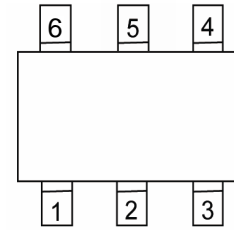


Powermanagement Intergrated Circuits CMOS LDO

Features

- Very Low Dropout Voltage
- Guaranteed 300mA Output
- Accurate to within 1.5%
- 30 μ A Quiescent Current
- Over-Temperature Shutdown
- Current Limiting
- Short Circuit Current Fold-back
- Power Good Detector (6 pin version only)
- Power-Saving Shutdown Mode
- Adjustable Output Voltages
- Low Temperature Coefficient

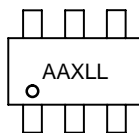


PIN ASSIGNMENT

1	V IN
2	GND
3	EN
4	PG
5	ADJ
6	Vout

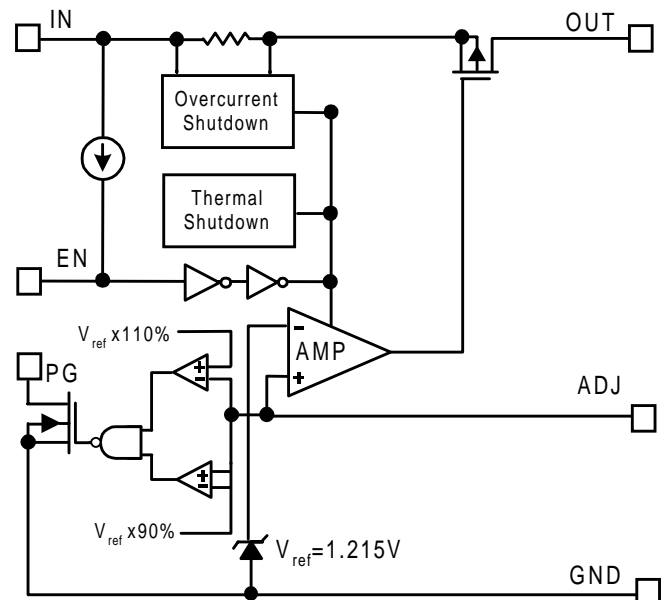
Applicaionts

- Instrumentation
- Portable Electronics
- Wireless Devices
- Cordless Phones
- PC Peripherals
- Battery Powered Widgets
- Electronic Scales



AA : Marking code
 X : Factory Location Code
 LL : Lot code or datecode abbreviation (From A~Z,a~z,1~9)

Functional Block Diagram



ORDERING INFORMATION

Device	Marking Code	Package	Shipping [†]
ALT1123TR	AA	SOT23-6	3000 / Tape & Reel

■ Absolute Maximum Ratings

Parameter	Maximum	Unit
Input Voltage	8	V
Output Current	$P_D / (V_{IN} - V_O)$	mA
Input, Output Voltage	GND - 0.3 to $V_{IN} + 0.3$	V
ESD Classification	B	

■ Recommended Operating Conditions

Parameter	Rating	Unit
Ambient Temperature Range	- 40 to +85	°C
Junction Temperature	- 40 to +125	°C

