



DESCRIPTION

The A6318A series are highly precise, low noise, positive voltage LDO regulators manufactured using CMOS processes. The series achieves high ripple rejection and low dropout and consists of a standard voltage source, an error correction, current limiter and a phase compensation circuit plus a driver transistor. External output feedback, customers can easily get the required voltage. In order to make the load current does not exceed the current capacity of the output transistor, built-in over-current protection, over temperature protection and short circuit protection.

A6318A may have the POWER GOOD indicator. When the FB voltage reaches 0.75V, PG output is high. When the FB drops below 0.7V, PG output is low. The internal op amp with advanced structure, the output capacitor can be omitted!

The A6318A is available in SOT-25 package.

ORDERING INFORMATION

Package Type	Part Number	
SOT-25	E5	A6318AE5R-ADJ
		A6318AE5VR-ADJ
Note	V: Halogen free Package R: Tape & Reel	
AiT provides all RoHS products		
Suffix “ V ” means Halogen free Package		

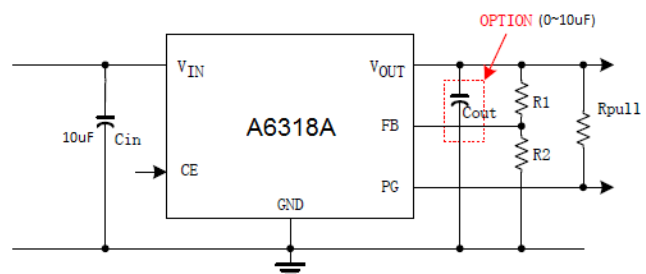
FEATURES

- programmable output: Minimum can go to 0.8V
- Highly Accurate: $\pm 1.5\%$
- Dropout Voltage: 300mV @ 100mA (3.0V type)
- High Ripple Rejection: 50dB (10kHz)
- Low Power Consumption: 30 μ A (TYP.)
- Maximum Output Current : 300mA
($V_{IN} \geq V_{OUT} + 1V$)
- Standby Current : less than 0.1 μ A
- Internal protector: current limiter ,short protector and over temperature protection
- Instructions with POWER GOOD
- Available in SOT-25 Package

APPLICATION

- Mobile phones
- Cordless phones
- Cameras, Video cameras
- Portable games
- Portable AV equipment
- Reference voltage
- Battery powered equipment

