



## DESCRIPTION

A6518A is a positive voltage adjustable output, low power consumption, low dropout voltage regulator. A6518A can provide output value adjustable from 1.2V to 5.0V.

A6518A includes high accuracy voltage reference, error amplifier, current limit circuit and output driver module with discharge capability.

A6518A has excellent load and line transient response and good temperature characteristics, which can assure the stability of chip and power system. And it also provides foldback short-circuit protection, thermal protection and output current limit function.

The A6518A is available in SOT-25 package.

## ORDERING INFORMATION

Package Type	Part Number	
SOT-25 SPQ: 3,000pcs/Reel	E5	A6518AE5R-ADJ
		A6518AE5VR-ADJ
Note	V: Halogen free Package R: Tape & Reel	
AiT provides all RoHS products		

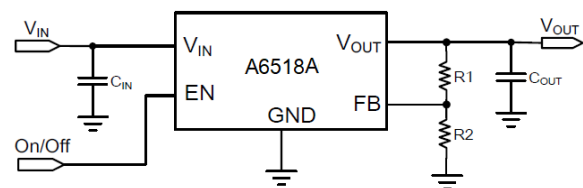
## FEATURES

- Low Power Consumption: 30μA (Typ.)
- Maximum output current: 500mA
- Low dropout Voltage:  
450mV@I<sub>OUT</sub>=500mA, V<sub>OUT</sub>=3.3V
- Input voltage range: 1.7 to 7.5V
- Adjustable Output from 1.2V to 5.0V
- Output current limit: 800mA (Typ.)
- Available in SOT-25 package

## APPLICATION

- Power source for cellular phones and various kind of PCSs
- Battery Powered equipment
- Power Management of MP3, PDA, DSC, Mouse, PS2 Games
- Reference Voltage Source
- Regulation after Switching Power

## TYPICAL APPLICATION



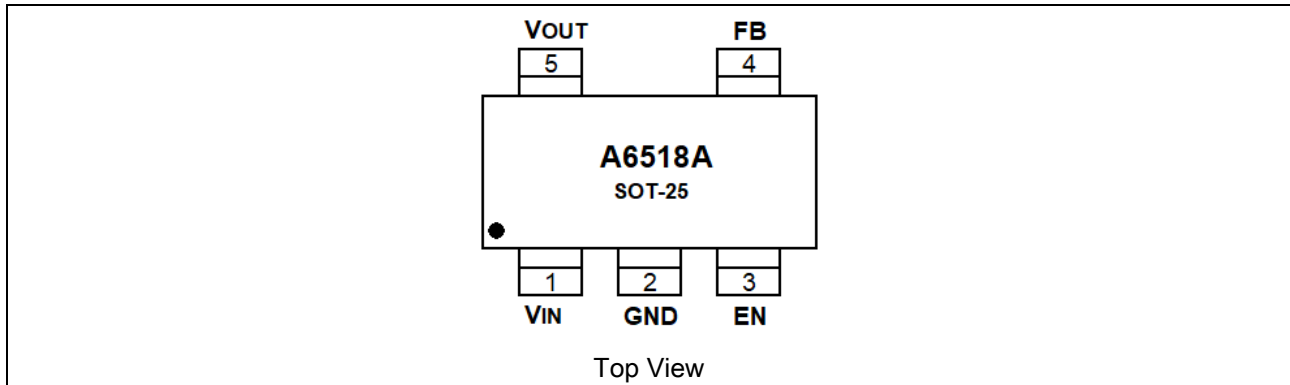
NOTE:

1) Input capacitor (C<sub>IN</sub>=1μF) and Output capacitor (C<sub>OUT</sub>=1μF) are recommended in all application circuit.

2)  $V_{OUT} = V_{FB} * (1 + \frac{R1}{R2})$ , V<sub>FB</sub>=1.2V



## PIN DESCRIPTION



Pin #	Symbol	Function
1	V <sub>IN</sub>	Supply Voltage Input. Supply voltage can range from 1.7V to 7.5V.
2	GND	Ground Pin
3	EN	Enable Pin. A logic low reduces the supply current to 10μA. Connect to IN for normal operation.
4	FB	Feedback Pin. This is used to set the output voltage of the device.
5	V <sub>OUT</sub>	Output Voltage