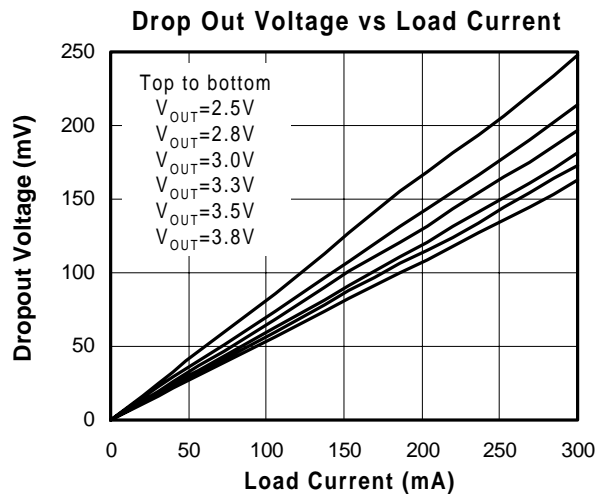
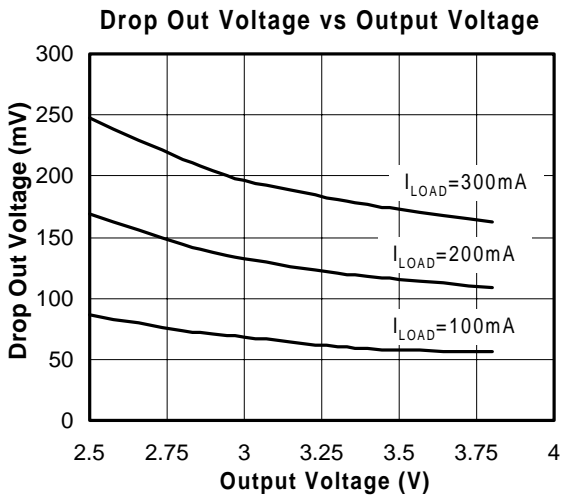
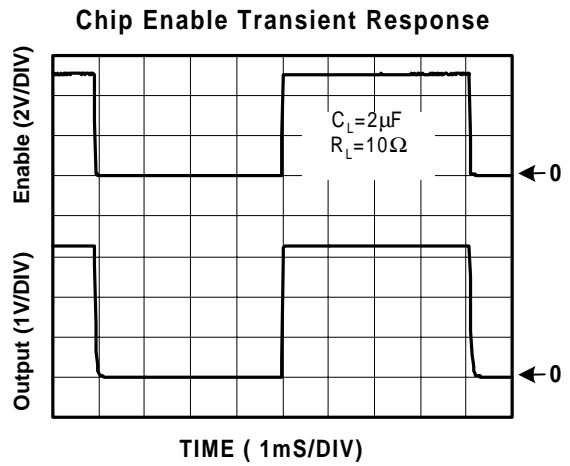
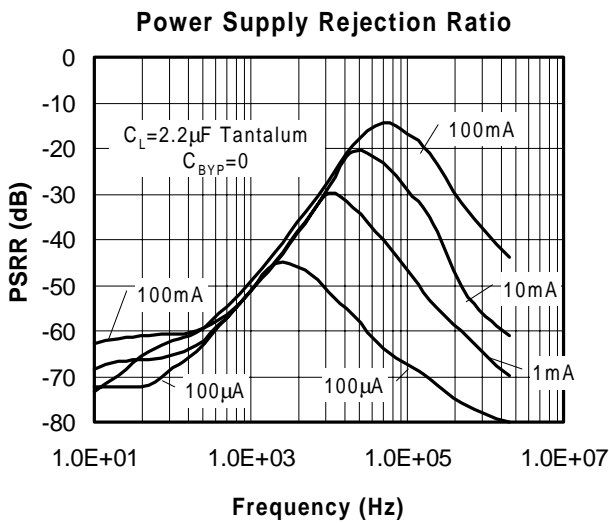
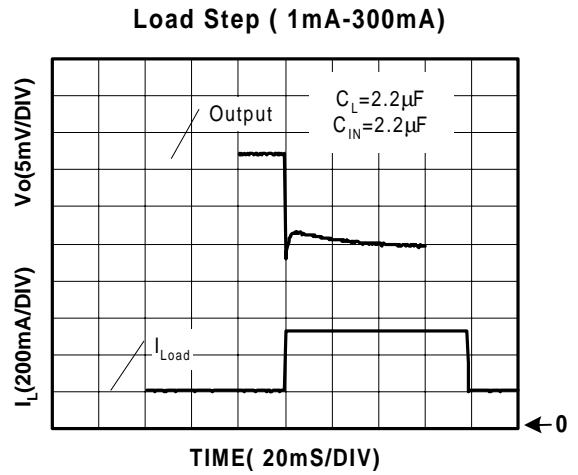
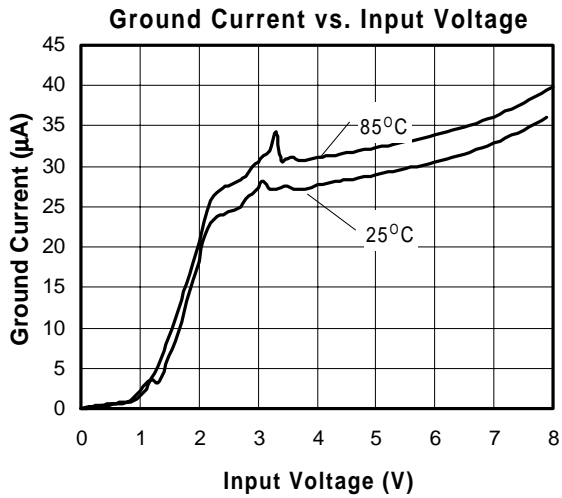
■ Thermal Information

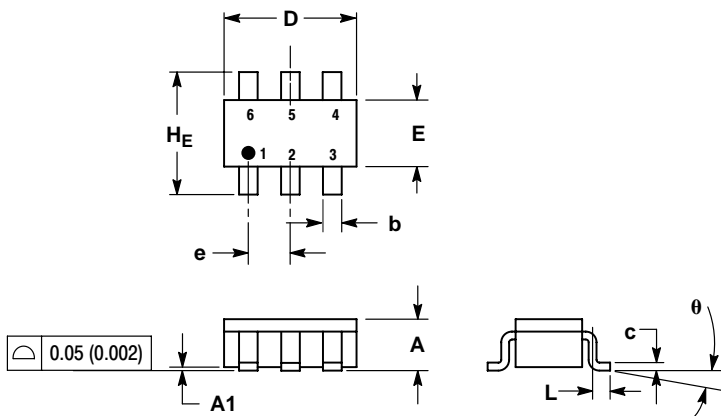
Parameter	Maximum	Unit
Thermal Resistance (θ_{ja})	260	°C / W
Internal Power Dissipation (P_D) ($\Delta T = 100^\circ\text{C}$)	380	mW
Maximum Junction Temperature	150	°C
Maximum Lead Temperature (10 Sec)	300	°C

