



## DESCRIPTION

The A7501A series is a high-efficiency, low-ripple, high-frequency PFM-controlled DC-DC boost converter. When the CE pin is connected to GND, the device is disabled and  $V_{OUT}$  is rapidly discharged to 0 V.

The A7501A series requires only three external components and is capable of stepping up a low battery input voltage to a higher output voltage suitable for powering electronic devices.

A7501A is available in SOT-25 packages

## FEATURES

- Maximum efficiency: up to 94%.
- Maximum operating frequency: 300 kHz.
- Low quiescent current: 7  $\mu$ A.
- Output voltage: 1.8 V to 5.0 V (0.1 V step).
- Output voltage accuracy:  $\pm 2.0\%$ .
- Input voltage range: 0.9 V to 6.5 V.
- Low ripples and low noise
- Available in SOT-25 package.

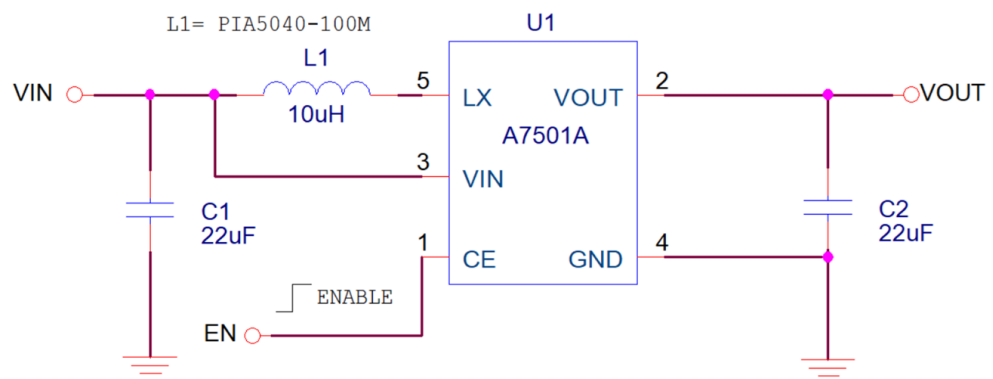
## APPLICATION

- Wireless headsets, wireless mice, and keyboards
- Medical devices and anti-lost alarms
- Car alarms, chargers, VCRs, PDAs, and other handheld electronic devices
- Electronic equipment powered by 1 to 3 batteries
- Electronic dictionaries and digital cameras
- LED flashlights and LED lighting products
- Blood pressure monitors, MP3 players, and remote-control toys

