

HL5095K

Back-to-Back OVP with Adjustable Current Limit

Overview

The HL5095K is a slew-rate controlled, low $R_{ds(on)}$ over voltage protection device. It is used in between a power source and a load to protect and isolate power source against unwanted abnormal voltage and current condition. Especially, in the OTG mode of smartphones, the HL5095K could be placed between OTG boost regulator and USB port. The HL5095K can protect boost regulator from overvoltage or overcurrent USB conditions in smartphones.

In order to be used at high voltage application (9V or above), the HL5095KA/B apply a high-voltage device power FET switch with a maximum input voltage of 13.5V. Its over-voltage protection level is set to 14.2V in HL5095KA version, 10.4V in HL5095KB and 5.8V in HL5095KC.

To prevent excessive input voltage or battery droop resulting from a large inrush current, the HL5095K also implements several protection functions, such as output over-voltage and input under-voltage protection, over-current protection with FLT flag and over-temperature protection. The HL5095K is available in a 9-pin WLCSP package.

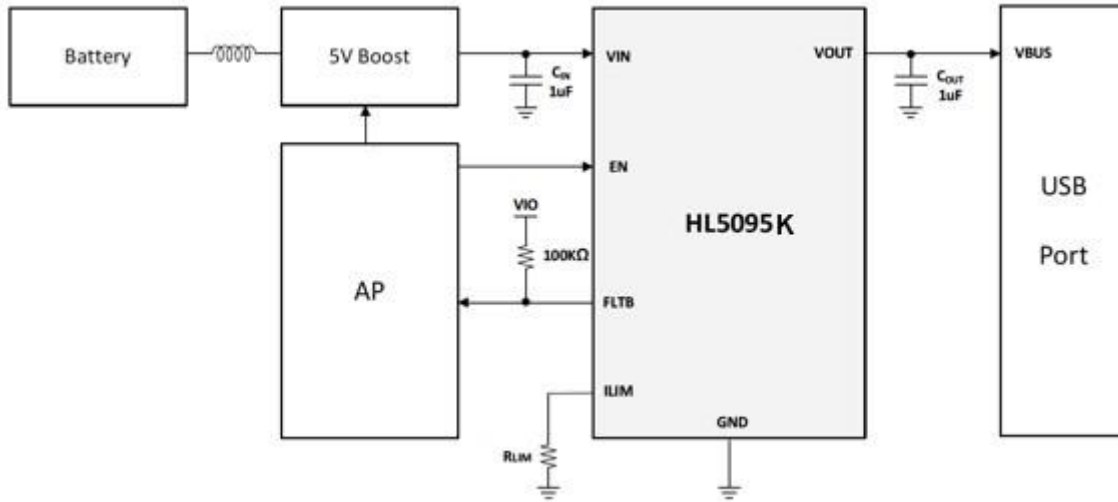
Features

- Input voltage ranges
 - HL5095KA: 2.5-13.5V
 - HL5095KB: 2.5-10V
 - HL5095KC: 2.5-5.5V
- 28V Absolute maximum voltage rating of VOUT
- Adjustable current limit with external resistor
- Integrated power FET switch with 53m Ω $R_{ds(on)}$ @ 5V/1A
- Built-in soft start to prevent in-rush current
- Protections:
 - Over-temperature protection (OTP)
 - Over-voltage protection (OVP)
 - HL5095KA: 14.2V
 - HL5095KB: 10.4V
 - HL5095KC: 5.8V
 - Over current protection
 - Reverse current protection
- Compliance to ICE61000-4-2 on VOUT
 - Contact discharge: $\pm 8kV$
 - Air gap discharge: $\pm 15kV$
- Package:
 - HL5095KA, HL5095KB, HL5095KC: 9-bump WLCSP, 0.4mm pitch, 1.23mm x 1.23mm

Applications

- Smartphones
- Notebooks
- Tablet PCs
- Mobile IoT Devices

Simplified Application Diagram



Ordering Information

| Part Number | VOUT OVP Threshold | Package | Packing Method |
|--------------|--------------------|---------|----------------|
| HL5095KAWL01 | 14.2V | WLCSP-9 | Tape & Reel |
| HL5095KBWL01 | 10.4V | WLCSP-9 | Tape & Reel |
| HL5095KCWL01 | 5.8V | WLCSP-9 | Tape & Reel |

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