## ABSOLUTE MAXIMUM RATINGS

Max Input Voltage	8V
T <sub>J</sub> , Operating Junction Temperature	150°C
T <sub>A</sub> , Ambient Temperature	-40°C~85°C
Power Dissipation	SOT-25 400mW
T <sub>S</sub> , Storage Temperature	-40°C~150°C
Lead Temperature & Time	260°C, 10s

Stress beyond above listed "Absolute Maximum Ratings" may lead permanent damage to the device. These are stress ratings only and operations of the device at these or any other conditions beyond those indicated in the operational sections of the specifications are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

## RECOMMENDED WORK CONDITIONS

Parameter	Value
Input Voltage Range	1.7V to 7.5V
Ambient Temperature	-40°C to 85°C



## ELECTRICAL CHARACTERISTICS

Test Conditions:  $C_{IN}=1\mu F$ ,  $C_{OUT}=1\mu F$ ,  $T_A=25^\circ C$ , unless otherwise specified.

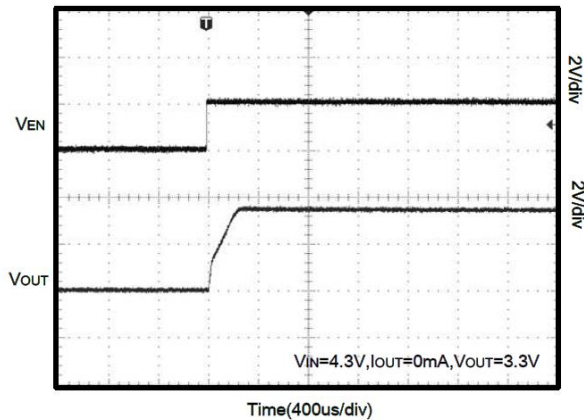
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Input Voltage	$V_{IN}$		1.7	-	7.5	V
Regulated Feedback Voltage	$V_{FB}$	$I_{OUT}=0.1mA$	1.18	1.21	1.24	V
Dropout Voltage	$V_{DROP}^*$	$V_{OUT}=1.2V, I_{OUT}=500mA$	-	900	-	mV
		$V_{OUT}=1.5V, I_{OUT}=500mA$	-	630	-	
		$V_{OUT}=3.3V, I_{OUT}=500mA$	-	450	-	
Line Regulation	$\Delta V_{LNR}$	$V_{IN} = (V_{OUT} + 0.5V)$ to 5.5V, $I_{OUT} = 1mA$	-	0.1	0.2	%/V
Load Regulation	$\Delta V_{LOAD}$	$I_{OUT}=0.1mA$ to 500mA $C_{OUT}=1\mu F$	-	0.5	10	mV
Supply Current	$I_Q$	No load	-	30	40	$\mu A$
Supply Current	$I_{STANDBY}$	$V_{IN}=V_{OUT}+1V, V_{EN}=GND$	-	0.1	1.0	$\mu A$
Output Voltage Temperature Coefficient	$\frac{\Delta V_{OUT}}{\Delta T \times V_{OUT}}$	$I_{LOAD} = 0.1mA$	-	35	-	ppm/ $^\circ C$
EN Input Voltage "H"	$V_{ENH}$	$V_{IN}=5V$	1.8	-	-	V
EN Input Voltage "L"	$V_{ENL}$	$V_{IN}=5V$	-	-	0.6	V
Ripple Rejection	PSRR	$f=1kHz$	-	70	-	dB
Current Limit	$I_{LIM}$	$V_{IN}=4.3V, V_{OUT}=3.3V$	500	800	-	mA
Thermal Shutdown Temp	$T_{SD}$		-	150	-	$^\circ C$
Thermal Shutdown Hysteresis	$T_{SH}$		-	15	-	$^\circ C$



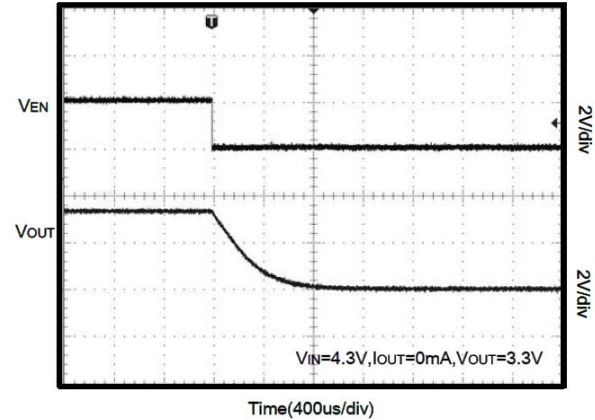
## TYPICAL PERFORMANCE CHARACTERISTICS

$V_{IN} = V_{OUT(NOMINAL)} + 0.5V$ ,  $V_{OUT}=3.3V$ ,  $C_{IN} = 1\mu F$ ,  $C_{OUT} = 1\mu F$ ,  $T_A = +25^\circ C$ , unless otherwise noted.

