



# ACE7303R

## 3 A/30 V, Sync DC-DC BUCK Converter

### Description

ACE7303R is a sync BUCK DC-DC converter IC, which integrates two NMOSFET power switches with low on-resistance. And  $R_{DS(ON)}$  of high side and low side switches are 110m $\Omega$  and 45m $\Omega$  respectively. This product is capable of delivering 3A load current. In light load condition, ACE7303R works in the PFM mode which has good efficiency performance. When load current goes heavy, ACE7303R works in a quasi PWM mode. At this time, it has a constant switching frequency of 500kHz. ACE7303R incorporates OTP, input UVLO, cycle by cycle current limit protection and output short circuit protection to improve reliability.

### Features

- Input Voltage Range : 4.7V ~ 30V
- Shutdown Current : 10uA
- Quiescent Current : 120uA
- $R_{DS(ON)}$ (LSD/HSD): 45m $\Omega$ /110m $\Omega$
- Switching Frequency : 500kHz
- Reference Voltage : 0.6V  $\pm$  2%
- Cycle by Cycle Peak Current Limit : 5.5A
- Short Circuit Protection: Hiccup Mode
- Overtemperature Protection : 160°C
- Available in ESOP-8 Package

### Applications

- Set Top Box
- LCD TV
- Digital TV
- DSL Modem



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### Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
VIN Pin Voltage Range	$V_{IN}$	-0.3 ~ 32	V
LX Pin Voltage Range	$V_{LX}$	-0.3 ~ 32	V
Voltage Between BOOT Pin and SW Pin	$V_{BOOT\_SW}$	-0.3 ~ 6	V
EN Pin Voltage Range	$V_{EN}$	-0.3 ~ 32	V
FB Pin Voltage Range	$V_{FB}$	-0.3 ~ 32	V
Internal Power Dissipation	$P_D$	1.98	W
Thermal Resistance (Junction to Air)	$\theta_{JA}$	63	°C/W
Operating Temperature Range	$T_A$	-40 to 85	°C
Storage Temperature Range	$T_{STG}$	-55 to 150	°C
Maximum Junction Temperature	$T_J$	-40 to 160	°C

Note:

- (1). Stresses at or above those listed under Absolute Maximum Ratings may cause permanent damage to the product.
- (2). The maximum allowable power dissipation is a function of the maximum junction temperature  $T_J$  (MAX), the junction-to-ambient thermal resistance  $\theta_{JA}$ , and the ambient temperature  $T_A$ . The maximum allowable continuous power dissipation at any ambient temperature is calculated by  $P_D(MAX)=(T_J(MAX)-T_A)/\theta_{JA}$ .
- (3). The  $\theta_{JA}$  values given in this table are for comparison with other packages only and cannot be used for design purposes. They do not represent the performance achieved in real-world applications.

### Recommended Operating Conditions

Parameter	Symbol	Min	Typ	Max	Unit
Input Voltage	$V_{IN}$	4.7	12	30	V
Output Voltage	$V_{OUT}$	0.6	3.3	12	V
Inductor Value	L	1.2	3.3	10	uH
Output Capacitor	$C_{OUT}$	20	30		uF
Operating Ambient Temperature	$T_A$	-40		85	°C

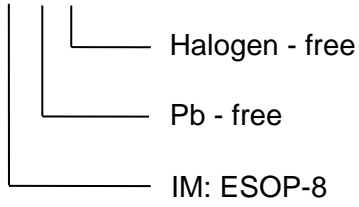


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## Ordering Information

ACE7303R XX + H





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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.

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