DESCRIPTION

A6110B series are a group of positive voltage output, high precise, and low power consumption voltage regulator. Voltages are selectable in 100mV steps within a range of 1.2V to 5.0V. It also can be customized on command.

A6110B series have excellent load and line transient response and good temperature characteristics, which can assure the stability of chip and power system. And it uses trimming technique to guarantee output voltage accuracy within ±2%.

The A6110B is available in SOT-25 package.

ORERING INFORMATION

Package Type	Part Number	
SOT-25 SPQ: 3,000pcs/Reel	E5	A6110BE5R-XX
		A6110BE5VR-XX
Note	XX: Output Voltage V: Halogen free Package R: Tape & Reel	
AiT provides all RoHS products		

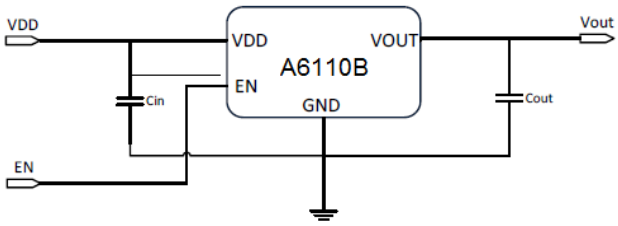
FEATURES

- Low Quiescent Current: 100μA at 5V
- High PSRR: 65dB range to 1kHz
- Low Output Noise: 44uVRMS
- Low Dropout: 200mV@I_{OUT}=0.8A, V_{OUT}=3.3V
- Maximum output current: 1A
- Highly Accurate: ±2%
- Low ESR Ceramic Capacitor Compatible
- Available in SOT-25 package.

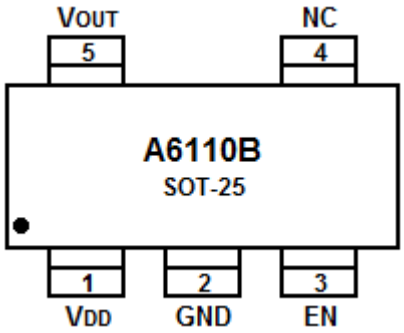
APPLICATION

- Reference Voltage Source
- Battery Powered Equipment
- PC Peripherals
- Wireless Devices
- Instrumentation

TYPICAL APPLICATION



PIN DESCRIPTION



Top View

Pin Number	Symbol	Functions
1	V_{DD}	Supply Voltage Input
2	GND	Ground Pin
3	EN	Chip Enable
4	NC	No Connection
5	V_{OUT}	Output Voltage

ABSOLUTE MAXIMUM RATINGS

Max Input Voltage		8V
T_J, Max Operating Junction Temperature		145°C
T_A, Ambient Temperature		-40°C ~85°C
Power Dissipation	SOT-25	250mW
T_S, Storage Temperature		-40°C~150°C
Lead Temperature & Time		260°C, 10sec

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

RECOMMENDED WORK CONDITIONS

Parameter	Symbol	Value	Units
Input Voltage Range		Max. 6	V
Ambient Temperature		-40 ~85	°C
Operating Junction Temperature	T_J	125	°C

ELECTRICAL CHARACTERISTICS

Test Conditions: C_{IN}=4.7uF, C_{OUT}=4.7uF, T_A=25°C, unless otherwise specified.