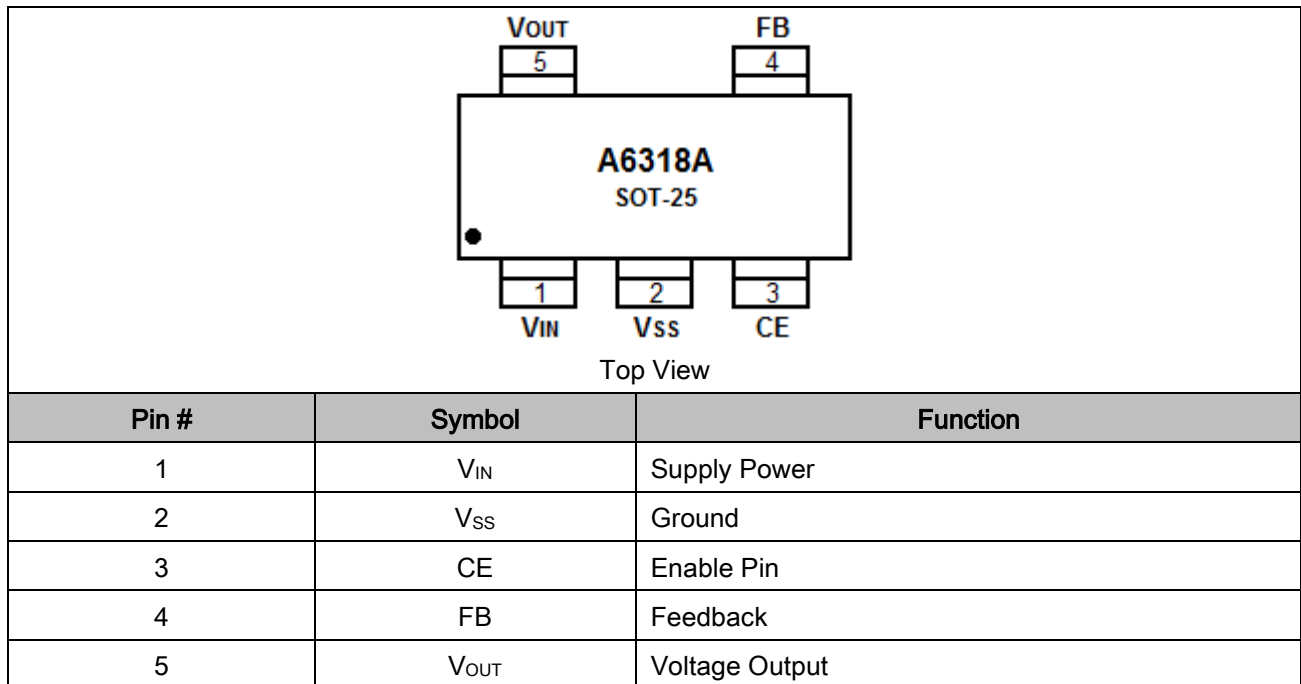
TYPICAL APPLICATION



$$V_{OUT} = 0.8 * (R1 + R2) / R2$$



PIN DESCRIPTION





ABSOLUTE MAXIMUM RATINGS

V _{IN} , Input Voltage		V _{SS} -0.3V ~ V _{SS} +6V
V _{CE} , Enable Voltage		V _{SS} -0.3V ~ V _{IN} +0.3V
V _{FB} , Feedback voltage		V _{SS} -0.3V ~ V _{IN} +0.3V
V _{OUT} , Output Current		V _{SS} -0.3V ~ V _{IN} +0.3V
P _D , Power Dissipation	SOT-25	350mW
T _{OPR} , Operating Ambient Temperature		-40°C ~ +85°C
T _{STG} , Storage Temperature		-40°C ~ +125°C

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.

THERMAL RESISTANCE

Package	θ_{JA}	θ_{JC}
SOT-25	250°C/W	130°C/W

NOTE: Thermal Resistance is specified with approximately 1 square of 1 oz copper.



ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Output Voltage	$V_{OUT(E)}$	$V_{IN} = V_{OUT(S)} + 1.0V$, $I_{OUT} = 30mA$	790	800	810	mV
Output Current	I_{OUT}	$V_{IN} \geq V_{OUT(S)} + 1.0V$	500*5			mA
Dropout Voltage	V_{DROP}	$I_{OUT} = 50mA$		0.12	0.20	V
		$I_{OUT} = 100mA$		0.30	0.45	
Line Regulations	ΔV_{OUT1}	$V_{OUT(S)} + 0.5V \leq V_{IN} \leq 8V$		0.10	0.20	% / V
	$\Delta V_{IN} \times V_{OUT}$	$I_{OUT} = 30mA$				
Load Regulation	ΔV_{OUT2}	$V_{IN} = V_{OUT(S)} + 1.0V$ $1.0mA \leq I_{OUT} \leq 100mA$		50	100	mV
Output Voltage Temperature Characteristics	ΔV_{OUT}	$V_{IN} = V_{OUT(S)} + 1.0V$, $I_{OUT} = 10mA$		± 100		ppm/ °C
	$\Delta T_A \times V_{OUT}$	$-40^\circ C \leq T_A \leq 85^\circ C$				
Supply Current	I_{SS1}	$V_{IN} = V_{OUT(S)} + 1.0V$		30	40	μA
Shutdown Current	I_{SHUT}	$V_{IN} = 5V$, $V_{CE} = 0$			0.1	μA
Input Voltage	V_{IN}		2.0		8	V
Ripple-Rejection	PSRR	$V_{IN} = V_{OUT(S)} + 1.0V$, $f = 1kHz$ $V_{RIP} = 0.5V_{RMS}$, $I_{OUT} = 50mA$		50		dB
Short-circuit Current	I_{SHORT}	$V_{IN} = V_{OUT(S)} + 1.0V$, ON/OFF Terminal is ON, $V_{OUT} = 0V$		30		mA
CE "High Voltage"	V_{CEH}		0.8			V
CE "Low" Voltage	V_{CEL}				0.75	V
CE "High Current"	I_{CEH}	$V_{IN} = V_{CE} = V_{OUT(T)} + 1V$	-0.1		0.1	μA
CE "Low" Current	I_{CEL}	$V_{IN} = V_{OUT(T)} + 1V$, $V_{CE} = V_{SS}$	-0.1		0.1	μA

