

POWER MANAGEMENT



LDO Regulator

FEATURES

- Current and Thermal Limiting.
Needs only 2.2uF for Stability.
- Guaranteed 600mA Output Current.
- Low Ground Current at 120µA.
- 2% Accuracy Output Voltage of Adj / 1.2 / 1.5
1.8V / 2.5V / 2.6V / 2.8V / 3.0V / 3.3V
press outputs.
- Low Dropout Voltage of 300mV at 500mA Output Current (3.3V Output Version).

APPLICATIONS

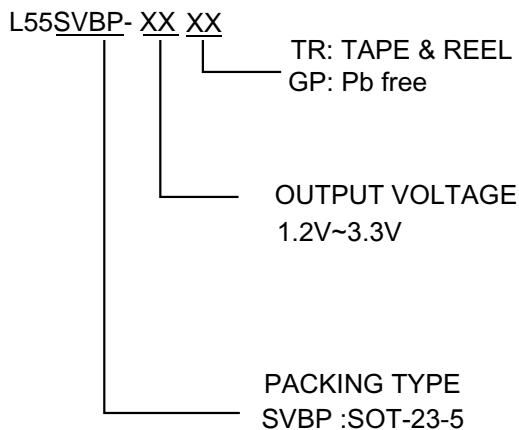
- CD-ROM Drivers.
- LAN Cards.
- Microprocessor.
- Wireless Communication Systems.
- Battery Powered Systems.

DESCRIPTION

The L55SVBP is a 5-pin low dropout linear regulator. The superior characteristics of the L55SVBP include zero base current loss, very low dropout voltage, and 2% accuracy output voltage. Typical ground current remains approximately 120µA, from no load to maximum loading conditions. Dropout voltage at 600mA output current is exceptionally low. Output current limiting and thermal limiting are built in to provide maximal protection to the L55SVBP against fault conditions.

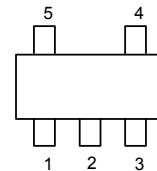
The L55SVBP comes in the popular 5-pin SOT-23-5 packages.

ORDERING INFORMATION TYPICAL

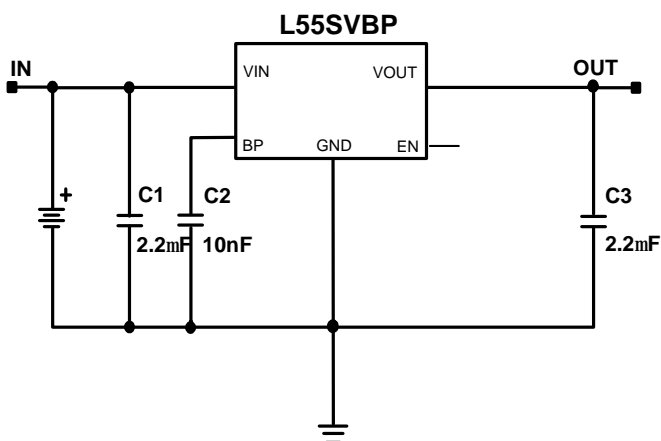


PIN CONFIGURATION

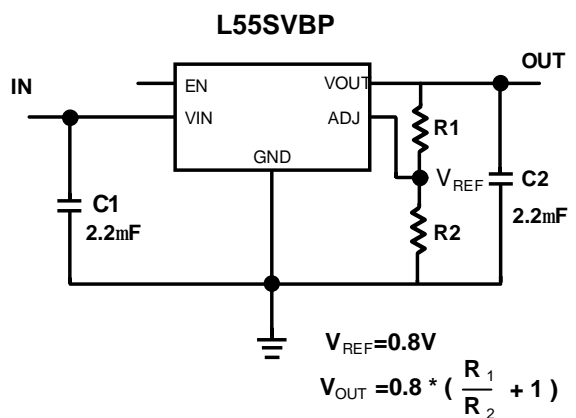
SOT-23-5
TOP VIEW
1: VIN
2: GND
3: EN
4: BYPASS/ADJ
5: VOUT