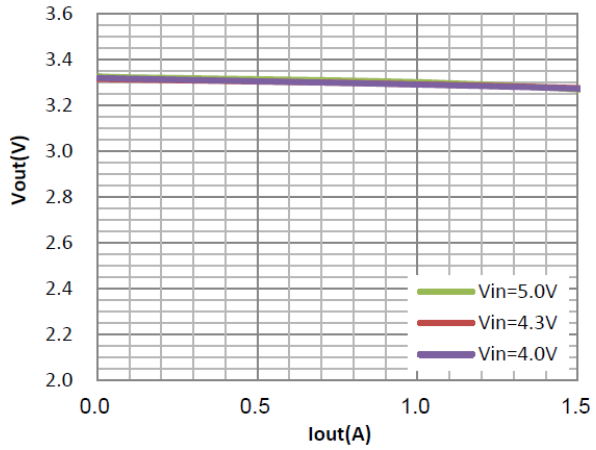
Parameter	Symbol	Conditions		Min	Typ	Max	Units
Input Voltage	V_{DD}			1.5 NOTE1	-	6	V
Output Voltage	V_{OUT}	V_{DD}=Set V_{OUT}+1V 1mA≤I_{OUT}≤10mA	V_{OUT}>1.5	V_{OUT} X0.98	V_{OUT}	V_{OUT} X1.02	V
			V_{OUT}<=1.5	V_{OUT} -0.03		V_{OUT} +0.03	
Maximum Output Current	$I_{OUT\ (Max.)}$ NOTE2	V_{DD}-V_{OUT}=1V		1	-	-	A
Dropout Voltage	V_{DROP}	V_{OUT} =3.3V, I_{OUT}=1A		-	300	500	mV
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	I_{OUT}=10mA, 4V≤V_{DD}≤6V		-	0.05	0.2	%/V
Load Regulation	V_{OUT}	V_{DD}=Set V_{OUT}+1V 1mA≤I_{OUT}≤2.5A		-	30	60	mV
Supply Current	I_S	V_{DD}=Set V_{OUT}+1V, V_{OUT} Floating		-	100	150	μA
Output Voltage Temperature Coefficient	$\frac{\Delta V_{OUT}}{\Delta T \times V_{OUT}}$	I_{OUT}=10mA		-	±100	-	ppm/°C
Ripple Rejection	PSRR	f=100Hz, Ripple=0.5Vp-p, V_{DD}=Set V_{OUT}+1V		-	65	-	dB
EN Input Voltage “H”	V_{ENH}			0.95	-	V_{IN}	V
EN Input Voltage “L”	V_{ENL}			0	-	0.25	V
Output Noise	en	BW=10Hz~100kHz		-	44	-	uVrms

NOTE1: I_{OUT}=350mA@V_{IN}=1.5V, V_{OUT}=1.2V

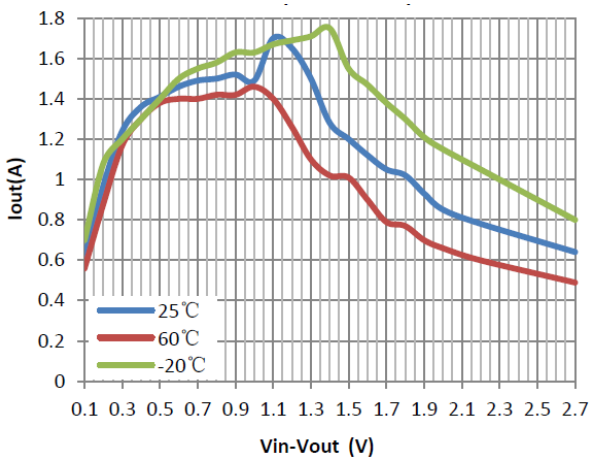
NOTE2: The maximum power rating of each package is a constant, so along with the change of I_{LOAD}, the V_{DD}-V_{OUT} should be controlled to a certain range to ensure the normal operation.

TYPICAL PERFORMANCE CHARACTERISTIC

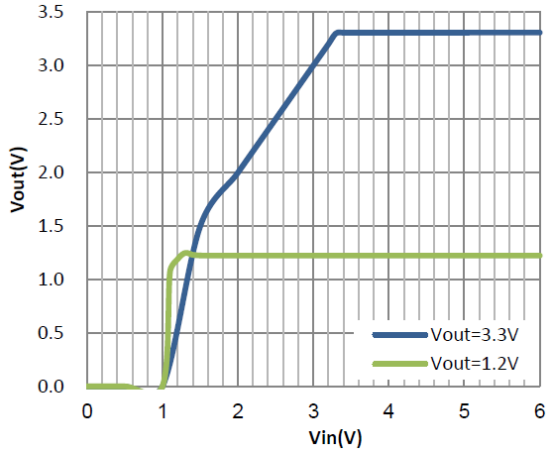
1. Load Regulation (V_{OUT}=3.3V)