## ORDER INFORMATION

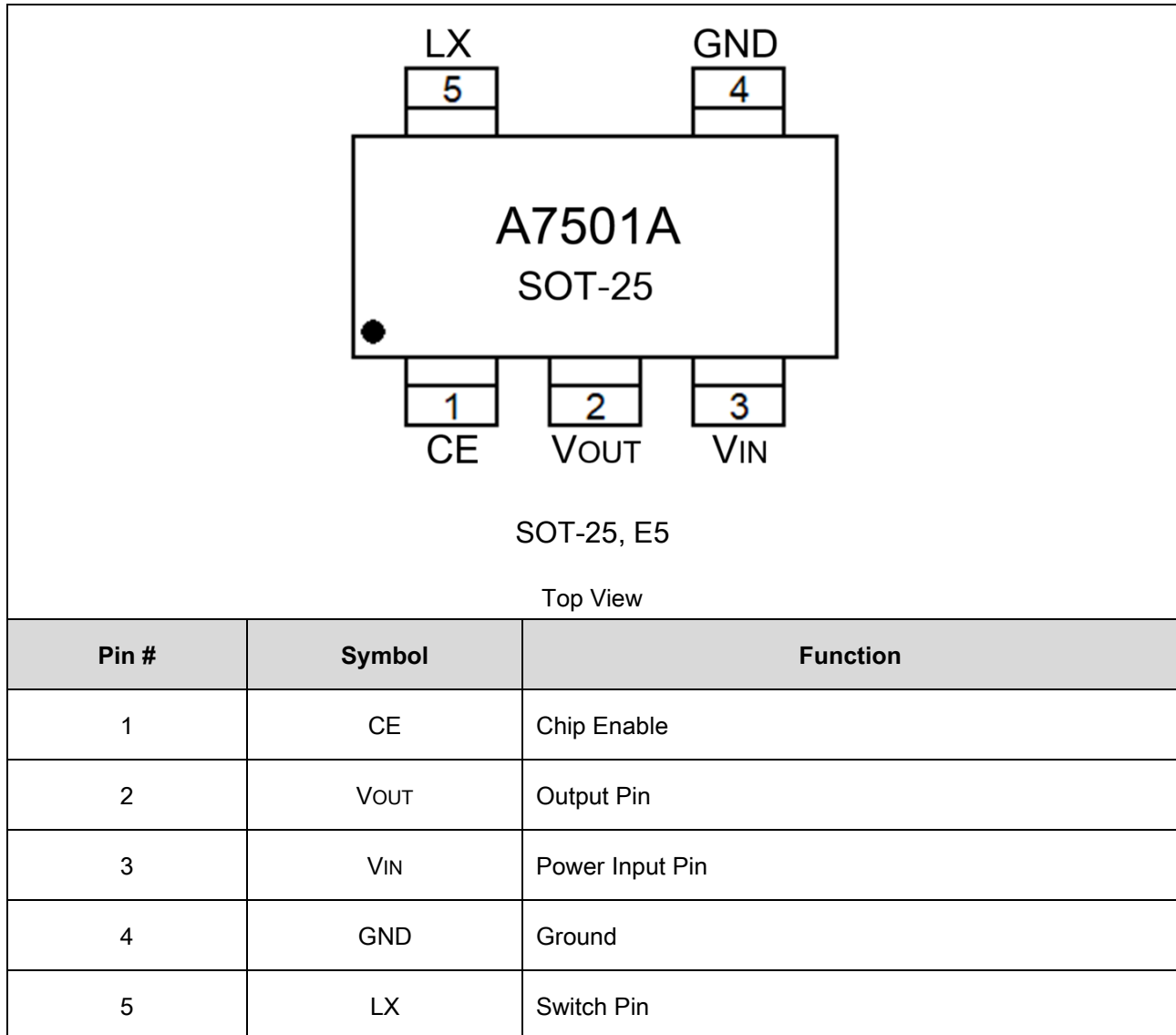
Package Type	Part Number	
SOT-25 SPQ: 3,000pcs/Reel	E5	A7501AE5R-XX
		A7501AE5VR-XX
Note	XX: Output Voltage, 25=2.5V 28=2.8V, 30=3.0V 33=3.3V R: Tape & Reel V: Halogen free Package	
AiT provides all RoHS products		

## TYPICAL APPLICATION





## PIN DESCRIPTION



**ABSOLUTE MAXIMUM RATINGS**

V <sub>IN</sub> , Input Voltage (MAX)		+6.5V
I <sub>LX</sub> , Output Current (MAX)		1000mA
P <sub>D</sub> , Power Dissipation	SOT-25	350mW
T <sub>OPR</sub> , Operating Ambient Temperature		-40°C ~ +85°C
T <sub>STG</sub> , Storage Ambient Temperature		-40°C ~ +165°C
V <sub>ESD</sub> , ESD Body Static pressure Value		4000V

Stress beyond above listed "Absolute Maximum Ratings" may lead to 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.

