



# ACE3823/3824/3825

## Voltage Supervisory Circuits with Watchdog Timer and Manual Reset Input

### Description

The ACE3823/3824/3825 series are cost effective system power supply supervisory circuits designed to monitor the power supplies in digital systems. This family provides circuit initialization and timing supervision. Independent watchdog monitoring circuitry and manual reset input are included. They significantly improve system reliability and accuracy compared to separate ICs or discrete components. The ACE3823/3824/3825 are specifically designed to ignore fast transients on VCC. Seven preprogrammed reset threshold voltages are available. All three devices have an active-low reset output, which is guaranteed to be in the correct state for VCC down to 1V. The ACE3823 also offers a watchdog input and manual reset input. The ACE3824 offers a watchdog input and a complementary active-high reset. The ACE3825 offers a manual reset input and a complementary active-high reset.

### Features

- Wide Operation Voltage Range of 1V to 7V
- Correct Logic Output Guaranteed to  $V_{CC}=1.0V$
- Precision Supply-Voltage Monitor:
  - 2.19V, 2.63V, 2.93V, 3.08V, 4.38V, 4.63V
- 200ms Reset Pulse Width
- Independent Watchdog Timer-1.6s Timeout
- Operating Current: 4 $\mu$ A for L/M
- 3 $\mu$ A for T/S/R/Z/Y
- Temperature Range: -40°C to +85°C
- Power-Supply Transient Immunity
- SOT23-5 and SOT353 packages

### Application

- Applications Using DSPs, Microcontrollers or Microprocessors
- Programmable Controls
- Computers
- Embedded Systems
- Industrial Equipments
- Intelligent Instruments
- Wireless Communications Systems



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### Absolute Maximum Ratings (Note1)

Symbol	Parameter	Value	Unit	
V <sub>CC</sub>	Supply Voltage	-0.3 to 8.0	V	
	RESET, $\overline{\text{RESET}}$ , $\overline{\text{MR}}$ , WDI	-0.3 to (V <sub>CC</sub> +0.3)		
I <sub>CC</sub>	Input Current, V <sub>CC</sub> , $\overline{\text{MR}}$ , WDI	20	mA	
I <sub>O</sub>	Output Current, RESET, $\overline{\text{RESET}}$	20	mA	
P <sub>D</sub>	Continuous Power Dissipation	SOT23-5	300	mW
		SOT-353	247	
T <sub>A</sub>	Operating Temperature Range	-40 to 85	°C	
T <sub>STG</sub>	Storage Temperature Range	-65 to 150	°C	
	Lead Temperature (Soldering, 10s)	300	°C	

Note 1: 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 are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

### ESD Ratings

Symbol	ESD Mode	Value	Unit
HBM	Human Body Mode	±2000	V
CDM	Charged Device Mode	±500	

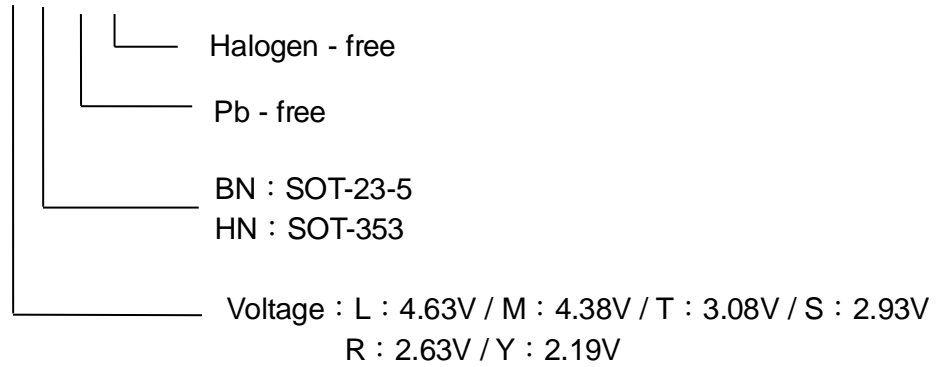


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### Ordering information

ACE3823/3824/3825 X 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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