



ACE51150X

16V 300mA Fast Response LDO with only 3uA Iq

Description

ACE51150X series is a group of positive voltage output 3-terminal linear regulator, capable of delivering 300mA current and working under 16V input voltage. It also features extremely low standby current which is only 3uA, while keeps very fast load transient response capability. With the extremely low 3uA standby current, ACE51150X can greatly improve natural life of batteries. Besides, it also provides fold back short-circuit protection (SCP), over-temperature protection (OTP) and output current limit function.

ACE51150X includes high accuracy voltage reference, error amplifier, and current limit circuit and output driver module. ACE51150X has well load transient response and good temperature characteristic, and it uses trimming technique to guarantee output voltage accuracy within $\pm 2\%$. ACE51150X can provide output value in the range of 1.1V~5.0V in 0.1V steps. It also can be customized on command.

ACE51150X is housed in 3 different types of packages, which are SOT23-5, SOT23-3 and SOT89-3.

Features

- Low Power Consumption: 3.0uA (Typ.)
- Maximum Output Current: 300mA
- Small Dropout Voltage
- 200mV@100mA ($V_{OUT}=3.3V$)
- 400mV@200mA ($V_{OUT}=3.3V$)
- Input Voltage Range: 2V~16V
- Output Voltage Range: 1.1V~5.0V (customized on command in 0.1V steps)
- Highly Accurate: $\pm 2\%$ ($\pm 1\%$ customized)
- Output Current Limit 330mA@ $V_{OUT} = 3.3V$
- Fold back Short-circuit Current
- 56mA@ $V_{out}=3.3V$

Application

- Wearables
- Toys
- Smart Home Application
- Battery Powered equipment



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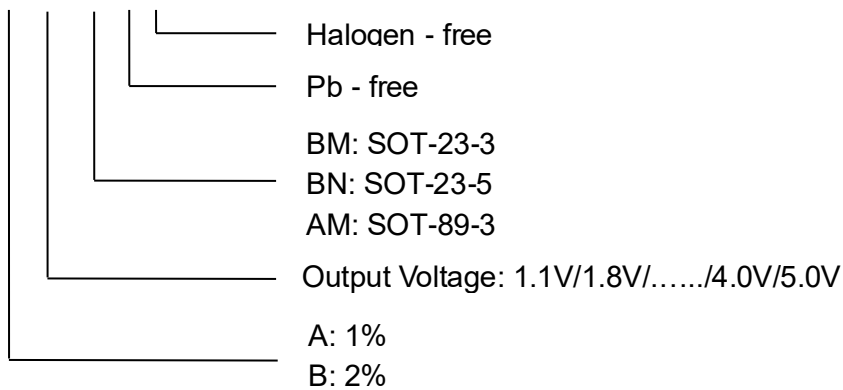
Absolute Maximum Ratings

(Note: Exceeding or exposure to these absolute rating limits may damage the device permanently or affect its reliability)

Parameter		Value	
Max Input Voltage		-0.3~18V	
Operating Junction Temperature (Tj)		125 °C	
Output Current		300mA	
Operating Temperature Range		-40 °C~85 °C	
Storage Temperature Range		-55 °C~150 °C	
ESD Human body mode		2KV	
Thermal Resistance Time	SOT-23-3	θ_{JA}	191 °C /W
		θ_{JC}	85 °C /W
	SOT-23-5	θ_{JA}	165 °C /W
		θ_{JC}	75 °C /W
	SOT-89-3	θ_{JA}	52 °C /W
		θ_{JC}	25 °C /W
Lead Temperature & Time		260 °C, 10 Sec	

Ordering Information

ACE51150X X 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 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.