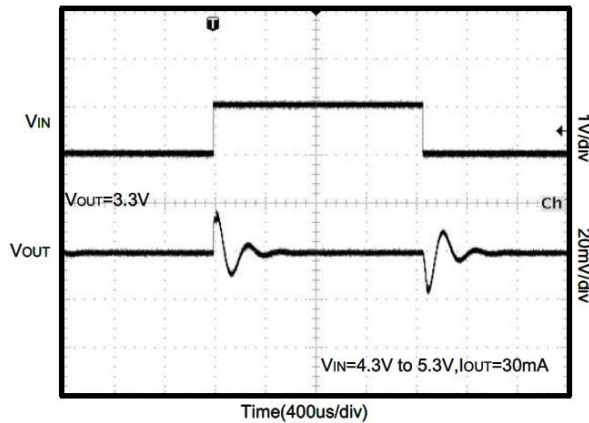
### 1. Turn On Speed With EN Pin



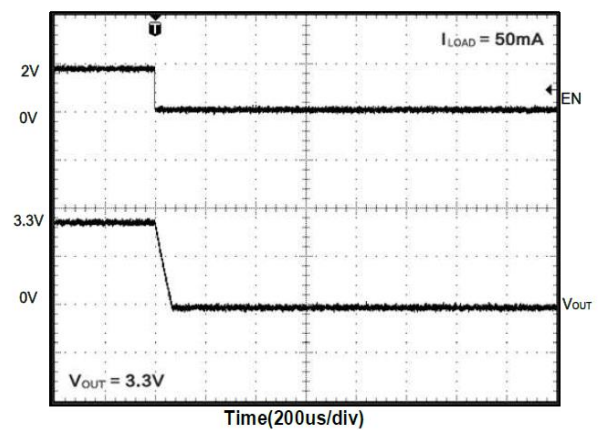
### 2. Turn Off Speed With EN Pin



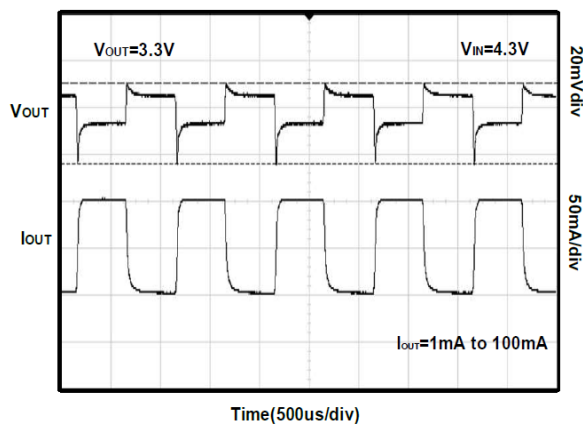
### 3. Line Transient Response



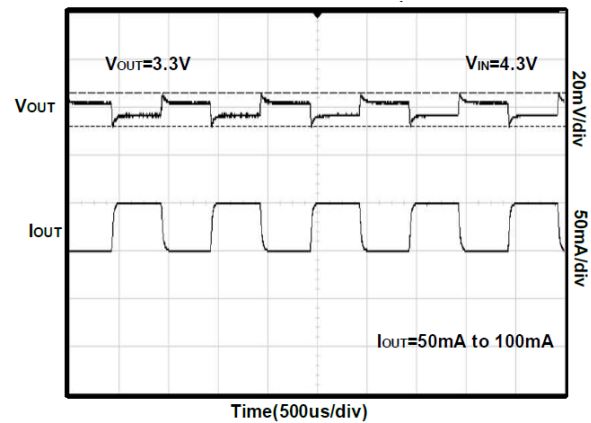
### 4. Shutdown



### 5. Load Transient Response

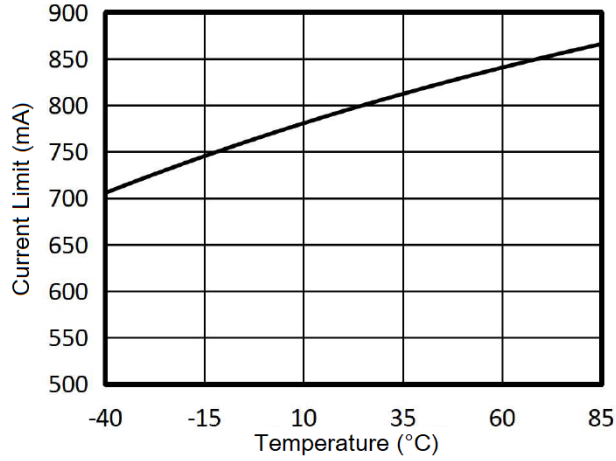


