The SPV1040 is a monolithic, high efficiency, low voltage, self-powered DC/DC converter that operates over 0.3 V to 5.5 V DC input voltage range and provides a single output voltage up to 5.5 V. As the synchronous rectifier switch is integrated, no external diode is required.

The SPV1040 provides regulated output voltage and current by sensing the VCTRL feedback of the external resistor divider and the voltage drop on the external sense resistor Rs.

The high efficiency is assured by the low power consumption in any working mode and by the embedded Perturb&Observe MPPT algorithm.

The SPV1040 guarantees its own and application safety by stopping the N-channel power switch in case of over-current or over-temperature conditions. The simplified block diagram is shown here below.

Figure 3. Block diagram