



# ACE3V300F

## Under-voltage, Current Sense Comparator IC

### Description

ACE3V300F is an integrated circuit with the functions of under voltage protection and overcurrent protection or current sense, it is formed by reference voltage, an under-voltage comparator, a current sense comparator and a timer. ACE3V300F consumes little current and is easy to use, it is ideally suitable for the applications of overcurrent protection, current sense or battery discharge management.

ACE3V300F enters under-voltage state if the VCC voltage is below under-voltage threshold for 100ms or above, in which OD pin becomes high, and  $\overline{\text{OD}}$  pin becomes low. ACE3V300F will not recover from under-voltage state until VCC becomes higher than under voltage threshold by 0.33V for 100ms or above. Once ACE3V300F recovers from under voltage state, OD pin outputs low and  $\overline{\text{OD}}$  pin outputs high. If the voltage drop between current sense positive terminal CSP and negative terminal CSN is larger than overcurrent threshold (38mV Typ.) for 9ms or above, ACE3V300F enters overcurrent state, in which OD pin outputs high, and  $\overline{\text{OD}}$  pin outputs low.

Both under voltage state and overcurrent state are referred to as over discharge state. ACE3V300F is available in 6 pin SOT-23 package.

### Features

- Low Current Consumption: 4uA
- Internally Fixed Under-voltage Threshold
- Valid Output with VCC down to 1.1V
- Under-voltage Threshold: 2.75V (VCC falls)
- Under-voltage Threshold Accuracy:  $\pm 1\%$
- Deglitch Time of Under Voltage Detection: 100ms
- Overcurrent Threshold: 38mV
- Input Common Mode Voltage of overcurrent detection: 0V to VCC
- Deglitch Time of Overcurrent Detection: 9ms
- Active-high and Active-low Outputs
- Available in SOT-23-6 Package
- Operating Temperature Range -40°C to 85°C
- Lead-free, RoHS-compliant and Halogen-free

### Application

- Over-current Protection
- Current Sense Comparator
- Battery Discharge Management for 3-cell NIMH batteries
- Battery Discharge Management For single-cell Lithium Battery



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### Absolute Maximum Ratings

Parameter		Value
Terminal Voltage (With respect to GND)	VCC	-0.3V to 6.5V
	Other Inputs	-0.3V to VCC
Terminal Current	VCC	20mA
	All I/O Pins	20mA
Thermal Resistance		220°C/W
Operating Temperature		-40 to 85°C
Maximum Junction Temperature		150°C
Storage Temperature		-65 to 150°C
Lead Temperature (soldering, 10s)		260°C

Stresses beyond those listed under “Absolute Maximum Ratings” 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 operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

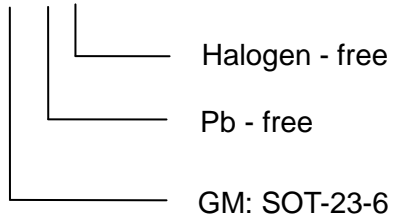


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## Ordering Information

ACE3V300F 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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