 Adjustable Output Voltage Application with improved Ripple Rejection.

■ TYPICAL CHARACTERISTICS

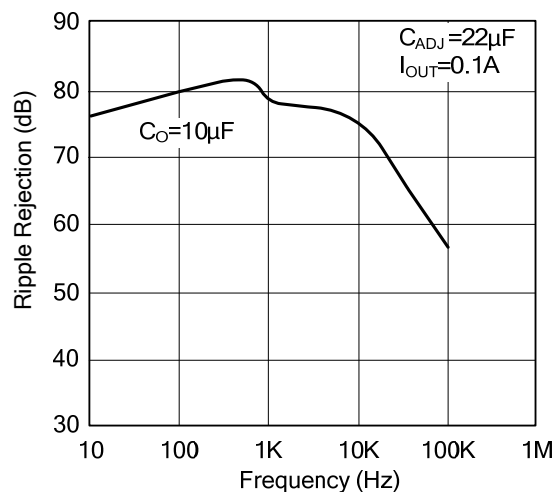
Load Transient Response



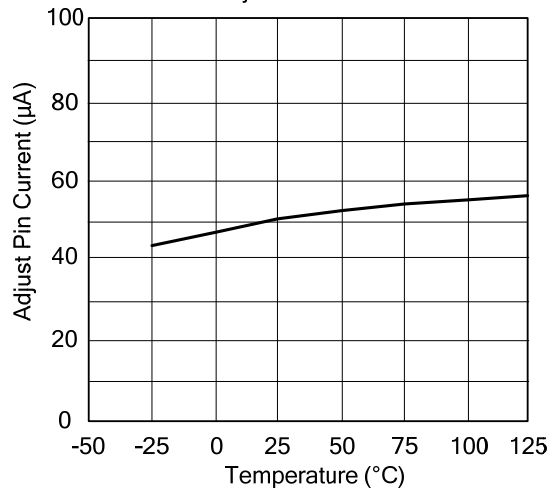
Line Transient Response

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

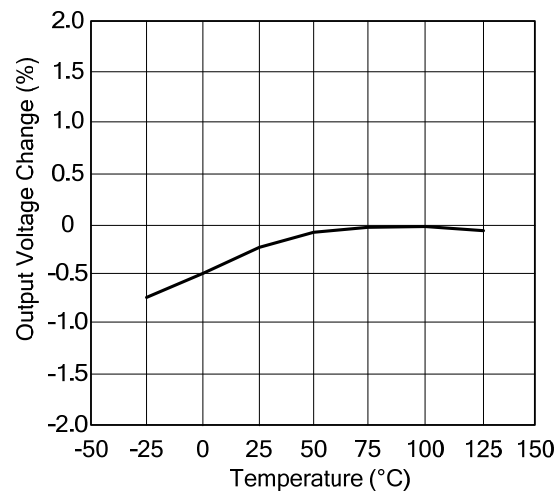
Ripple Rejection



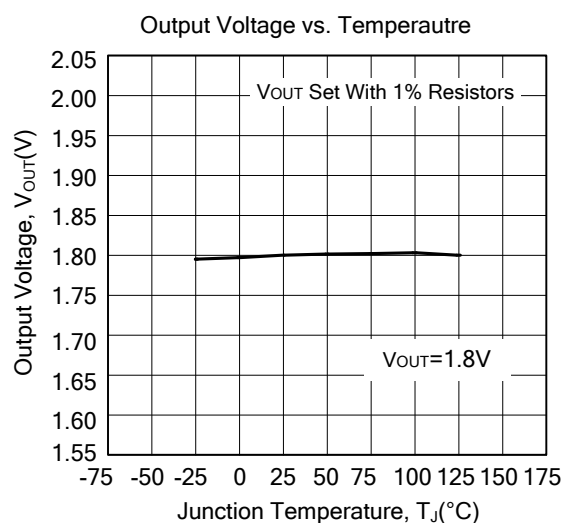
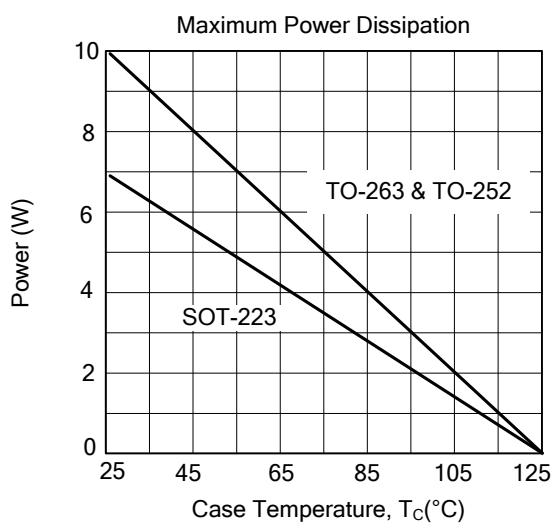