ELECTRICAL CHARACTERISTICS $T_A = 25^{\circ}C$ $V_{IN} = 5V$ unless otherwise noted

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Input Voltage	V_{IN}		Note 1		7	V
Output Voltage Accuracy	V_O	$I_O = 1mA$	-1.5		1.5	%
Dropout Voltage	$V_{DROPOUT}$	$I_O = 300mA$ $V_O = V_{ONOM} - 2.0%$	$1.5V < V_{O(NOM)} \leq 2.0V$	See chart	1300	mV
			$2.0V < V_{O(NOM)} \leq 2.8V$		400	
			$2.8V < V_{O(NOM)} < 3.8V$		300	
Output Current	I_O	$V_O > 1.2V$	300			mA
Current Limit	I_{LIM}	$V_O > 1.2V$	300	450		mA
Short Circuit Current	I_{SC}	$V_O < 0.8V$		150	300	mA
Quiescent Current	I_Q	$I_O = 0mA$		30	50	μA
Ground Pin Current	I_{GND}	$I_O = 1mA$ to 300mA		35		μA
Line Regulation	REG_{LINE}	$I_O = 5mA$ $V_{IN} = V_O + 1$ to $V_O + 2$	$V_O < 2.0V$		0.15	%
			$V_O \geq 2.0V$	0.02	0.1	%
Load Regulation	REG_{LOAD}	$I_O = 1mA$ to 300mA		0.2	1	%
Over Temperature Shutdown	OTS			150		$^{\circ}C$
Over Temperature Hysteresis	OTH			30		$^{\circ}C$
V_O Temperature Coefficient	TC			30		ppm/ $^{\circ}C$
Power Supply Rejection	PSRR	$I_O = 100mA$ $C_O = 2.2\mu F$	$f = 1kHz$		50	dB
			$f = 10kHz$		20	
			$f = 100kHz$		15	
Output Voltage Noise	eN	$f = 10Hz$ to 100kHz $I_O = 10mA, C_{BYP} = 0\mu F$			30	μV_{rms}
ADJ Input Bias Current	I_{ADJ}			1		μA
ADJ Reference Voltage	V_{REF}		1.203	1.215	1.227	V
EN Input Threshold	V_{EH}	$V_{IN} = 2.7V$ to 7V	2.0		V_{in}	V
	V_{EL}	$V_{IN} = 2.7V$ to 7V	0		0.4	V
EN Input Bias Current	I_{EH}	$V_{EN} = V_{IN}, V_{IN} = 2.7V$ to 7V			0.1	μA
	I_{EL}	$V_{EN} = 0V, V_{IN} = 2.7V$ to 7V			0.5	μA
Shutdown Supply Current	I_{SD}	$V_{IN} = 5V, V_O = 0V, V_{EN} < V_{EL}$		0.5	1	μA
Shutdown Output Voltage	$V_{O,SD}$	$I_O = 35\mu A, V_{EN} < V_{EL}$	0		0.1	V
Output Under Voltage	V_{UV}				85	% $V_{O(NOM)}$
Output Over Voltage	V_{OV}		115			% $V_{O(NOM)}$
PG Leakage Current	I_{LC}	$V_{PG} = 7V$			1	μA
PG Voltage Rating	V_{PG}	V_O in regulation			7	V
PG Voltage Low	V_{OL}	$I_{SINK} = 0.4mA$			0.4	V

Note1: $V_{IN(min)} = V_{OUT} + V_{DROPOUT}$





SOT-23-6

NOTES:

1. DIMENSIONING AND TOLERANCING PER
2. CONTROLLING DIMENSION: MILLIMETER.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS A AND B DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.90	1.00	1.10	0.035	0.039	0.043
A1	0.01	0.06	0.10	0.001	0.002	0.004
b	0.25	0.38	0.50	0.010	0.014	0.020
c	0.10	0.18	0.26	0.004	0.007	0.010
D	2.90	3.00	3.10	0.114	0.118	0.122
E	1.30	1.50	1.70	0.051	0.059	0.067
e	0.85	0.95	1.05	0.034	0.037	0.041
L	0.20	0.40	0.60	0.008	0.016	0.024
HE	2.50	2.75	3.00	0.099	0.108	0.118
θ	0°	-	10°	0°	-	10°