DESCRIPTION

A6505 dual, low-noise, low-dropout regulator delivers at least 500mA of continuous output current. The output voltage for each regulator is set independently by trimming. Voltages are selectable in 100mV steps within a range of 1.2V to 4.5V. The A6505 includes two independent logic-controlled shutdown inputs and allows the output of each regulator to be turned of independently.

A6505 includes high accuracy voltage reference, error amplifier, current limit circuit and output driver module.

A6505 has 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%.

A6505 is available in SOT-26 package.

ORDER INFORMATION

Package Type	Part Number	
SOT-26	E6	A6505E6R-X
		A6505E6VR-X
Note	X:OutputVoltage See output voltage portfolio R: Tape & Reel V: Halogen free Package	
AiT provides all RoHS products Suffix "V" means Halogen free Package		

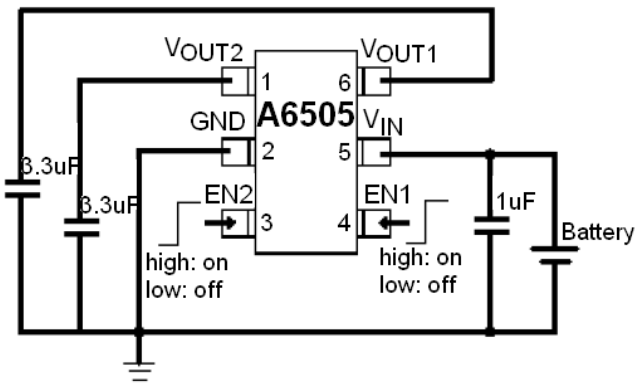
FEATURES

- Two low dropout voltage regulators
- 500mA output current for each LDO
- Low output noise (50uV$_{RMS}$)
- Low dropout Voltage:0.08V@150mA(Typ.)
- Standby Mode: 0.1uA
- High Ripple Rijection:72dB@1KHz (Typ.)
- Excellent Line regulation: 0.05%/V
- Independent Shutdown controls
- 1.2V to 4.5V Factory-Preset Output
- Output Current Limit
- Highly Accurate: ±2%
- Available in SOT-26 package.

APPLICATION

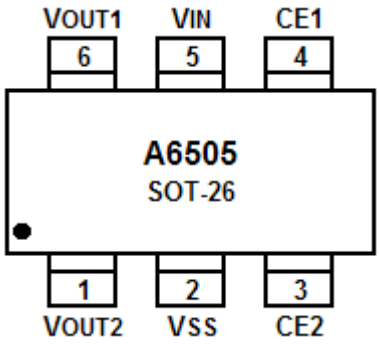
- Cellular phones
- Cordless phones and radio communication equipment
- Battery Powered equipment
- Notebook and hand-hold equipment
- Wireless LAN
- GPS receivers

TYPICAL APPLICATION



NOTE: Input capacitor (C_{IN}=1uF) and Output capacitor (C_{OUT}=1uF/3.3uF) are recommended in all application circuit.

PIN DESCRIPTION



Top View

Pin #	Symbol	Function
1	V_{OUT2}	CH2 Output Voltage
2	V_{SS}	Ground Pin
3	CE2	Chip Enable2
4	CE1	Chip Enable1
5	V_{IN}	Supply Voltage Input
6	V_{OUT1}	CH1 Output Voltage

OUTPUT VOLTAGE PORTFOLIO

Code	Output Voltage		Part Number		Code	Output Voltage		Part Number	
	OUT1	OUT2	Pb Free	GREEN		OUT1	OUT2	Pb Free	GREEN
B	1.5	2.8	A6505E6R-B	A6505E6VR-B	M	2.8	1.8	A6505E6R-M	A6505E6VR-M
C	1.5	3.0	A6505E6R-C	A6505E6VR-C	O	2.8	2.8	A6505E6R-O	A6505E6VR-O
D	1.5	3.3	A6505E6R-D	A6505E6VR-D	P	2.8	3.0	A6505E6R-P	A6505E6VR-P
E	1.5	4.0	A6505E6R-E	A6505E6VR-E	Q	3.0	2.5	A6505E6R-Q	A6505E6VR-Q
G	1.8	2.5	A6505E6R-G	A6505E6VR-G	R	3.0	3.0	A6505E6R-R	A6505E6VR-R
H	1.8	2.8	A6505E6R-H	A6505E6VR-H	S	3.0	3.3	A6505E6R-S	A6505E6VR-S
I	1.8	3.0	A6505E6R-I	A6505E6VR-I	T	3.3	1.8	A6505E6R-T	A6505E6VR-T
J	1.8	3.3	A6505E6R-J	A6505E6VR-J	U	3.3	3.3	A6505E6R-U	A6505E6VR-U