TYPICAL APPLICATION CIRCUIT



Fix Voltage LDO Regulator



ADJ Voltage LDO Regulator

ABSOLUTE MAXIMUM RATINGS

Supply Voltage.....	-0.3V to 6.0V	Input Supply Voltage.....	2V to 6.0V
Output Voltage.....	-0.3V to ($V_{IN}+0.3V$)	Operating Temperature	-40 to +85
Output Short-Circuit Duration	Infinite		
Junction Temperature Range.....	+150		
Storage Temperature Range.....	-65 to +150		
Lead Temperature	+250		

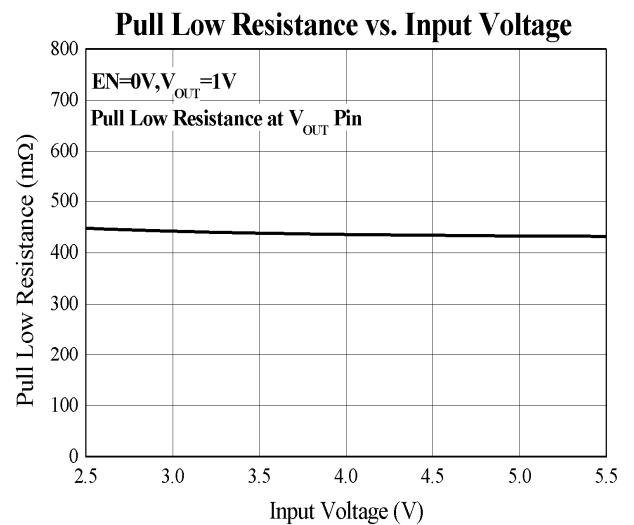
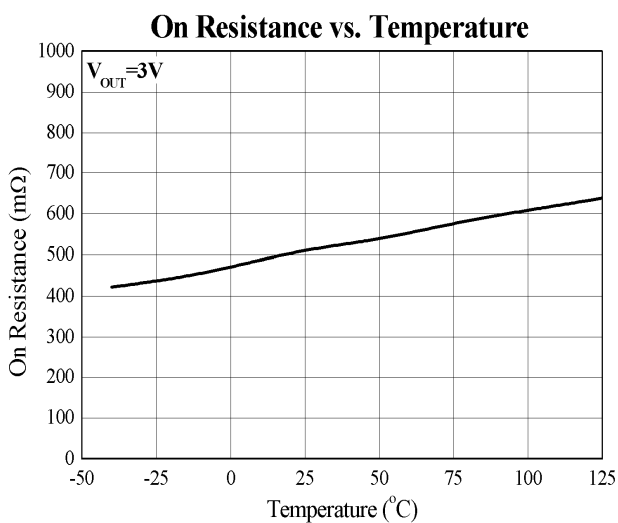
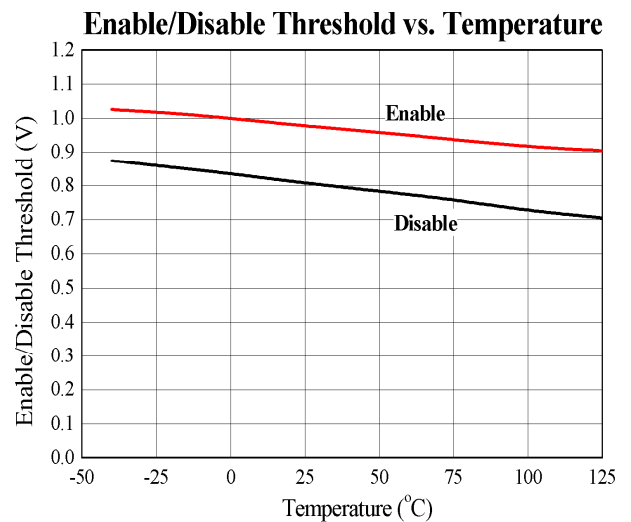
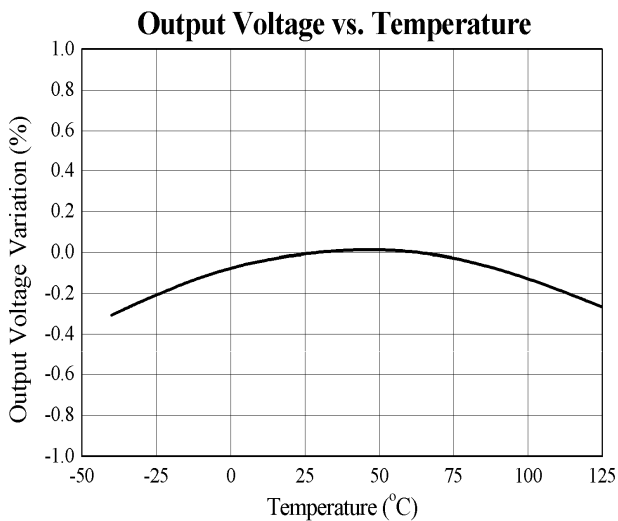
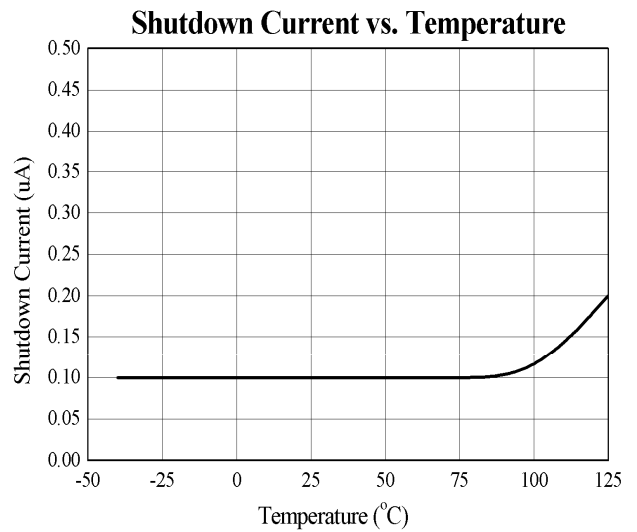
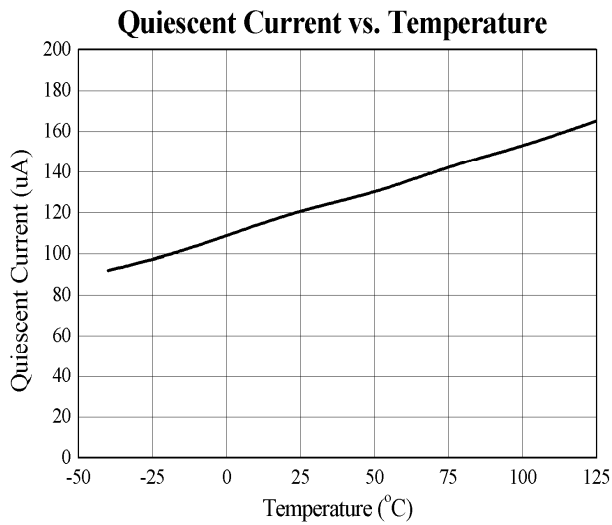
Electrical Characteristics