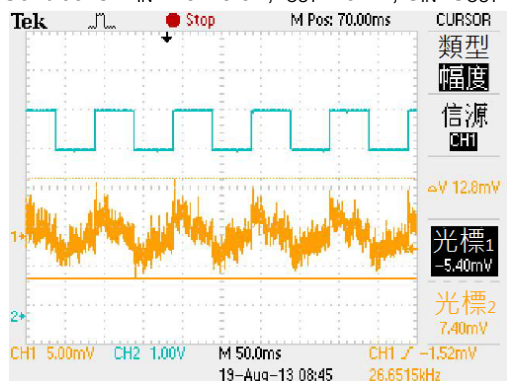


TYPICAL PERFORMANCE CHARACTERISTICS

Output 3.3V

1. The input voltage transient response

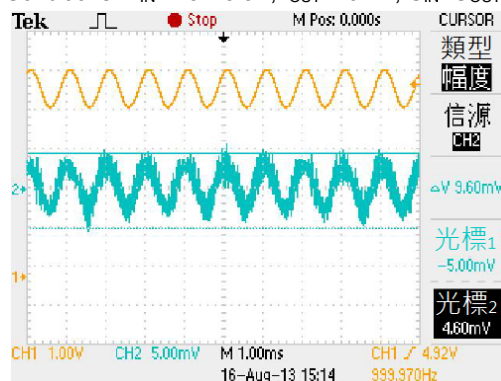
Test Conditions: $V_{IN}=4.3V-5.3V$, $I_{OUT}=10mA$, $C_{IN}=C_{OUT}=1\mu F$



Channel 2 input, channel 1 Output

2. Ripple rejection

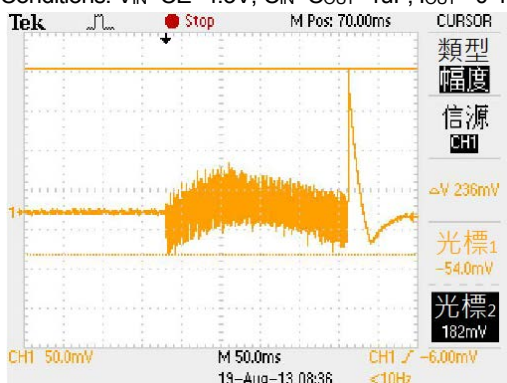
Test Conditions: $V_{IN}=4.3V-5.3V$, $I_{OUT}=10mA$, $C_{IN}=C_{OUT}=1\mu F$



