

Over-Voltage and Surge Protection Load Switch

■ General Description

The OCP9225 features a low-Ron internal FET and an operating range of $3V_{DC}$ to $28V_{DC}$. An internal clamp is capable of shunting surge voltages $\pm 100V$, protecting downstream components and enhancing system robustness. The OCP9225 features over-voltage protection that powers down the internal FET if the input voltage exceeds the OVP threshold. The OVP threshold is adjustable with optional external resistors. Over-temperature protection also powers down the device at $140\text{ }^{\circ}C$ (typical).

The OCP9225 is available in a fully “green” compliant $1.237mm * 1.912mm$ WLCSP-12B Package.

■ Features

- Surge Protection
-IEC 61000-4-5: $\pm 100V$
- Over-Voltage Protection (OVP)
- Over-Temperature Protection (OTP)
- Absolute Maximum Input Voltage: 35V
- Low Ron Switch : $18m\Omega$
- Default OVP threshold
- OCP9225A :6.8V
- OCP9225B :10.2V
- External OVLO threshold : 1.2V

■ Applications

- Portable Media Players
- Cell Phones or Smart Phones
- PDAs
- Mobile Handsets
- Tablet PCs and Laptops/Net books

■ Pin Configuration

WLCSP-12B(Top View):

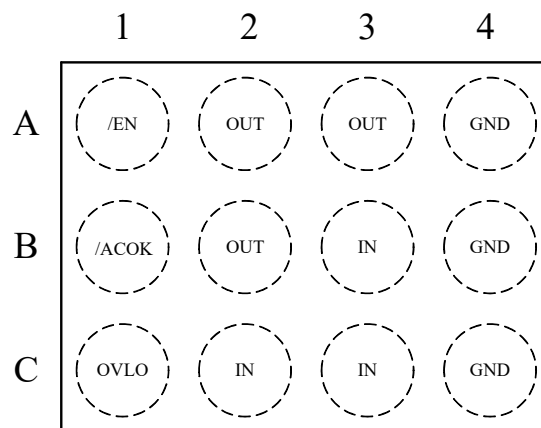


Figure 1, Pin Assignments of OCP9225

Pin Name	Pin No.	Pin Function
OUT	A2 A3 B2	Switch output to Load
IN	B3 C2 C3	Switch input and Device supply
OVLO	C1	Over-Voltage Lockout Adjustment Pin
GND	A4 B4 C4	Ground
/EN	A1	Enable pin, active low
/ACOK	B1	Power flag, active-low, open-drain output. When $V_{IN_UVLO} < V_{IN} < V_{IN_OVLO}$, /ACOK is pulled low, otherwise it's hi-Z state

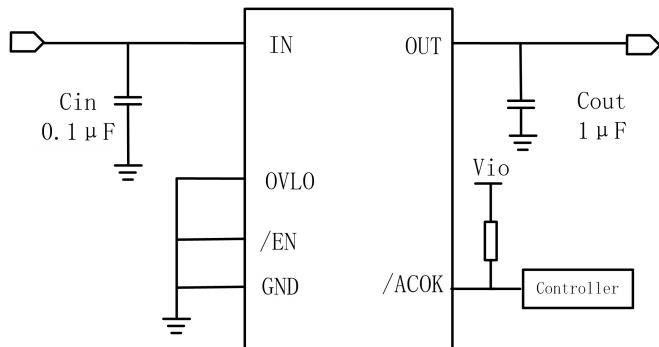
■ Typical Application Circuit


Figure 2-1, using default OVP threshold

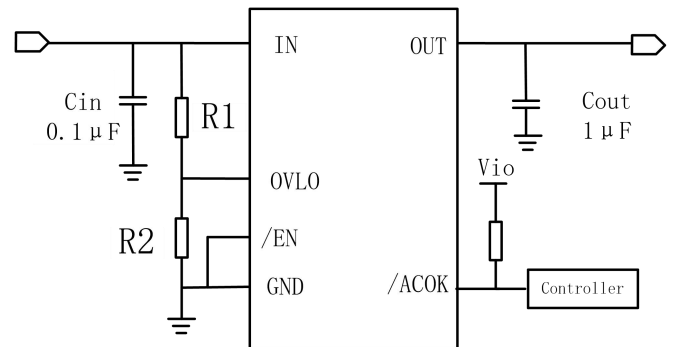


Figure 2-2, using external OVP threshold

1. If V_{IN} is required to pass surge voltage greater than 100V, external TVS is needed, the maximum clamping voltage of the TVS should be below 35V.
2. When the default OVP threshold is used, connect OVLO pin to GND directly or through a 0Ω resistor. OVLO pin cannot be left floating.
3. If R1 and R2 are used to adjust the OVP threshold, it is better to use 1% precision resistors to improve the OVP threshold precision.
4. If /ACOK is not used, it can be left floating, or short to GND.
5. $C_{IN}=0.1\mu F$ is recommended for typical application, larger C_{IN} is also acceptable. The rated voltage of C_{IN} should be larger than the TVS maximum clamping voltage, if no TVS is applied and only OCP9225 is used, the rated voltage of C_{IN} should be 50V.
6. $C_{OUT}=1\mu F$ is recommended for typical application, larger C_{OUT} is also acceptable. The rated voltage of C_{OUT} should be larger than the OVP threshold. For example, if the OVP threshold is 6.8V, the rated voltage of C_{OUT} should be 10V or higher, if the OVP threshold is 10.2V, the rated voltage of C_{OUT} should be 16V or higher.

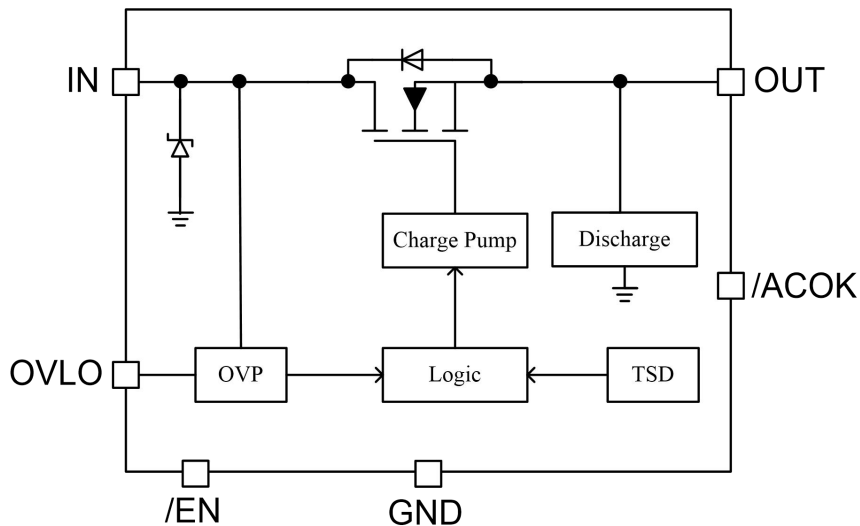
■ Block Diagram


Figure 3, Block Diagram of OCP9225