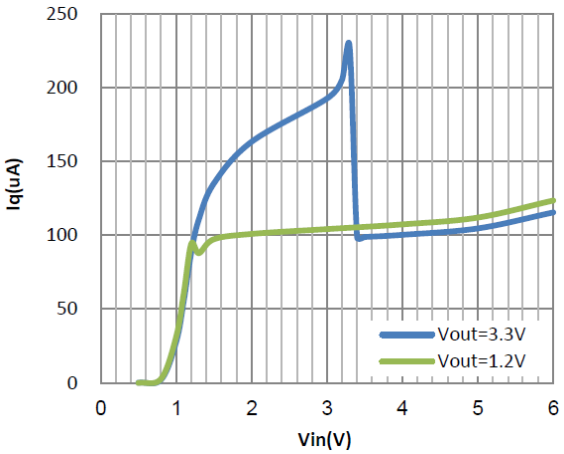
2. Safe Operation Area (V_{OUT}=3.3V)



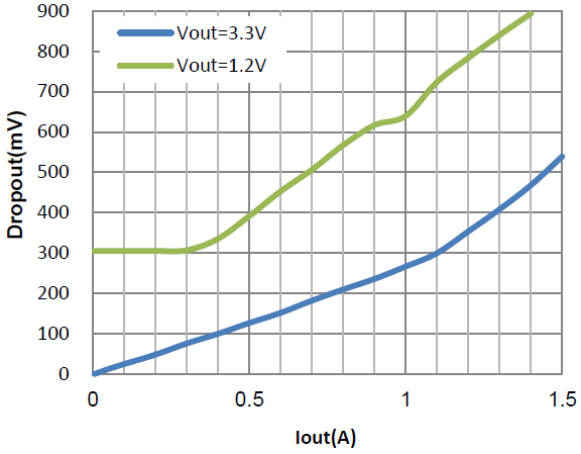
3. Line Regulation



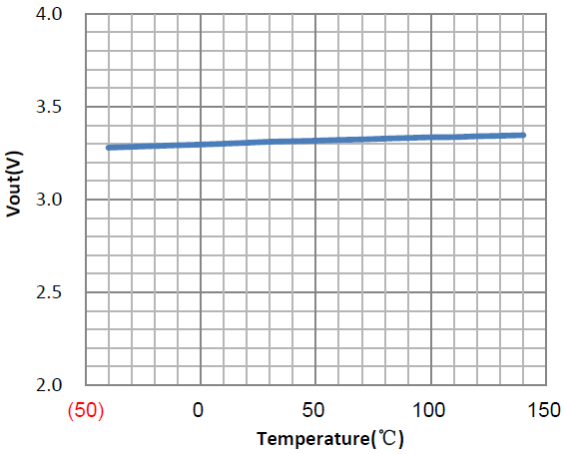
4. Iq



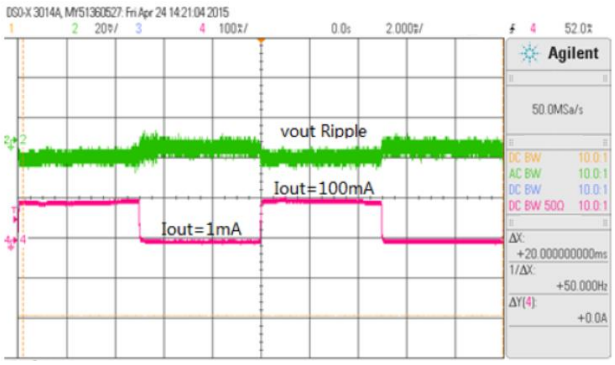