Channel 1 input, channel 2 Output

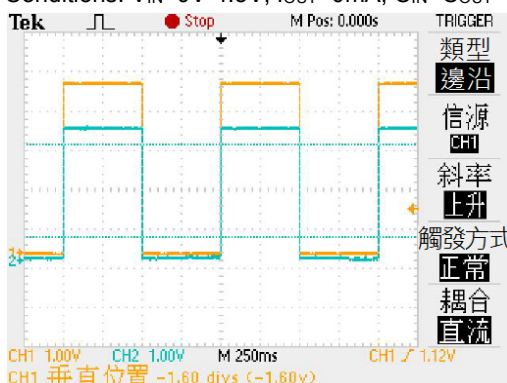
3. The load transient response

Test Conditions: $V_{IN}=CE=4.3V$, $C_{IN}=C_{OUT}=1\mu F$, $I_{OUT}=0-100mA$



5. Overshoot

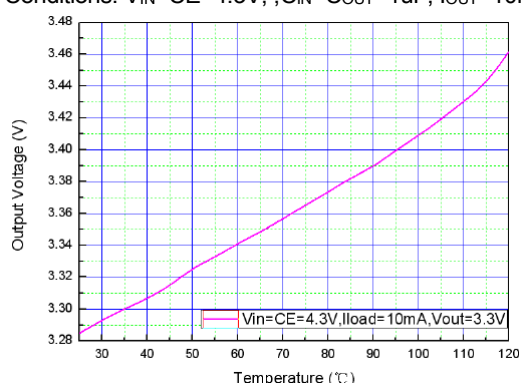
Test Conditions: $V_{IN}=0V-4.3V$, $I_{OUT}=0mA$, $C_{IN}=C_{OUT}=1\mu F$



