



ACE575U

350mA, Micropower, Very Low Dropout Linear Regulator

Description

The ACE575U series are very low dropout linear regulators designed for low power portable applications. Typical output noise is only 195 μ V_{RMS} and maximum dropout is just 110mV(Typ) at the load current of 150mA. The internal P-channel MOSFET pass transistor requires no base current, allowing the device to draw only 190 μ A during normal operation at the maximum load current of 350mA. With a shutdown control pin, the ACE575U consumes less than 1 μ A current in shutdown mode.

Other features include high output voltage accuracy, excellent transient response, under voltage lockout, stability with ultralow ESR ceramic capacitors as small as 1 μ F, short-circuit and thermal overload protection and output current limiting.

The ACE575U series are available in low profile SOT23-5 and DFN2*2-6L packages.

Features

- Very Low Dropout: 150mV (Max) at 150mA
- Maximum Input Voltage: 6.0V
- $\pm 2\%$ Voltage Accuracy at $V_{OUT} > 1.5V$
- $\pm 30mV$ Voltage Accuracy at $V_{OUT} \leq 1.5V$
- Fast Transient Response
- Under Voltage Lockout
- Adjustable Output Voltage of ACE575U from 1.0V to 5.0V
- Output Current Limit
- Stable with 1 μ F Output Capacitor
- Short-Circuit and Thermal Overload Protection
- Low Profile SOT23-5 and DFN2*2-6L 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 ^(Note 1)

Symbol	Parameter	Value	Units
V_{IN}	Supply Voltage on IN Pin	-0.3 to 7.5	V
$V_{\overline{SHDN}}$	Voltage on \overline{SHDN} Pin	-0.3 to 7.5	V
V_{FB}	Voltage on FB Pin	-0.3 to 7.5	V
V_{OUT}	Voltage on OUT Pin	-0.3 to 7.5	V
	Output Short-Circuit Duration	Indefinite	
θ_{JA}	Junction Thermal Resistance ^(Note 2)	SOT23-5	215
		DFN2*2-6L	110
T_J	Operating Junction Temperature ^(Note 3, 4)	-40 to 125	°C
T_{STG}	Storage Temperature Range	-65 to 150	°C
T_L	Lead Temperature for Soldering 10 Seconds	+00	°C

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

Note 2: The maximum allowable power dissipation of any T_A (ambient temperature) is $P_{D(max)} = (T_{J(max)} - T_A) / \theta_{JA}$. Exceeding the maximum allowable power dissipation will result in excessive die temperature, and the regulator will go into thermal shutdown.

Note 3: The ACE575U is tested and specified under pulse load conditions such that $T_J \approx T_A$. Specifications over the -40°C to 125°C operating junction temperature range are assured by design, characterization and correlation with statistical process controls.

Note 4: 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.

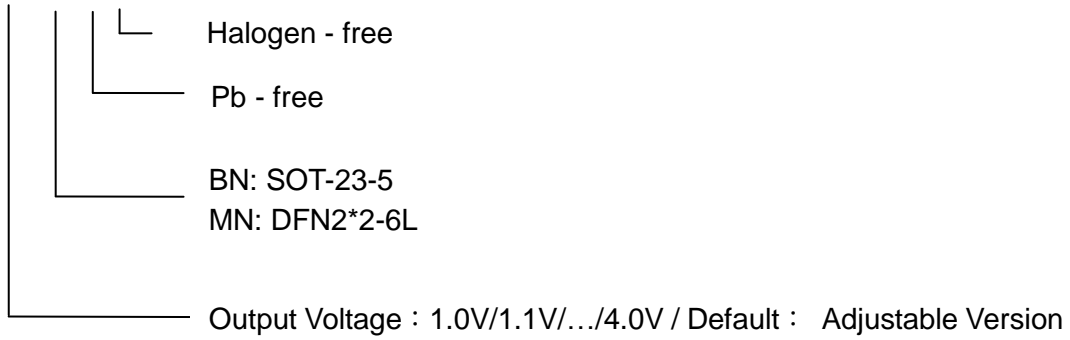


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Ordering information

ACE575UXX 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 Electronics 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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