5. Dropout Voltage



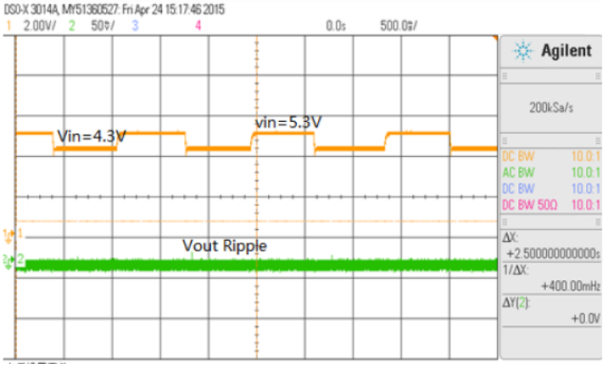
6. V_{OUT} vs. Temperature



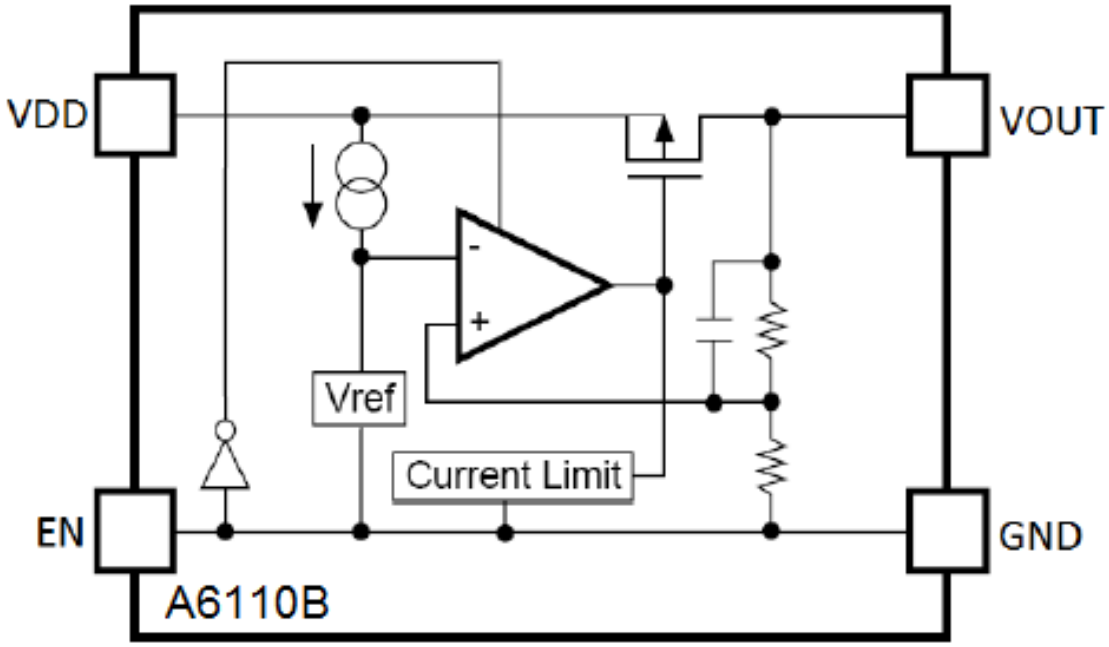
7. Load Transient Response (V_{IN}=5V,V_{OUT}=3.3V)
   C_{IN}=1uF,C_{OUT}=1uF,I_{OUT}=1mA-100mA