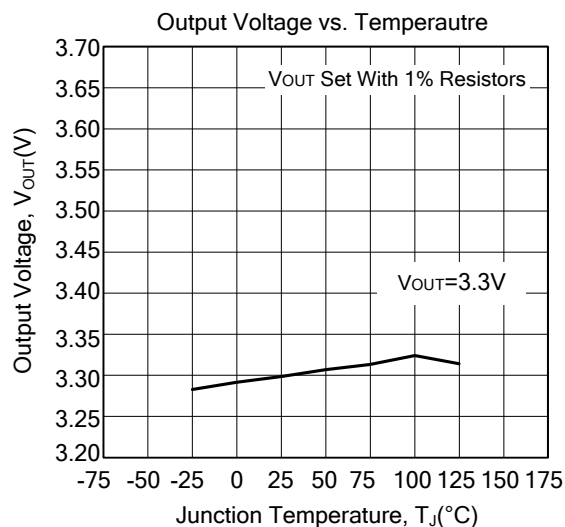
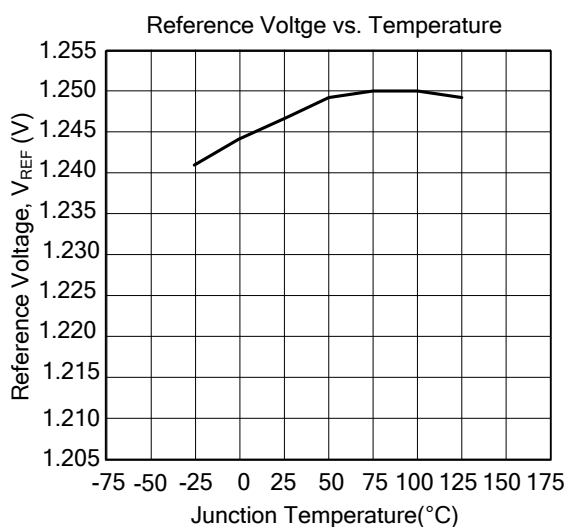
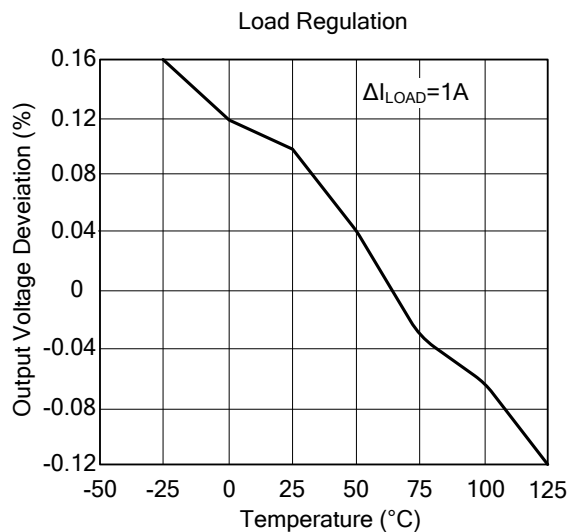
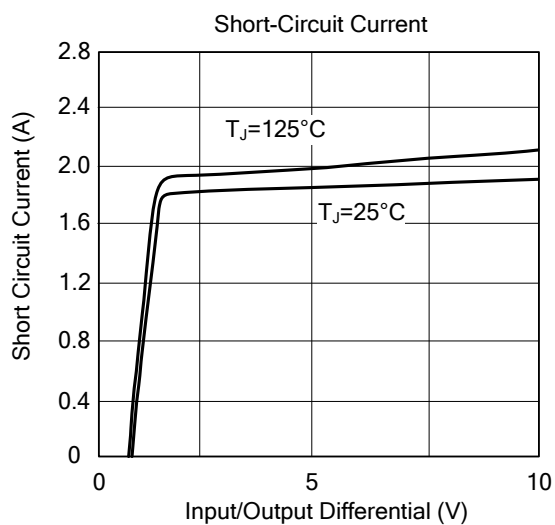
Adjust Pin Current



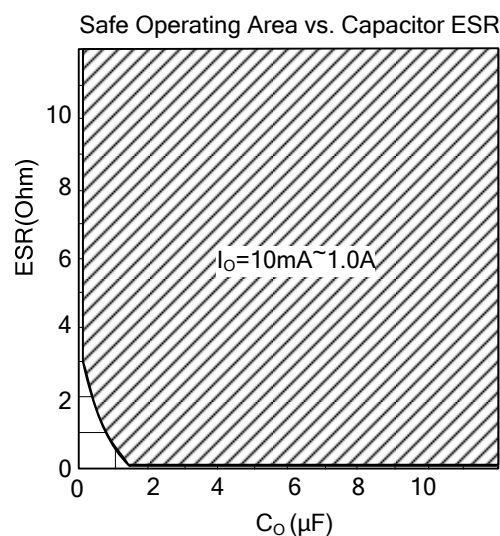
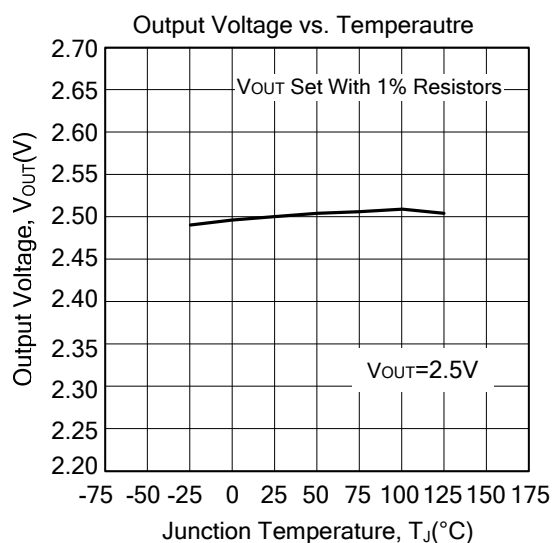
Temperature Stability



■ TYPICAL CHARACTERISTICS(Cont.)



■ TYPICAL CHARACTERISTICS(Cont.)



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