



ACE51902X

Ultra Low Quiescent Current Linear Regulator

Description

The ACE51902X is a 200V linear regulator with quiescent current as low as 7 μ A. With output voltage being fixed, and no need of high voltage input capacitor, it only takes two 25V-rating low-voltage capacitors to have ACE51902X work properly under an input voltage as high as 200V. For ACE51902X with output voltage 3.3V and 5.0V, it can delivery 20mA output current and for ACE51902X with 12.0V output voltage, 10mA output current is guaranteed. ACE51902X employes internal high-voltage regulator, precise voltage reference, soft start, error amplifier, power transistor modules, short-circuit protection, over-temperature protection and a proprietary loop design to achieve a fast transient response.

Features

- High input voltage: 200V
- 7 μ A quiescent current
- Extremely low line regulation
- 2% accuracy of output voltage
- Fixed output voltage at 3.3V, 5V, 12V
- 20mA output current for 3.3 and 5V and 10mA for 12V output voltage
- No need of high voltage input capacitor
- Package: ESOP-8

Application

- Multi-cell battery management system
- Tracker for E-bike and Automobile
- E-bike
- Other application with high voltage input or very high input voltage surge



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Absolute Maximum Ratings ^(Note 1)

Parameter	Value	
HVIN ⁽¹⁾	-0.3V to 250V	
BYPASS, VOUT ⁽¹⁾	-0.3V to 20V	
Continuous Power Dissipation (TA = 25°C) ⁽²⁾	1W	
Junction Temperature	-40°C to 125°C	
Lead Temperature	260°C	
Storage Temperature	-65°C to 150°C	
Thermal Resistance ⁽³⁾	θ_{JA}	50°C/W
	θ_{JC}	10°C/W

Note:

- 1). Exceeding these ratings may damage the device.
- 2). The maximum allowable power dissipation is a function of the maximum junction temperature $T_{J(MAX)}$, the junction-to-ambient thermal resistance θ_{JA} , and the ambient temperature T_A . The maximum allowable continuous power dissipation at any ambient temperature is calculated by $PD(MAX)=(T_{J(MAX)}-T_A)/\theta_{JA}$. Exceeding the maximum allowable power dissipation will cause excessive die temperature, and the regulator will go into thermal shutdown. Internal thermal shutdown circuitry protects the device from permanent damage.
- 3). Measured on JESD51-7, 4-layer PCB.

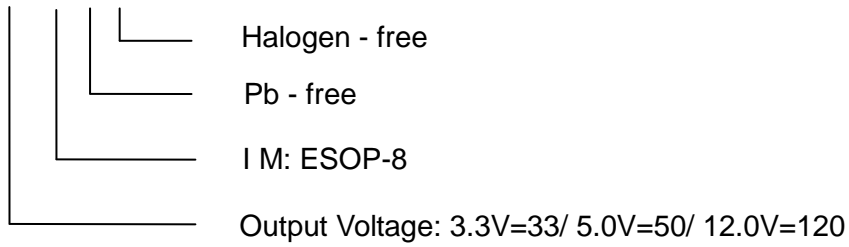


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Ordering Information

ACE51902X XX 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 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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