8. Line Transient Response(V_{IN}=5V,V_{OUT}=3.3V)
   C_{IN}=1uF,C_{OUT}=1uF,I_{OUT}=10mA,V_{IN}=4.3V-5.3V

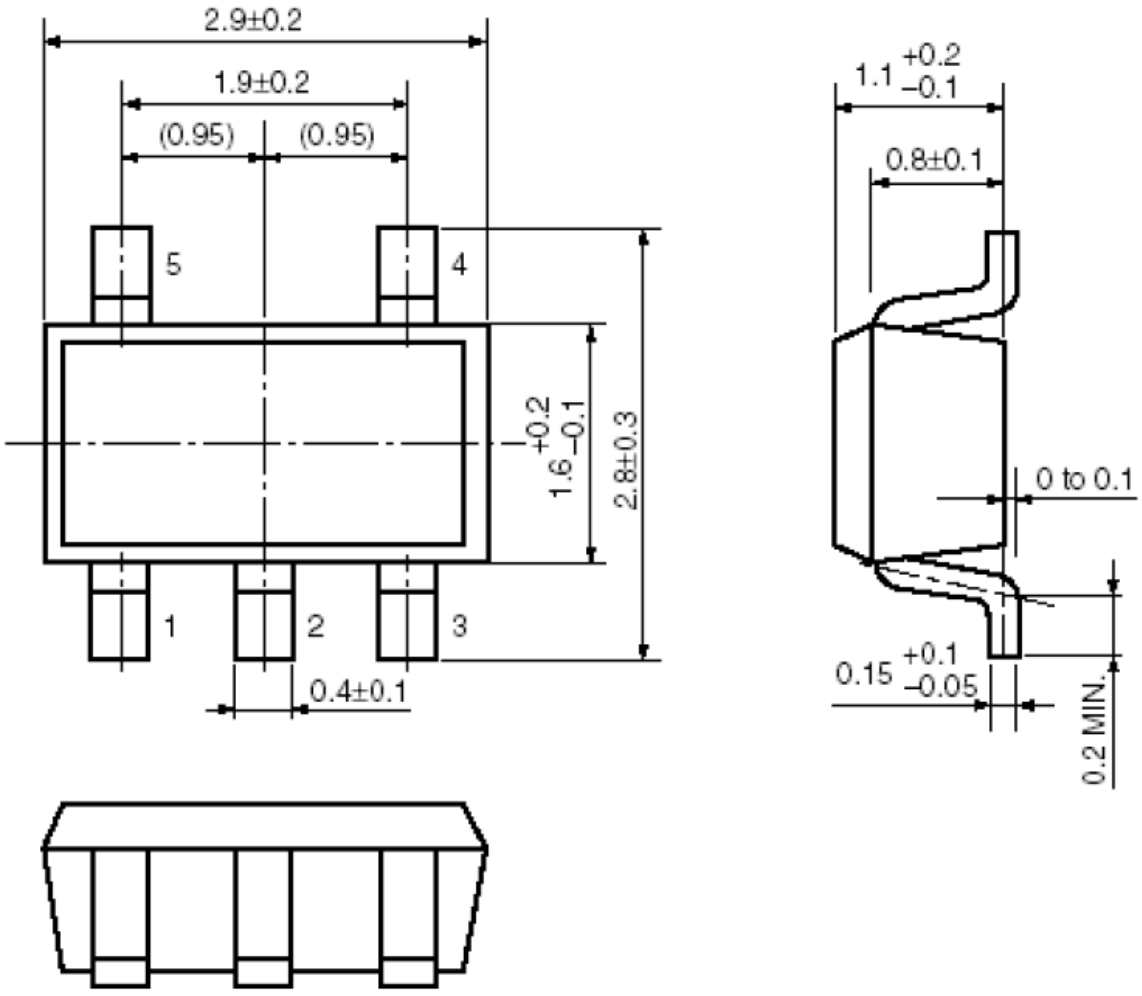


BLOCK DIAGRAM



PACKAGE INFORMATION

Dimension in SOT-25 (Unit: mm)



IMPORTANT NOTICE

AiT Semiconductor Inc. (AiT) reserves the right to make changes to any its product, specifications, to discontinue any integrated circuit product or service without notice, and advises its customers to obtain the latest version of relevant information to verify, before placing orders, that the information being relied on is current.

AiT Semiconductor Inc.'s integrated circuit products are not designed, intended, authorized, or warranted to be suitable for use in life support applications, devices or systems or other critical applications. Use of AiT products in such applications is understood to be fully at the risk of the customer. As used herein may involve potential risks of death, personal injury, or servere property, or environmental damage. In order to minimize risks associated with the customer's applications, the customer should provide adequate design and operating safeguards.

AiT Semiconductor Inc. assumes to no liability to customer product design or application support. AiT warrants the performance of its products of the specifications applicable at the time of sale.