Channel 1 input, channel 2 Output

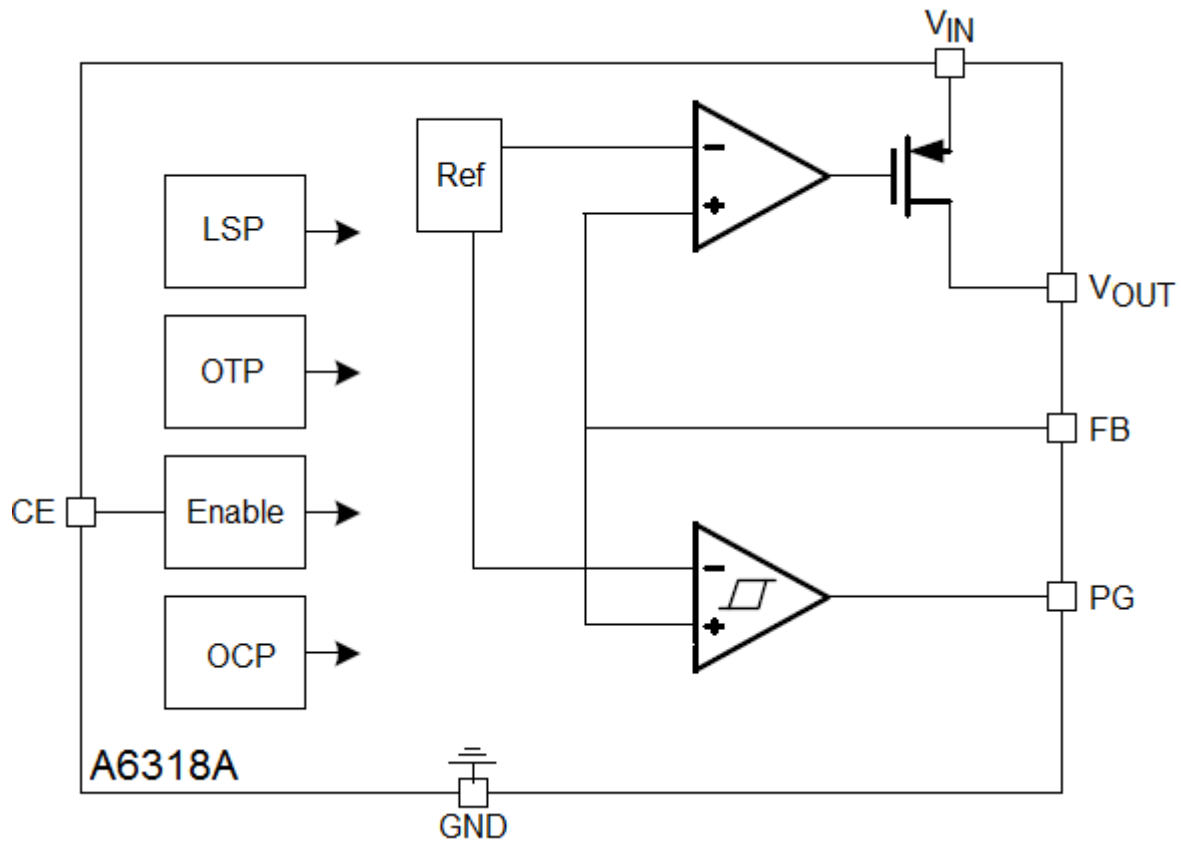
4. The output voltage temperature curve

Test Conditions: $V_{IN}=CE=4.3V$, $C_{IN}=C_{OUT}=1\mu F$, $I_{OUT}=10mA$





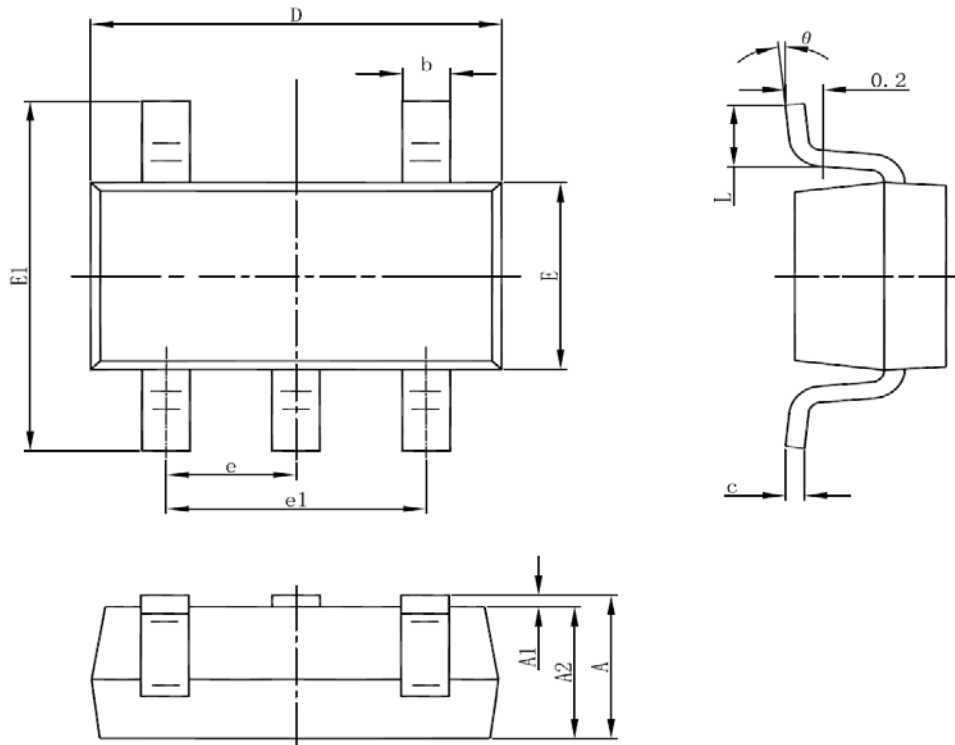
BLOCK DIAGRAM





PACKAGE INFORMATION

Dimension in SOT-25 (Unit: mm)



Symbol	Min	Max
A	1.050	1.250
A1	0.000	0.100
A2	1.050	1.150
b	0.300	0.500
c	0.100	0.200
D	2.820	3.020
E	1.500	1.700
E1	2.650	2.950
e	0.950(BSC)	
e1	1.800	2.000
L	0.300	0.600
θ	0°	8°



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