



DESCRIPTION

The A7530A Series is a CMOS PFM-control step-up switching regulator that mainly consists of a reference voltage source, an oscillator, and a comparator, enabling products with a low ripple over a wide range, high efficiency, and high output current. With the A7530A Series, a step-up switching regulator can be configured by using an external coil and capacitor. A protection circuit turns off the built-in MOSFET when the voltage at the CONT pin exceeds the limit to prevent it from being damaged. This feature, along with the mini package and low current consumption, makes the A7530A Series ideal for applications such as the power supply unit of portable equipment.

The A7530A is available in SOT-23 and SOT-25 packages.

ORDERING INFORMATION

Package Type	Part Number	
SOT-23 SPQ: 3,000pcs/Reel	E3	A7530AE3R-XXY
		A7530AE3VR-XXY
SOT-25 SPQ: 3,000pcs/Reel	E5	A7530AE5R-XXY
		A7530AE5VR-XXY
Note	XX: Output Voltage 30=3.0V; 33=3.3V	
	Y: Function Type 1. W/O Enable Circuit 2. With Enable Circuit V: Halogen free Package R: Tape & Reel	
AiT provides all RoHS products		

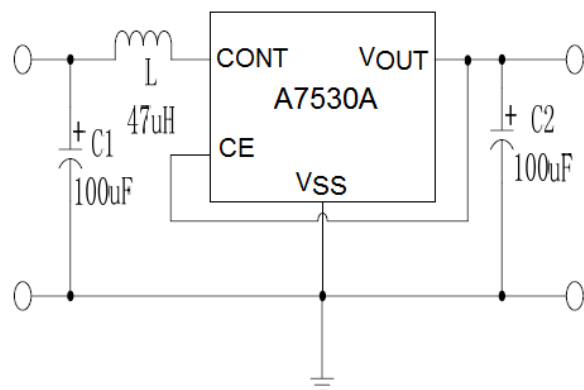
FEATURES

- High efficiency:95%
- Highest switching frequency:300kHz
- Low input current: 15uA
- Output voltage:2.5~5.0V(step 0.1V)
- Accuracy of $\pm 2.5\%$
- Input voltage:0.9V~5.0V
- Low Ripple, Low Noise
- Available in SOT-23 and SOT-25 packages

APPLICATION

- Power supply for portable equipment such as digital cameras, electronic notebooks, and PDA
- Power supply for audio equipment such as portable CD/MD players
- Constant voltage power supply for cameras, video equipment, and communications equipment
- Power supply for microcomputers

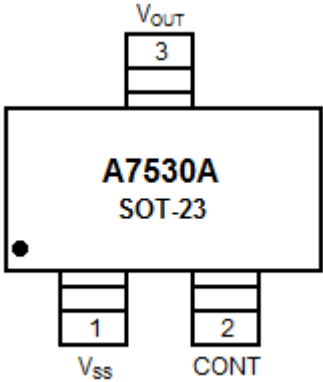
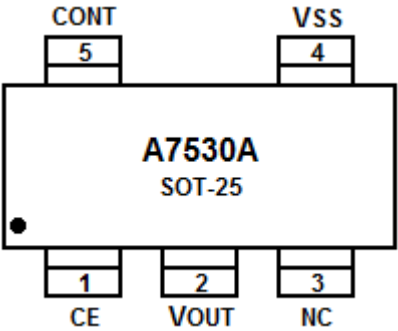
TYPICAL APPLICATION



Basic Application Circuit



PIN DESCRIPTION

 Top View		 Top View	
Pin #		Symbol	Function
SOT-23	SOT-25		
1	4	V _{SS}	Ground
2	5	CONT	External Coil Connection
3	2	V _{OUT}	Output
-	1	CE	Enable
-	3	NC	No Internal Connection



ABSOLUTE MAXIMUM RATINGS

Input Voltage		$V_{SS}-0.3 \sim V_{SS}+6V$
Output Voltages		$V_{SS}-0.3 \sim V_{SS}+6V$
Switching current		1000mA
Power dissipation	SOT-23	150mW
	SOT-25	150mW
Operating Temperature Range		$-40^{\circ}C \sim +85^{\circ}C$
Storage Temperature Range		$-65^{\circ}C \sim +150^{\circ}C$
Lead Temperature (Soldering, 10s)		$+260^{\circ}C$

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.

