



# ACE5375U

## 300mA, Micropower, VLDO Linear Regulator

### Description

The ACE5375U series are VLDO (very low dropout) linear regulators designed for low power portable applications. Typical output noise is only  $170\mu\text{V}_{\text{RMS}}$  and maximum dropout is just 200mV at the load current of 100mA. The internal P-channel MOSFET pass transistor requires no base current, allowing the device to draw only 90 $\mu\text{A}$  during normal operation at the maximum load current of 300mA.

Other features include high output voltage accuracy, under voltage lockout, stability with ultra-low ESR ceramic capacitors as small as 1 $\mu\text{F}$ , thermal overload protection and output current limiting. The ACE5375U series are available in a low profile SOT23-5 and SOT-353 package.

### Features

- Input Voltage Range: 2.0V to 6.0V
- Very Low Dropout: 200mV (Max) at 100mA
- Low Noise:  $170\mu\text{V}_{\text{RMS}}$
- $\pm 2\%$  Voltage Accuracy at 150mA
- Fixed Output Voltage:
- 1.2V to 5.0V with 100mV Interval
- Output Current Limit
- Stable with 1 $\mu\text{F}$  Output Capacitor
- Thermal Overload Protection
- Low Profile SOT23-5 and SOT-353 Packages

### Application

- Bluetooth/802.11 Cards
- PDAs and Notebook Computers
- Portable Instruments and Battery-Powered Systems
- Cellular Phones



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### Absolute Maximum Ratings (NOTE1)

Symbol	Parameter	Value	Unit	
V <sub>IN</sub>	Supply Voltage on IN Pin	-0.3 to 7.5	V	
V <sub>OUT</sub>	Voltage on OUT Pin	-0.3 to 7.5	V	
T <sub>J</sub>	Operating Junction Temperature (Note 2, 3)	-40 to 125	°C	
T <sub>STG</sub>	Storage Temperature Range	-65 to 150	°C	
T <sub>L</sub>	Lead Temperature for Soldering 10 Seconds	300	°C	
PD (Note 4)	Power Dissipation @ 25°C	SOT23-5	0.6	W
		SOT-353	0.55	

Note 1: Absolute Maximum Ratings are those values beyond which the life of a device may be impaired.

Note 2: The ACE5375U is tested and specified under pulse load conditions such that  $T_J \approx T_A$ . The device is guaranteed to meet performance specifications from 0°C to 70°C. Specifications over the -40°C to 125°C operating junction temperature range are assured by design, characterization, and correlation with statistical process controls.

Note 3: This IC includes overtemperature protection that is intended to protect the device during momentary overload conditions. Junction temperature will exceed 125°C when overtemperature protection is active. Continuous operation above the specified maximum operating junction temperature may impair device reliability.

Note 4: The maximum allowable power dissipation of any  $T_A$  (ambient temperature) is  $P_{DMAX} = (T_{JMAX} - T_A) / \theta_{JA}$ . Exceeding the maximum allowable power dissipation will result in excessive die temperature and the regulator will go into thermal shutdown.

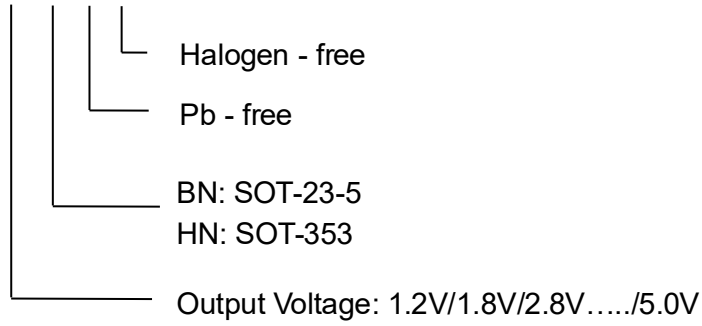


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## Ordering information

ACE5375UXX 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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