ACE56513P

40V, Low Quiescent Current, High Reliability LDO

Description

The ACE56513P series is a high accuracy, high input voltage low quiescent current, high speed, and low dropout liner regulator with high ripple rejection.

The input voltage is up to 40V and load current is up to 300mA at V_{OUT} = 5V & V_{IN} = 7V. The device is manufactured with BCD process. The ACE56513P offers over-current limit, soft start and over temperature protection to ensure the device working in well conditions.

Features

- Input voltage: 4.75V~40V
- Output voltage: 1.8V~5.7V
- Output accuracy: < ±2%
- Output current: 150mA (Typ.)
- PSRR: 60dB @ 100Hz
- Dropout voltage: 600mV @ I_{OUT} = 100mA
- Quiescent current: 4.2μA @ V_{IN} = 12V(Typ.)
- ESD HBM: 8KV
- Recommend capacitor: 10μF

Application

- Smart electric meter
- In-car entertainment
- Electric bicycle

Absolute Maximum Ratings (Note)

Symbol	Items	Value	Unit
V_{IN}	Input Voltage	-0.3~42	V
V_{OUT}	Output Voltage	-0.3~6.5	V
P_{DMAX}	Power Dissipation	OTP limited	W
T_J	Junction Temperature	-40~150	℃
Tstg	Storage Temperature	-55 to 150	℃
Tsolder	Package Lead Soldering Temperature (10s)	260	℃
ESD MM	Machine Mode	200	V
ESD HBM	Human Body Mode	8000	V

Note: Exceed these limits to damage to the device. Exposure to absolute maximum rating conditions may affect device reliability.

Recommended Operating Range

Symbol	Items	Value	Unit
V_{IN}	VIN Supply Voltage	4.75 to 40	V
$R_{\theta JA}$	Thermal Resistance on PCB	45	℃/W
T_{OPT}	Operating Temperature	-40 to 105	℃

Ordering information

ACE56513PXX XX + H

- Halogen - free
- Pb - free
- AMA: SOT-89-3A
  AMB: SOT-89-3B
- Output Voltage：1.8V/3.3V/…… /5.7V

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.