ACE527H

Low Noise, High PSRR LDORegulator

Description

The ACE527H is a high performance LDO regulator specifically designed to deliver fixed/adjustable output voltage with high PSRR and fast transient response. Internal 700mW PMOS pass transistor yields typical 420mV dropout voltage at 600mA output current.

Typical quiescent current is only 65uA. A logic low on the enable input, CE, shuts down the output and reduces the supply current to less than 1uA. The ACE527H works stably with as low as 1uF ceramic output capacitor, minimizing board space requirement.

Other features include adjustable soft start, high output accuracy, output current limiting, and thermal protection. The ACE527H is available in the TSOT23-5, TSOT23-6, or WDFN1.6x1.6-6L packages.

Features

- Wide Input Voltage Range, 2.2V to 6.0V
- Fixed or Adjustable Output Voltage
- High Output Voltage Accuracy, +/-1%
- Fast Transient Response
- Typical 420mV Dropout Voltage at 600mA Output Current
- Small Output Capacitor, 1uF
- Typical 65uA Quiescent Current
- Less Than 1uA Shutdown Current
- Dedicated Chip Enable Pin
- Fixed or Adjustable Soft Start
- Over Current Limitation
- Thermal Protection
- TSOT23-5, TSOT23-6, WDFN1.6x1.6-6L Packages
- RoHS Compliant and Halogen Free

Application

- Battery-Powered Equipment’s
- Hand-Held Electrical Appliances
- Portable Communication Equipment’s

Absolute Maximum Ratings (Note 1)

Parameter		Value
Input Supply Voltage (V_{IN})		-0.3V to 6.5V
Voltage at EN		-0.3V to 6.5V
Others		-0.3V to (V_{IN} + 0.3V)
ESD (Note 2)	Human Body Mode	2kV
	Machine Mode	200V

Thermal Information

Parameter		Value
Continuous Junction Temperature Range		-40℃to150℃
Storage Temperature Range		-65℃to150℃
Lead Temperature (Soldering, 10 second)		260℃
Package Thermal Resistance (Note 3)	TSOT23-5, θ_{JA}	250℃/W
	TSOT23-5, θ_{JC}	25℃/W
	TSOT23-6, θ_{JA}	250℃/W
	TSOT23-6, θ_{JC}	25℃/W
	WDFN1.6*1.6-6L, θ_{JA}	150℃/W
	WDFN1.6*1.6-6L, θ_{JC}	30℃/W
Maximum Power Dissipation, PD @ T_A = 25℃ (Note 4)	TSOT23-5	0.4W
	TSOT23-6	0.4W
	WDFN1.6*1.6-6L	0.67W

Recommended Operation Condition

Parameter	Value
Continuous Junction Temperature Range	-40℃to 125℃
Ambient Temperature Range	-40℃to 85℃
Input Voltage Range	2.2V to 6.0V

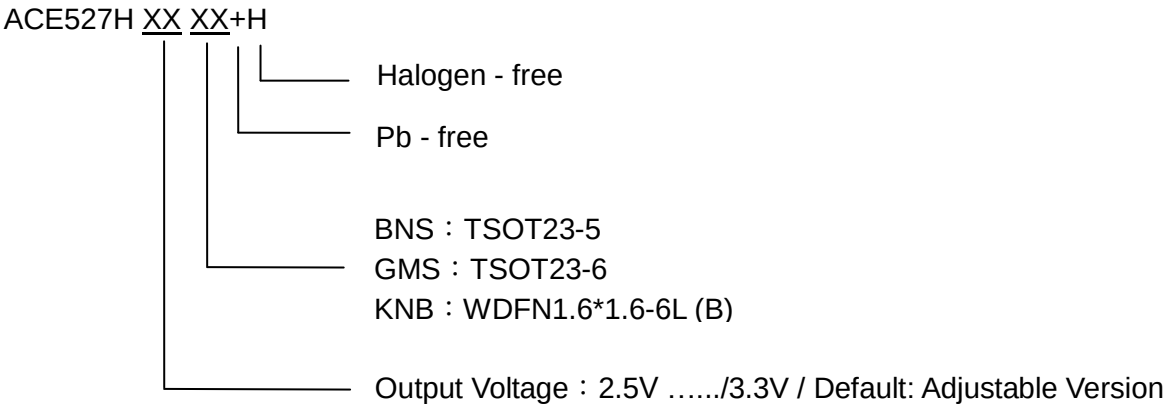
Note 1: Stresses beyond those listed under Absolute Maximum Ratings may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability and lifetime.

Note 2: This device is sensitive to electrostatic discharge. Follow proper handling procedures.

Note 3: The Thermal Resistance specifications are based on a JEDEC standard JESD51-3 single-layer PCB. θ_{JA} will vary with board size and copper area.

Note 4: The maximum allowable power dissipation is a function of the maximum junction temperature, TJ-MAX, the junction-to-ambient thermal resistance, $\theta_{JA,}$ and the ambient temperature, TA. The maximum allowable power dissipation at any ambient temperature is calculated using: $P_{D(MAX)} = (T_{D(MAX)}-T_A)/\theta_{JA}$. The maximum power dissipation is determined using T_A = 25℃, and $T_{J(MAX)}$ = 125℃.

Ordering information



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 shoes 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.