ABSOLUTE MAXIMUM RATINGS

Max Input Voltage		8V
T_J, Operating Junction Temperature		125°C
T_A, Ambient Temperature		-40°C ~ 85°C
Power Dissipation	SOT-26	250mW
T_S, Storage Temperature		-40°C ~ 150°C
Lead Temperature & Time		260°C,10S

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 is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

RECOMMENDED WORK CONDITIONS

Input Voltage Range	Max. 6V
Ambient Temperature	-40°C ~ 85°C

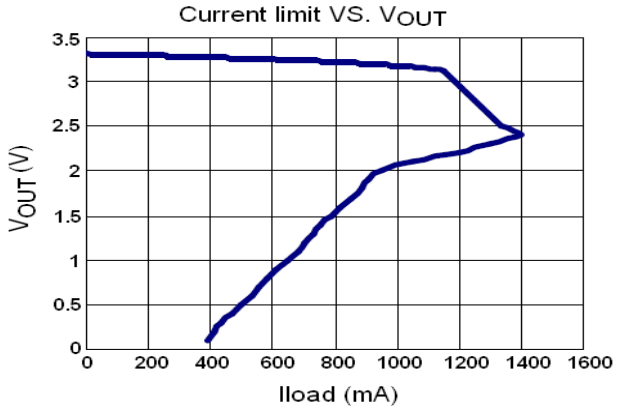
ELECTRICAL CHARACTERISTICS

Test Conditions: C_{IN}=1uF,C_{OUT}=3.3uF,T_A=25°C, unless otherwise specified.

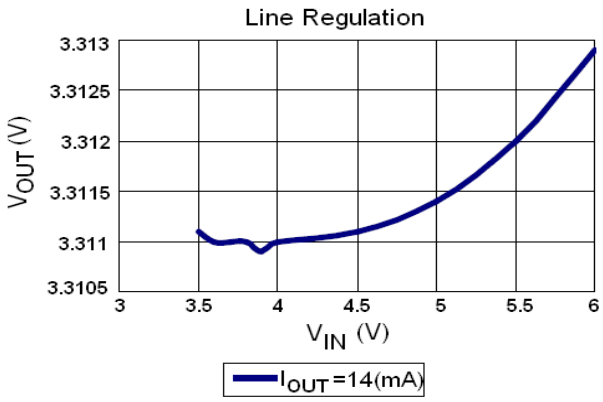
Parameter	Symbol	Conditions	Min	Typ.	Max	Units
Input Voltage	V_{IN}		1.2	-	6	V
Output Voltage	V_{OUT}	V_{IN}=Set, V_{OUT}+1V, 1mA≤I_{OUT}≤30mA	V_{OUT} x 0.98	V_{OUT1}	V_{OUT} x 1.02	V
Maximum Output Current	$I_{OUT(MAX)}$		600	-	-	mA
Dropout Voltage V_{OUT} ≥ 2.8V	V_{DROP}	I_{OUT} = 50mA	-	25	40	mV
		I_{OUT} = 100mA	-	50	75	
		I_{OUT} = 150mA	-	75	115	
		I_{OUT} = 400mA	-	220	280	
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	I_{OUT} = 40mA, 2.8V≤V_{IN}≤6V	-	0.05	0.1	%/V
Load Regulation	$\Delta V_{OUT} \times \Delta I_{OUT}$	V_{IN}=Set V_{OUT}+1V 1mA≤I_{OUT}≤500mA	-	100	150	mV
Supply Current	I_{SS}	V_{IN}=Set V_{OUT}+1V	-	30	50	uA
Supply Current (Standby)	$I_{STANDBY}$	V_{IN}=Set V_{OUT}+1V V_{CE}=0V	-	0.1	1.0	uA
Output Voltage Temperature Coefficiency	$\frac{\Delta V_{OUT}}{\Delta T \times V_{OUT}}$	V_{IN}=Set V_{OUT}+1V, I_{OUT}=30mA	-	±50	-	ppm/°C
Ripple Rejection	PSRR	F=1000Hz, Ripple=0.5V_{P-P} V_{IN}=Set V_{OUT}+1V	-	72	-	dB
Short Current Limit	I_{LIM}	V_{OUT}=0V	-	500	-	mA
CE Input Voltage “H”	V_{CEH}		1.4	-	-	V
CE Input Voltage “L”	V_{CEL}		-	-	0.25	V
Output Noise	en	BW=10Hz~100kHz	-	50	-	uV_{RMS}