$T_A=25$ degree C, $V_{IN}=V_{OUT}+1V$, or $V_{IN}=2.5V$ for $V_{OUT}<1.5V$ unless otherwise specified

Symbol	Parameter	Conditions	L55SVBP			Unit
			Min.	Typ.	Max.	
Input Voltage						
V_{IN}	Input Voltage		2.5		5.5	V
V_{PORTH}	POR Threshold			2.1		V
V_{PORHYS}	POR hysteresis			0.4		V
I_Q	Quiescent Current	$V_{EN}=V_{IN}$, $I_{OUT}=0mA$		120	180	μA
I_{SHDN}	Shutdown Current	$V_{EN}=0V$		0.1	1	μA
PSRR	Power Supply Ripple Rejection	$V_{IN}=V_{NOM}+1V_{P-P}$, $f=1kHz$, $I_{LOAD}=10mA$		70		dB
		$V_{IN}=V_{NOM}+1V_{P-P}$, $f=10kHz$, $I_{LOAD}=10mA$		70		
V_{FB}	FB Pin Voltage		0.784	0.8	0.816	V
Enable						
V_{ENH}	Enable High Voltage	Over temperature range	1.5			V
V_{ENL}	Disable Low Voltage	Over temperature range			0.4	V
I_{EN}	EN Input Current	$V_{IN}=5V$, $V_{EN}=5V$ or $0V$	-1		1	μA
T_{ST}	Start-up Time	$C_{BYPASS}=10nF$		120		μs
Output voltage						
V_{OUT}	Output Voltage Accuracy	$V_{IN}=V_{NOM}+1.0V$, $I_{OUT}=10mA$	-2		+2	%
		$V_{IN}=V_{NOM}+1.0V$, $I_{OUT}=10mA$, TEMP=-40 to 85	-3		+3	%
V_{LNR}	Output Line Regulation	$V_{OUT}+0.5V < V_{IN} < 5.5V$, $I_{OUT}=10mA$		0.04	0.1	%/V
V_{LDR}	Output Load Regulation	$1mA < I_{OUT} < 600mA$, $V_{IN}=V_{NOM}+1.0V$		17	30	mV
V_{DROP}	Dropout Voltage (Applied for $V_{OUT} \geq 2.3V$)	$I_{OUT}=300mA$		180	240	mV
		$I_{OUT}=600mA$		360	450	
I_{OUTMAX}	Maximum Output Current		600			mA

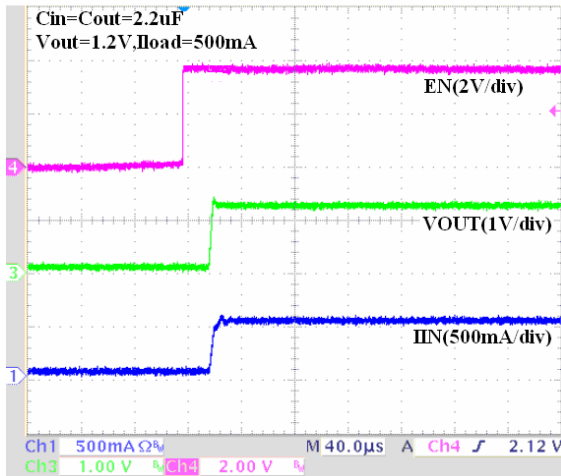
TYPICAL PERFORMANCE CHARACTERISTICS

At $T_A=25^\circ\text{C}$, $V_{IN}=(V_{OUT}+1V)$, $C_{IN}=C_{OUT}=0.47\mu\text{F}$, $V_{EN}=V_{IN}$, unless otherwise noted.

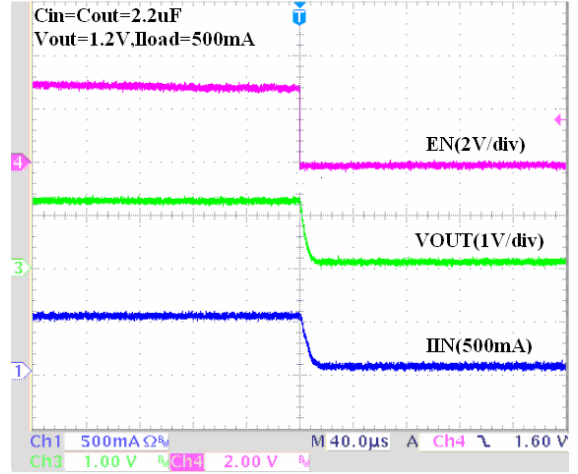


TYPICAL PERFORMANCE CHARACTERISTICS (Continued)

