



ACE31A57Y

Micro-Power CMOS Input RRIO 1.8 V Open-Drain Output Comparator

Description

The ACE31A57Y is a low-power comparator with a typical power supply current of 37 μ A. It has the best-in-class power supply current versus propagation delay performance. The propagation delay is as low as 84 ns with 100 mV overdrive at 1.8 V supply.

Designed to operate over a wide range of supply voltages, from 1.8 V to 5.5 V, with guaranteed operation at 1.8 V, 2.5 V and 5.0 V, the ACE31A57Y is ideal for use in a variety of battery-powered applications. With rail-to-rail common mode voltage range, the ACE31A57Y is well suited for single-supply operation. Featuring an open drain output stage, the ACE31A57Y allows for operation with absolute minimum power consumption when driving any capacitive or resistive load.

The ACE31A57Y is available in the Green SOT23-5 and SC70-5 packages. The ACE31A57Y is ideal for use in handheld electronics and mobile phone applications. It is rated over the -40°C to 125°C temperature range.

Features

- Low power consumption:
- 37 μ A (TYP) at $V_+ = 1.8$ V
- Wide supply voltage range: 1.8 V to 5.5 V
- Propagation delay: 84 ns (TYP) at $V_+ = 1.8$ V
- Open drain output sink current drive:
- 33.5 mA (TYP) at $V_+ = 5$ V
- Rail-to-rail input
- -40°C to 125°C operating temperature range

Application

- RC timers
- Window detectors
- IR receiver
- Multivibrators
- Alarm and monitoring circuits



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Absolute Maximum Ratings

Stresses beyond those listed under Absolute Maximum Rating may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other condition 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.

Symbol	Parameter	Rating	Unit
V_{CC}	Supply voltage ($V+$ – $V-$)	7.5	V
	Input voltage	$(V-) - 0.5$ to $(V+) + 0.5$	V
	Differential input voltage	± 2.5	V
T_A	Operating temperature range	-40 to 125	°C
T_{STO}	Storage temperature range	-55 to 150	°C
T_J	Junction temperature	160	°C
T_L	Lead temperature range	260	°C
ESD	HBM, JEDEC: JESD22-A114	4000	V
	CDM, JEDEC: JESD22-C101	400	

Recommended Operating Conditions

The Recommended Operating Conditions table defines the conditions for actual device operation to ensure optimal performance to the datasheet specifications.

Symbol	Parameter	Rating	Unit
V_{CC}	Supply voltage	1.8 to 5.5	V
T_O	Operating temperature range	-40 to 125	°C

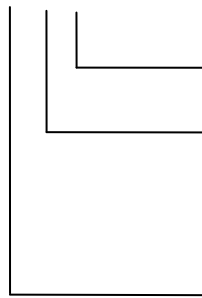


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Ordering Information

ACE31A57Y XX + H



Halogen - free

Pb - free

BNA: SOT-23-5A

BNB: SOT-23-5B

HNA: SC-70-5A (SOT-353A)

HNB: SC-70-5B (SOT-353B)



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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 sued 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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