TYPICAL CHARACTERISTICS

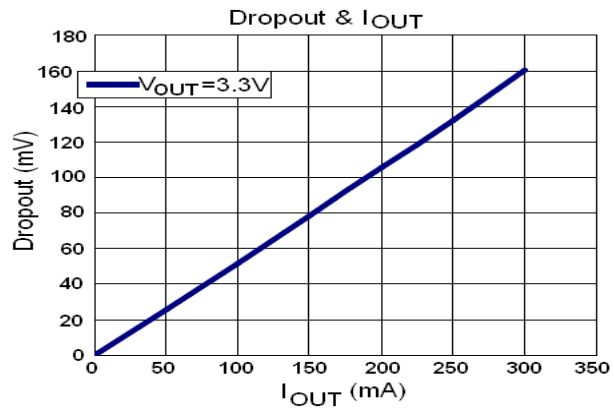
1. Output Voltage vs. Output Current (with output short protection)



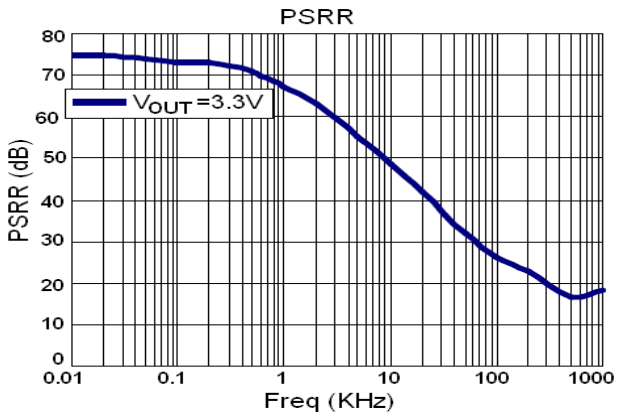
2. Output Voltage vs. Input Voltage



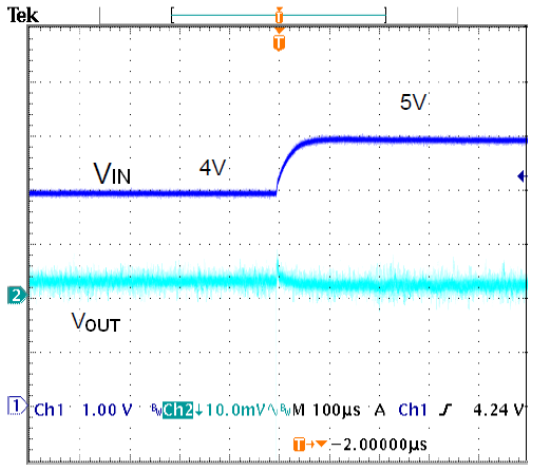
3. Dropout Voltage vs. Output Current

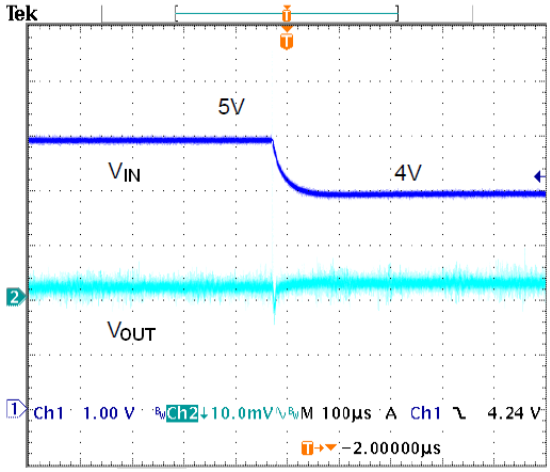


4. Ripple rejection vs. Frequency

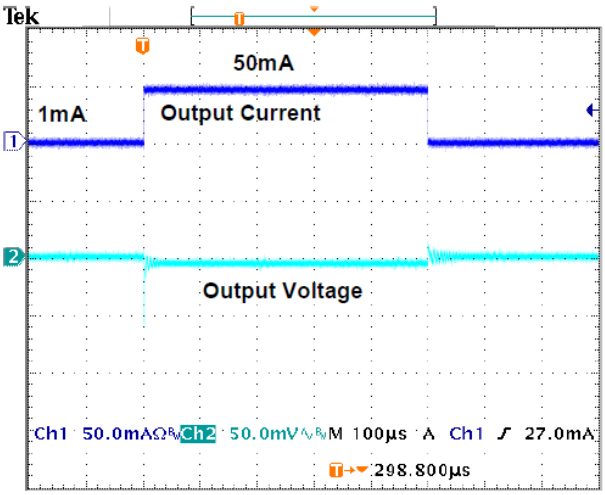


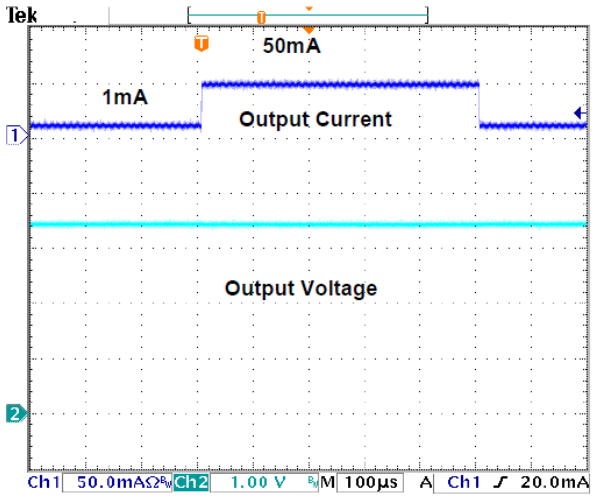
5. Line transient response, C_{IN}=C_{OUT}=1uF, I_{OUT}=25mA, V_{OUT}=3.3V