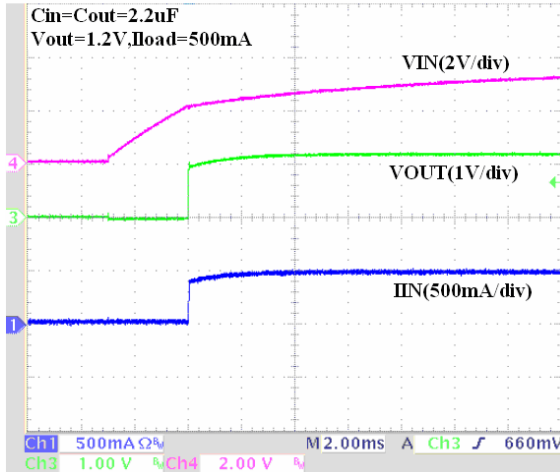
Turn On Waveforms



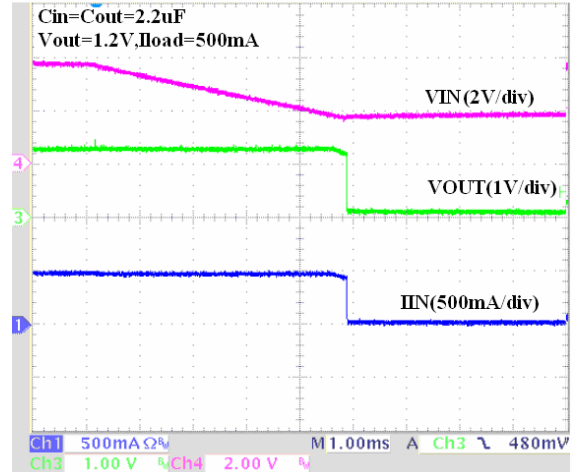
Turn Off Waveforms



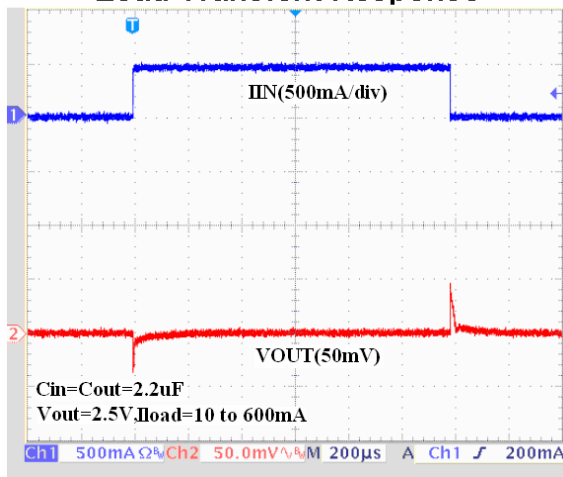
Power On Waveforms



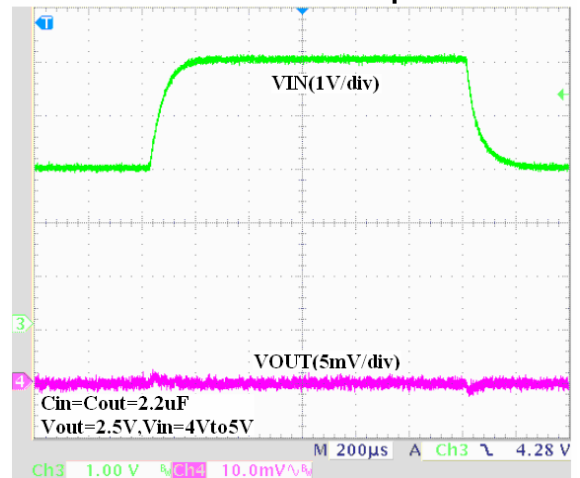
Power Off Waveforms



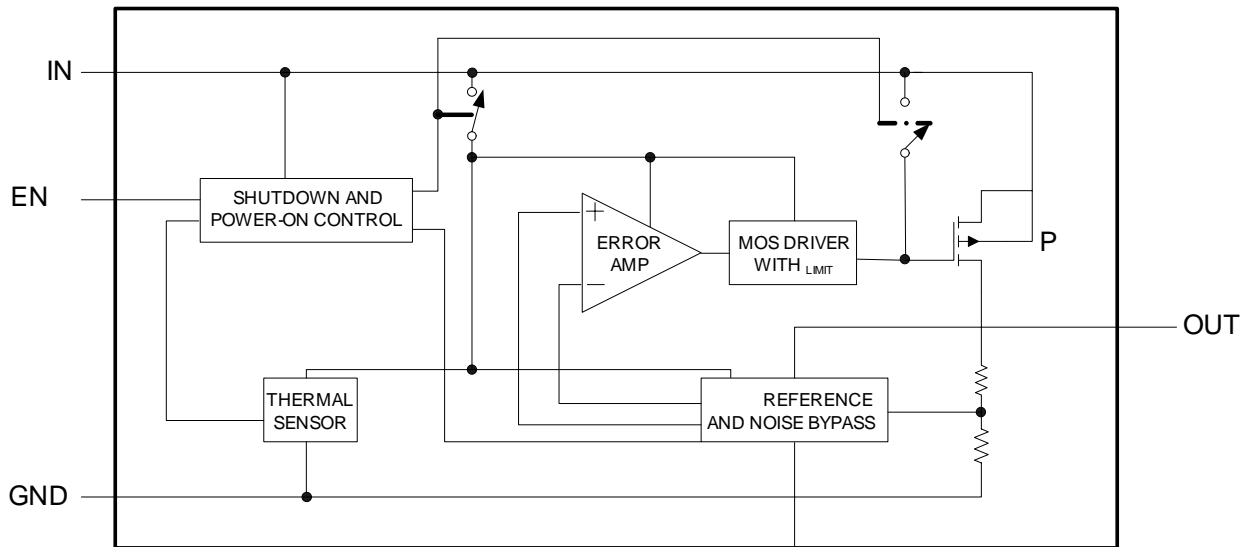
Load Transient Response