ELECTRICAL CHARACTERISTICS

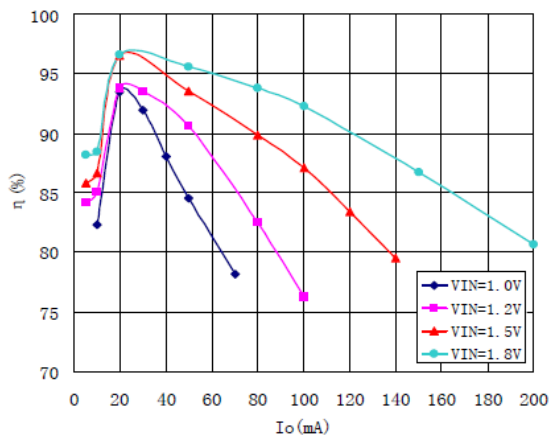
$T_A=25^{\circ}C$, unless otherwise specified

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Output Voltage	ΔV_{OUT}		-2.5	-	2.5	%
Input Voltage	V_{INMAX}		0.9	-	5.0	V
Start Voltage	V_{START}	$I_{LOAD}=1mA, V_{IN}:0 \rightarrow 2V$	-	-	0.8	V
Hold Voltage	V_{HOLD}	$I_{LOAD}=1mA, V_{IN}:2 \rightarrow 0V$	0.6	-	-	V
Duty Ratio	DC_{OSC}		85	-	-	%
Efficiency	η		-	90	94	%
Switching Current	I_{LIMIT}		600	800	1000	mA
Input Current Without Load	I_{INO}	$V_{IN}=1.8V, V_{OUT}=3.0V$	-	15	-	μA

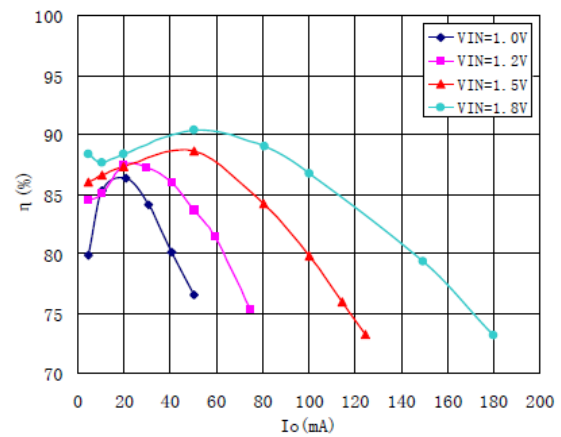


TYPICAL PERFORMANCE CHARACTERISTICS

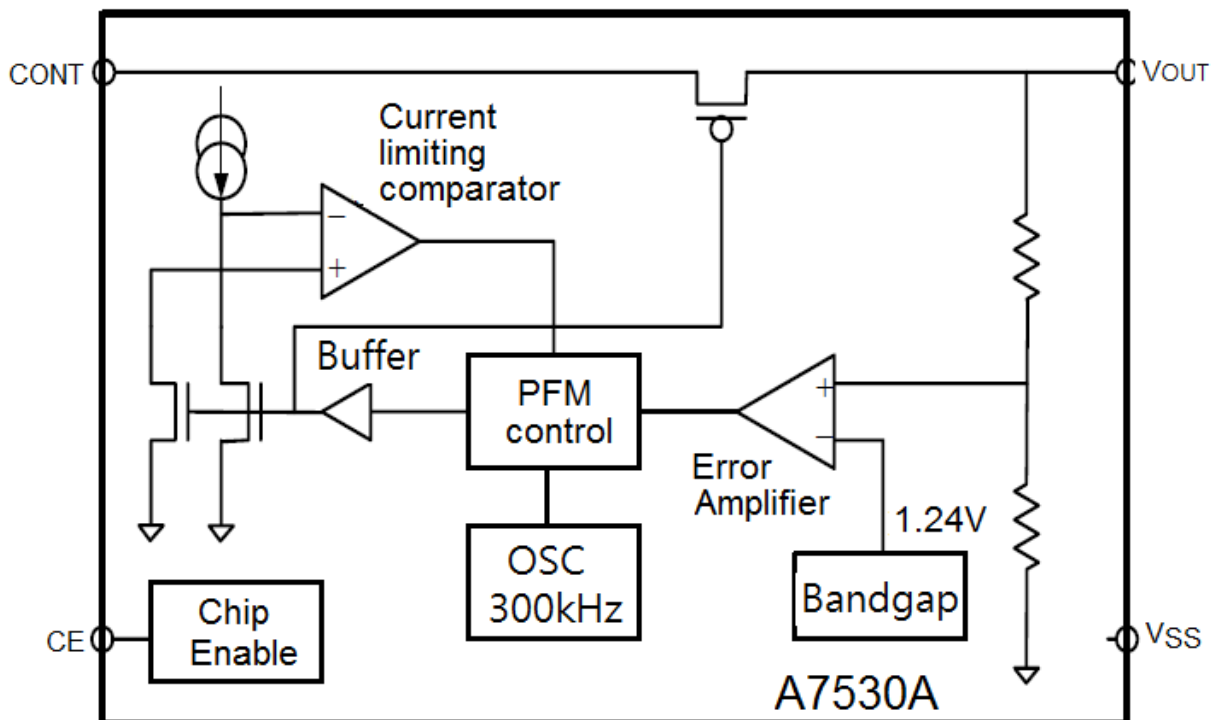
1. η vs. I_o ($V_o=2.8V$)