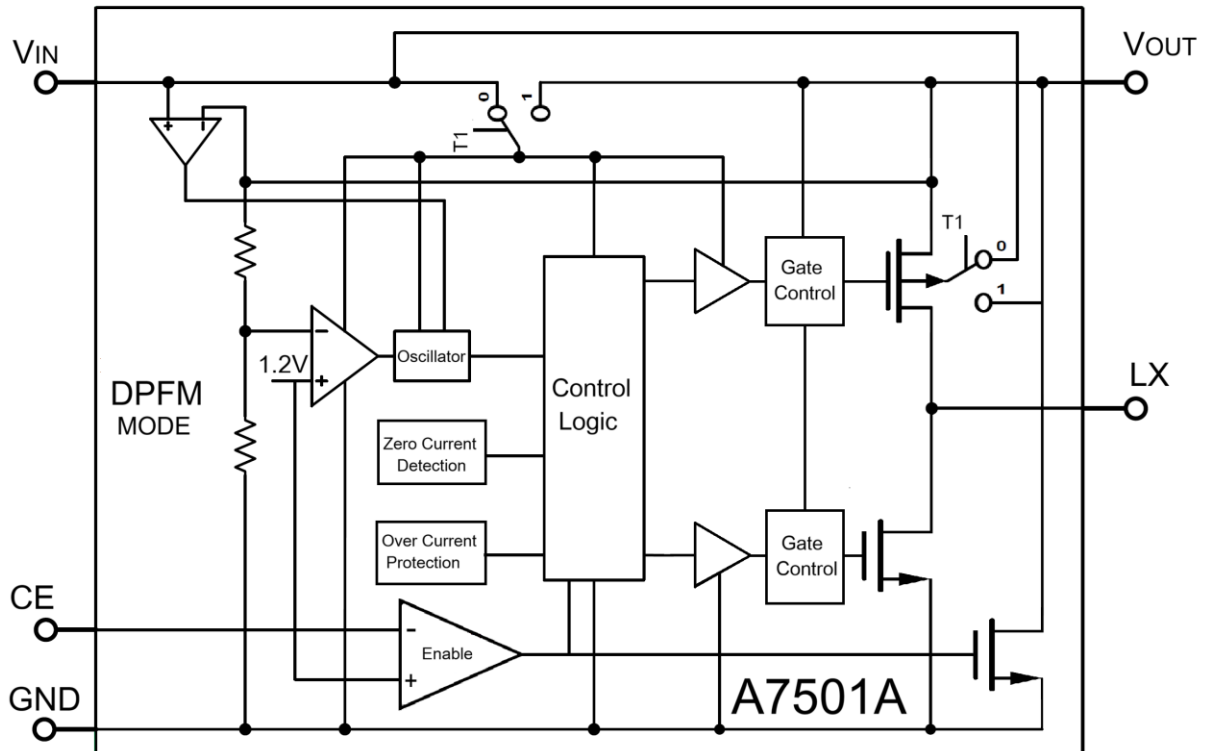
**ELECTRICAL CHARACTERISTICS**

T<sub>A</sub>=25°C, unless otherwise noted

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Output Voltage Accuracy	ΔV <sub>OUT</sub>	-	-2.0	V <sub>OUT(S)</sub>	2.0	%
Maximum Input Voltage	V <sub>IN</sub>	-	0.9	-	6.5	V
Operation Start Voltage	V <sub>START</sub>	I <sub>OUT</sub> =1mA, V <sub>IN</sub> =0V to 2V	-	-	0.8	V
Hold Voltage	V <sub>HOLD</sub>	I <sub>OUT</sub> =1mA, V <sub>IN</sub> =2V to 0V	0.6	-	-	V
Oscillation Signal Duty Cycle	DC <sub>OSC</sub>		-		78	%
Efficiency	η		-	90	94	%
Limit Current	I <sub>LIMIT</sub>		600	800	1000	mA
Input Current (No Load)	I <sub>OUT</sub>		-	7	-	μA
Maximum Oscillation Frequency	f <sub>OSC</sub>		-	-	300	kHz

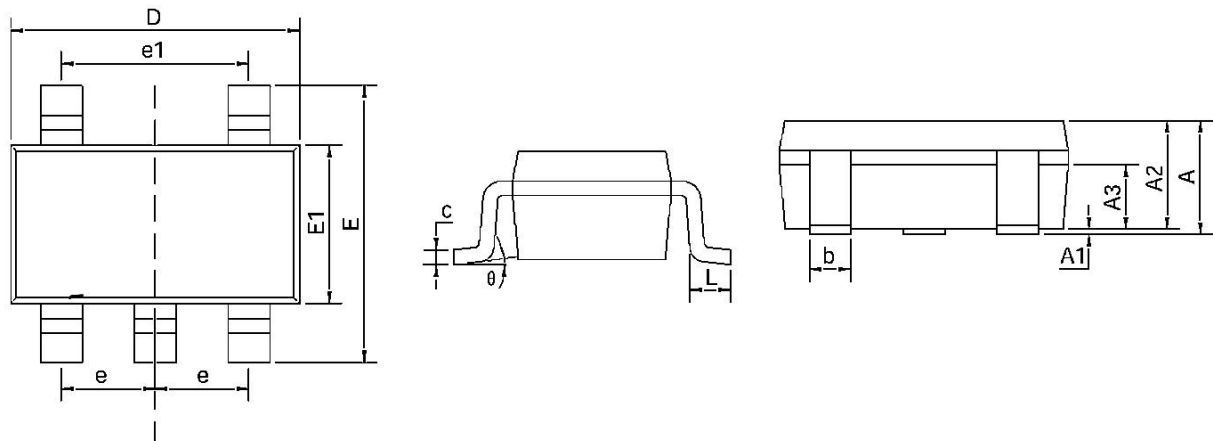


**BLOCK DIAGRAM**



**PACKAGE INFORMATION**

Dimension in SOT-25 Package (Unit: mm/ inch)



Symbol	Millimeters	
	Min	Max
A	1.050	1.350
A1	0.040	0.150
A2	1.000	1.200
A3	0.550	0.750
b	0.380	0.480
c	0.100	0.250
D	2.720	3.120
E	2.600	3.000
E1	1.400	1.800
e	0.950 BSC	
e1	1.900 BSC.	
L	0.300	0.600
θ	0°	8°



## **IMPORTANT NOTICE**

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