Line Transient Response

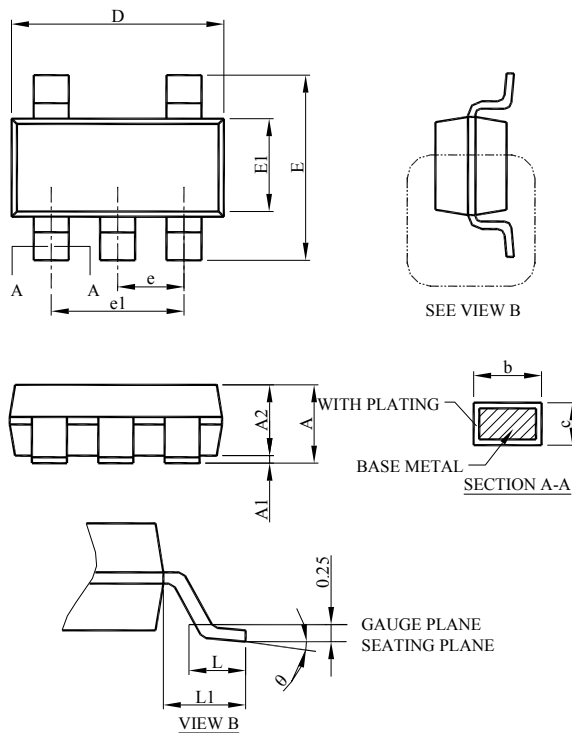


BLOCK DIAGRAM



PHYSICAL DIMENSIONS (unit: mm)

SOT-23-5



SYMBOL	SOT-23-5	
	MILLIMETERS	
	MIN.	MAX.
A	0.95	1.45
A1	0.05	0.15
A2	0.90	1.30
b	0.30	0.50
c	0.08	0.22
D	2.80	3.00
E	2.60	3.00
E1	1.50	1.70
e	0.95 BSC	
e1	1.90 BSC	
L	0.30	0.60
L1	0.60 REF	
θ	0°	8°