### 6. Load Transient Response

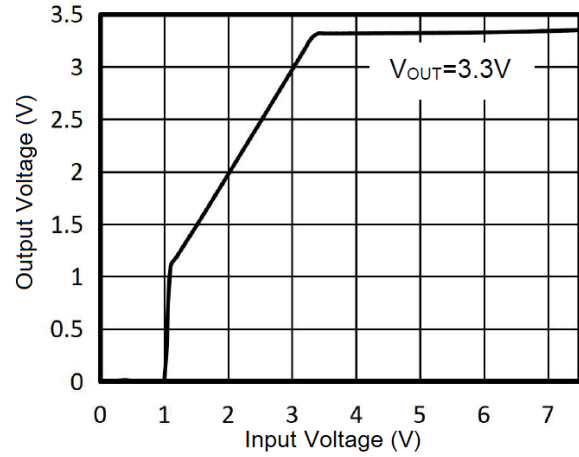




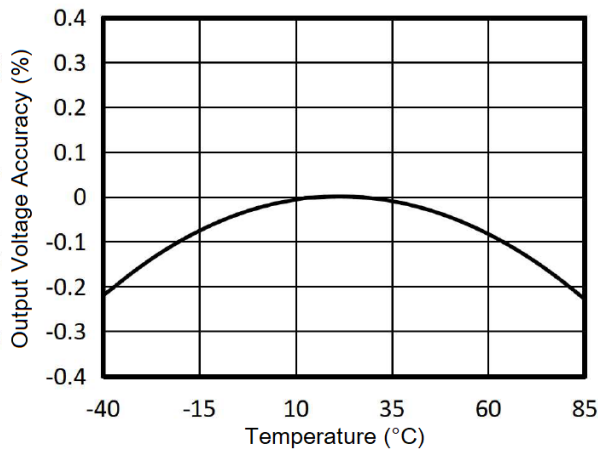
7. Current Limit vs. Temperature



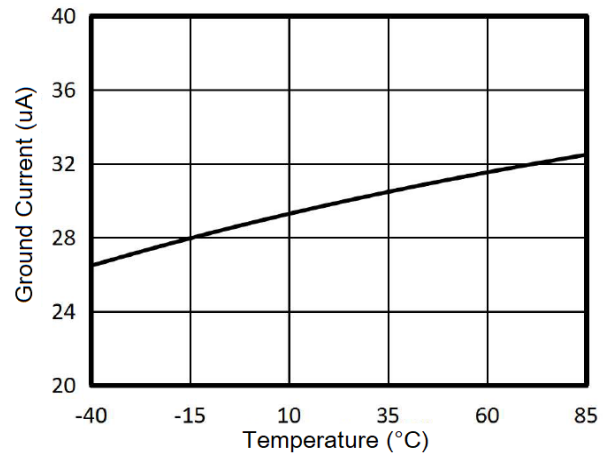
8. Output Voltage vs. Input Voltage



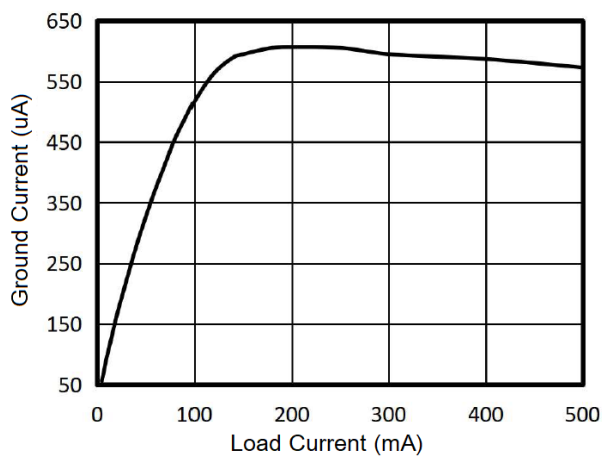
9. Output Voltage Accuracy vs. Temperature