2. η vs. I_o ($V_o=3.0V$)



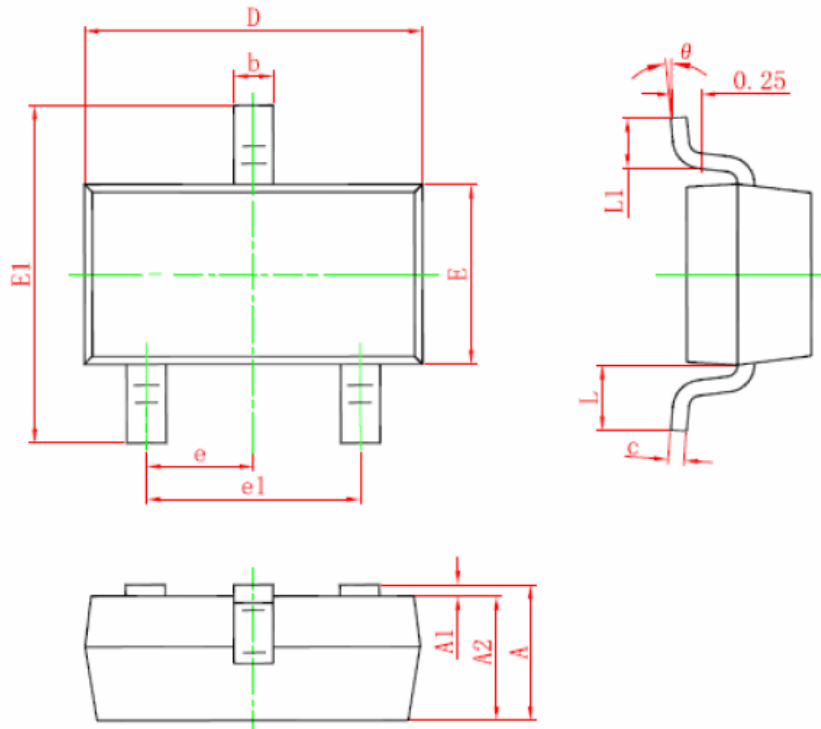
BLOCK DIAGRAM





PACKAGE INFORMATION

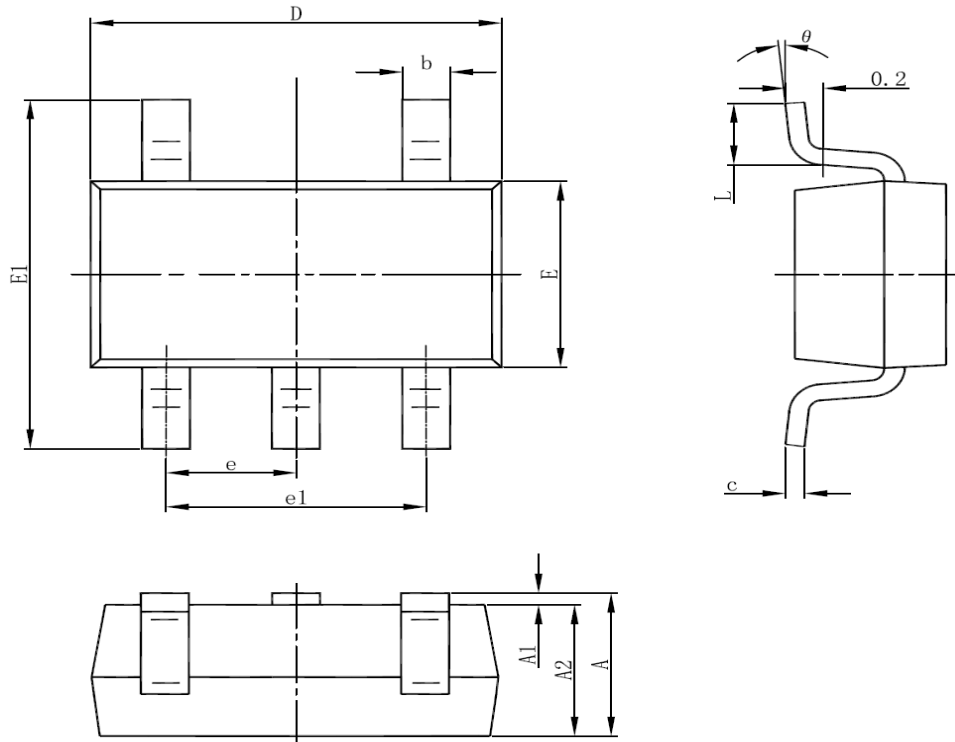
Dimension in SOT-23 Package (Unit: mm)



Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP.		0.037 TYP.	
e1	1.800	2.000	0.071	0.079
L	0.550 REF.		0.022 REF.	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°



Dimension in SOT-25 (Unit: mm)



Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°



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