



# ACE7166X

## 1.2MHz, High Voltage, Boost Converter

### Description

The ACE7166X is a current mode step up converter intended for small, low power applications. The converter input voltage ranging from 2.6V to 5.5V. The Output voltage can be set up to 27V. The frequency is 1.2MHz allows the use of small external inductors and capacitors and provides fast transient response. Internal soft start results in small inrush current and extends battery life. Internal power MOSFET with very low  $R_{DS(ON)}$  provides high efficiency. The ACE7166X automatically transits from PWM to PFM during light load condition further increasing efficiency. The converter also provides protection functions such as under-voltage lockout, current limit and thermal shutdown. The ACE7166X is available in 5-pin TSOT-23 package.

### Features

- 2.6V to 5.5 V operating input voltage range
- Adjustable output voltage range up to 27V
- 1.2MHz Fixed Switching Frequency
- Internal soft-start function
- Current limit and Thermal shutdown protection
- Under voltage Lockout
- $\leq 1\mu\text{A}$  Shutdown Current
- Available in the 5-pin TSOT-23 Package
- RoHS and Halogen free compliance.

### Application

- Cellphone and Smartphone
- MID or Tablet PC
- TFT-bias for LCD screen
- Power for OLED

### Absolute Maximum Rating (at $T_A=25^\circ\text{C}$ )

Parameter	Symbol	Rating	Unit
VCC Pin Voltage	$V_{CC}$	GND - 0.3 to GND + 6.5	V
EN,FB Pin Voltage		GND - 0.3 to $V_{CC} + 0.3$	V
SW Pin Voltage	$V_{SW}$	30	V
Power Dissipation	PD	$(T_J - T_A) / \theta_{JA}$	mW
Storage Temperature Range	$T_{ST}$	-40 to 150	$^\circ\text{C}$
Operating Junction Temperature Range	$T_{OP}$	-40 to 125	$^\circ\text{C}$
Thermal Resistance from Junction to case	$\theta_{JC}$	110	$^\circ\text{C/W}$
Thermal Resistance from Junction to ambient	$\theta_{JA}$	250	$^\circ\text{C/W}$

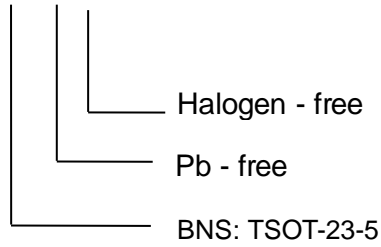


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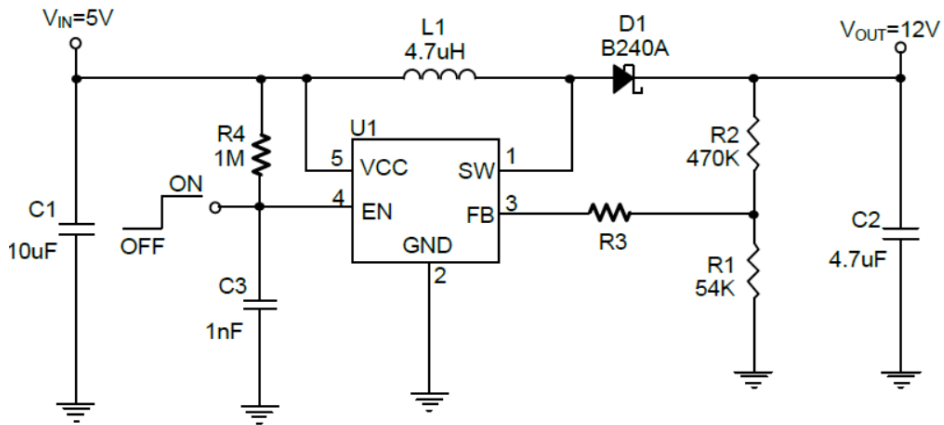
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### Ordering information

ACE7166X XXX + H



### Typical Application



$$V_{OUT} = 1.238V \times \left(1 + \frac{R2}{R1}\right)$$

R2 Suggest 390K~820K

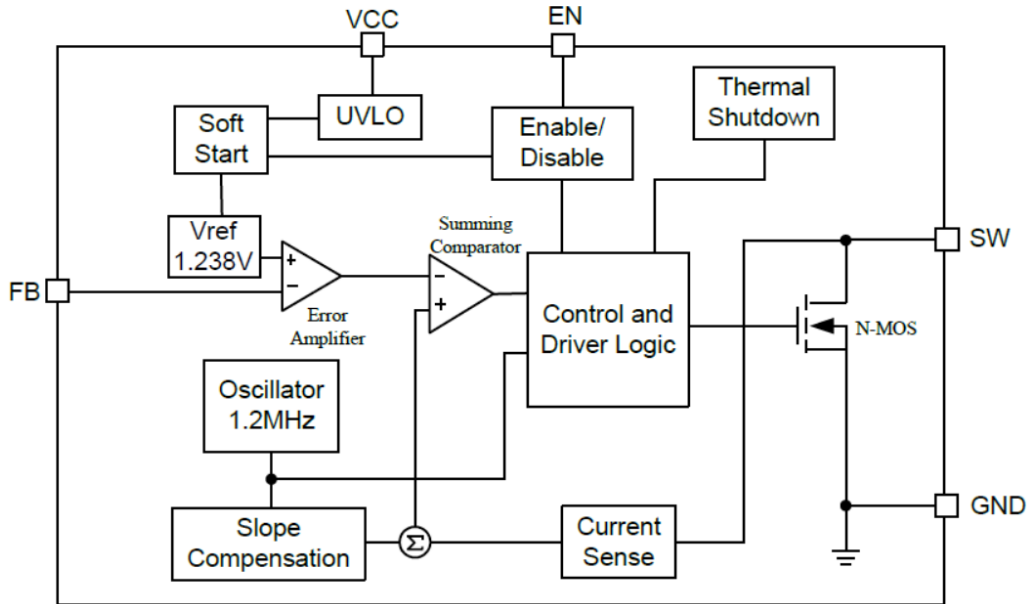
$V_{IN}$	$V_{OUT}$	R3
2.6~3.6V	5V	120K $\Omega$
2.6~5.3V	7V	82K $\Omega$
2.6~5.5V	7.5~27V	0 $\Omega$



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## Block Diagram





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### Notes

ACE does not assume any responsibility for use as critical components in life support devices or systems without the express written approval of the president and general counsel of ACE Technology Co., LTD. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury to the user.
2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.