10. Ground Current vs. Temperature

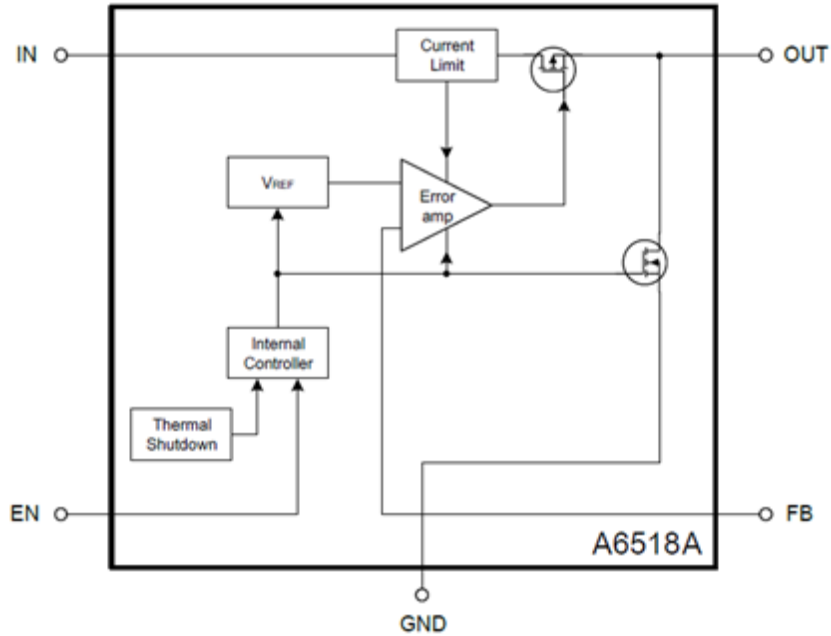


11. Ground Current vs. Load Current





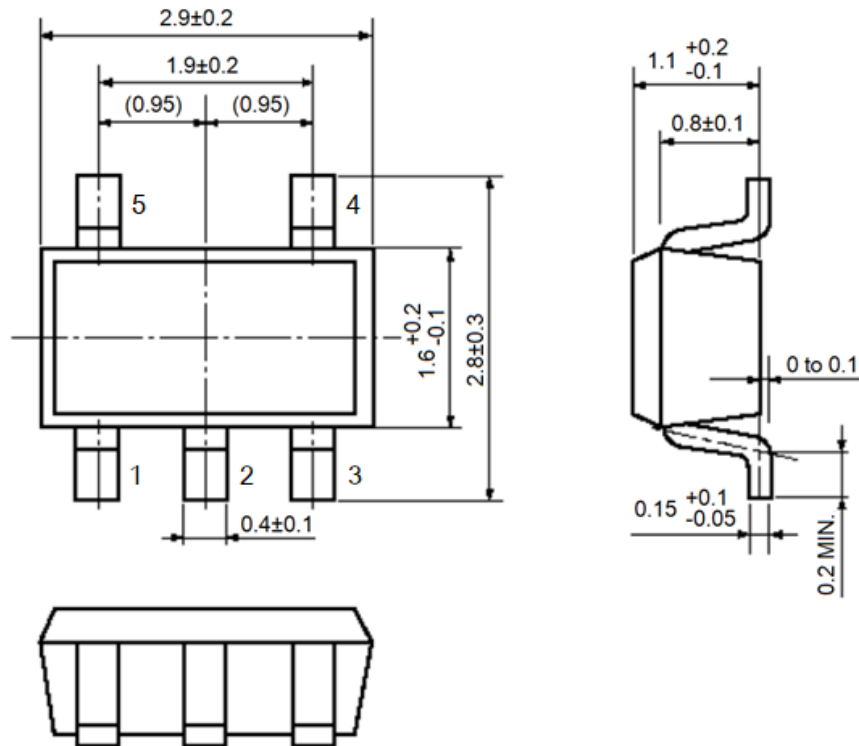
**BLOCK DIAGRAM**





## PACKAGE INFORMATION

Dimension in SOT-25 (Unit: mm)







## IMPORTANT NOTICE

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