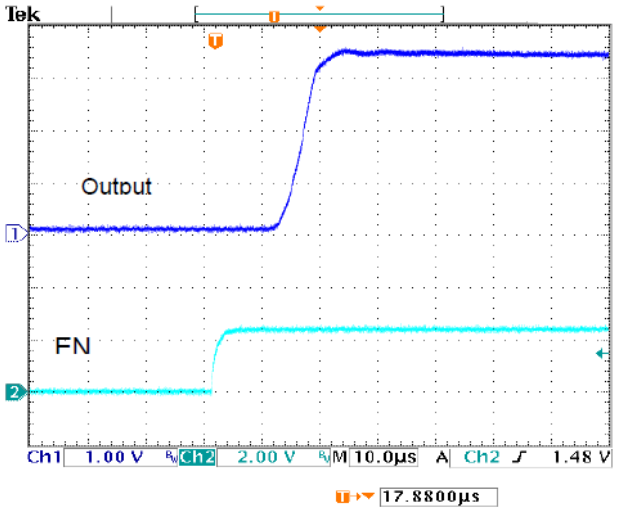


6. Load transient response, C_{IN}=C_{OUT}=1uF, V_{IN}=4.5V, V_{OUT}=3.3V

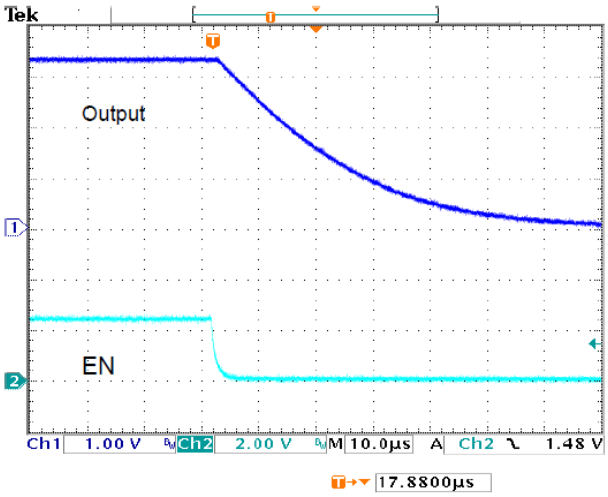




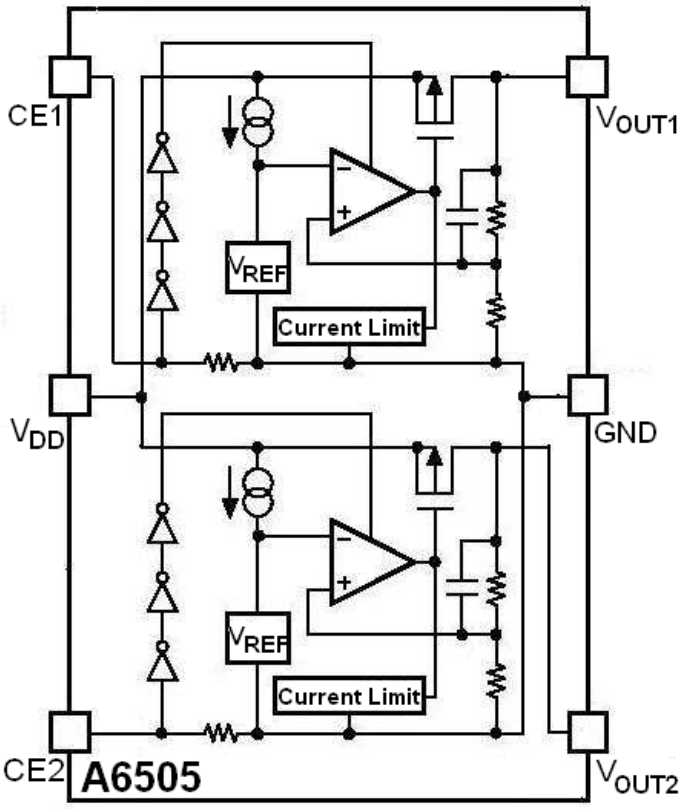
7. Start up from EN



8. Shut down from EN



BLOCK DIAGRAM



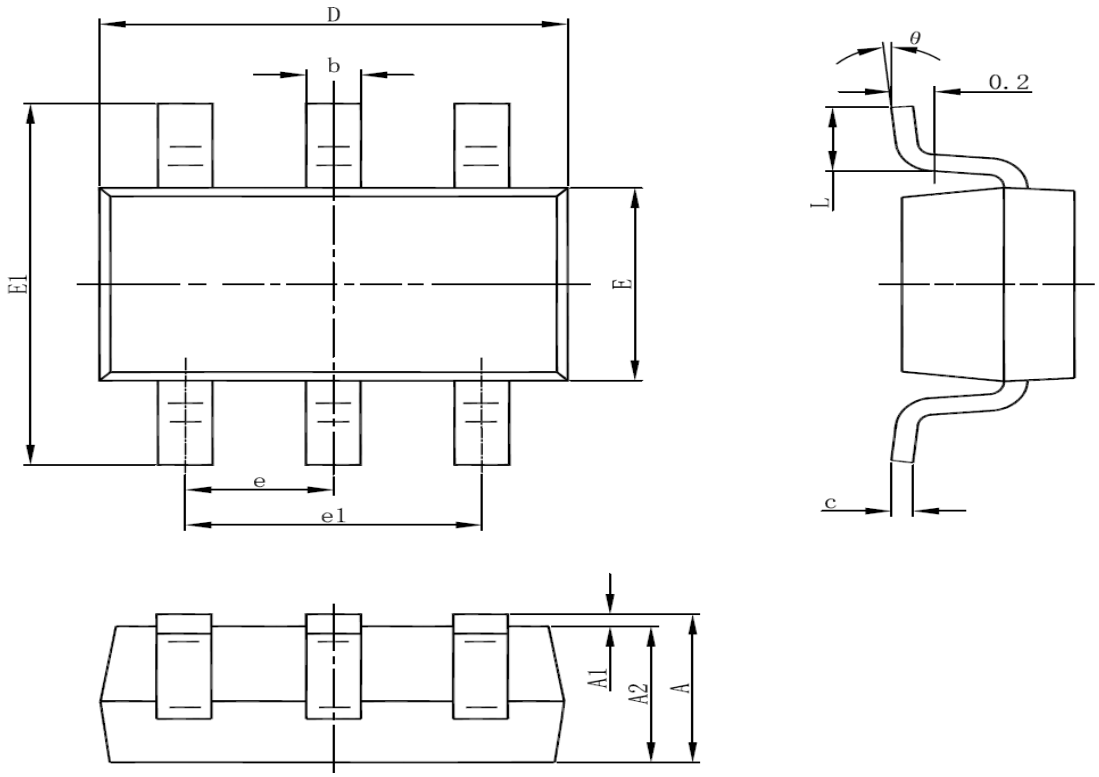
DETAILED INFORMATION

A6505 series are highly accurate, Dual, low noise, CMOS low dropout voltage regulators. The output voltage for each regulator is set independently by trimming. Voltages are selectable in 100mV steps within a range of 1.2V to 4.5V. It also can be customized on command.

A6505 includes high accuracy voltage reference, error amplifier, current limit circuit and output driver module. A6505 has 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%.

PACKAGE INFORMATION

Dimension in SOT-26 Package (Unit: mm)



SYMBOL	MIN	MAX
A	1.050	1.250
A1	0.000	0.100
A2	1.050	1.150
b	0.200	0.500
c	0.100	0.250
D	2.700	3.100
E	1.500	1.800
E1	2.500	3.100
e	0.950(BSC)	
e1	1.700	2.100
L	0.300	0.600
θ	0°	8°

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