

IC: SPV1040T - TSSOP 8

Input: 4.5 V (20 % ripple)

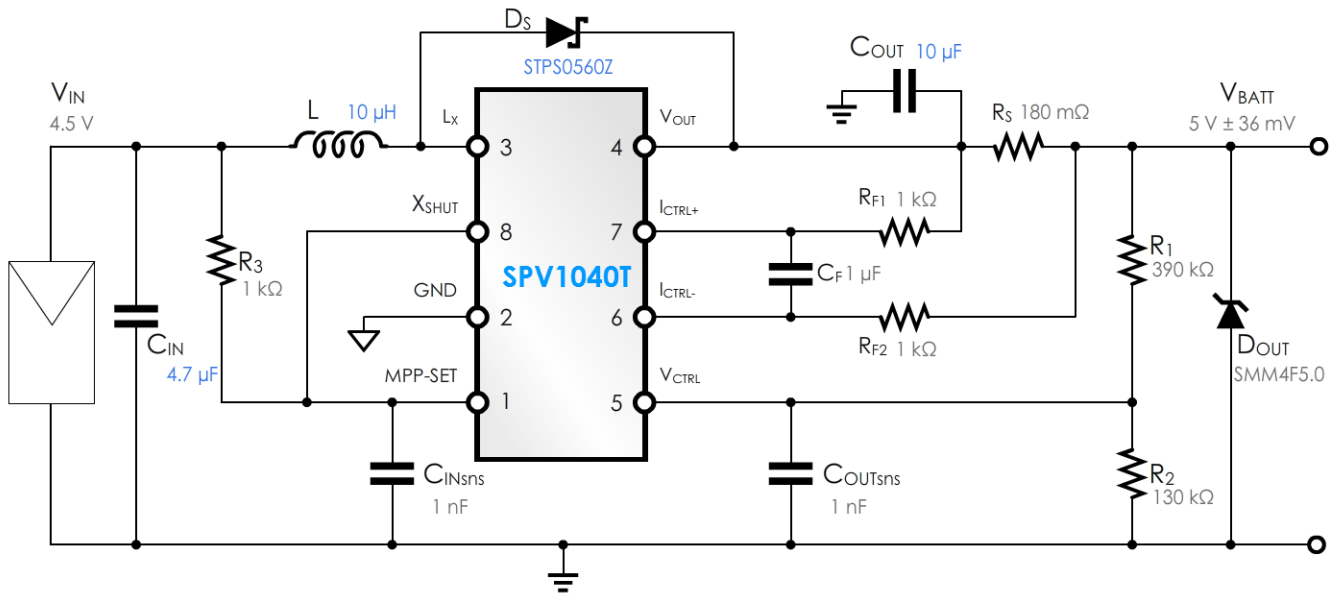
Output: 5 V (10 % ripple) - 265 mA max

Panel:

V<sub>mp</sub>: 4.5 V - V<sub>oc</sub>: 4.9 V

I<sub>mp</sub>: 300 mA - I<sub>sc</sub>: 320 mA

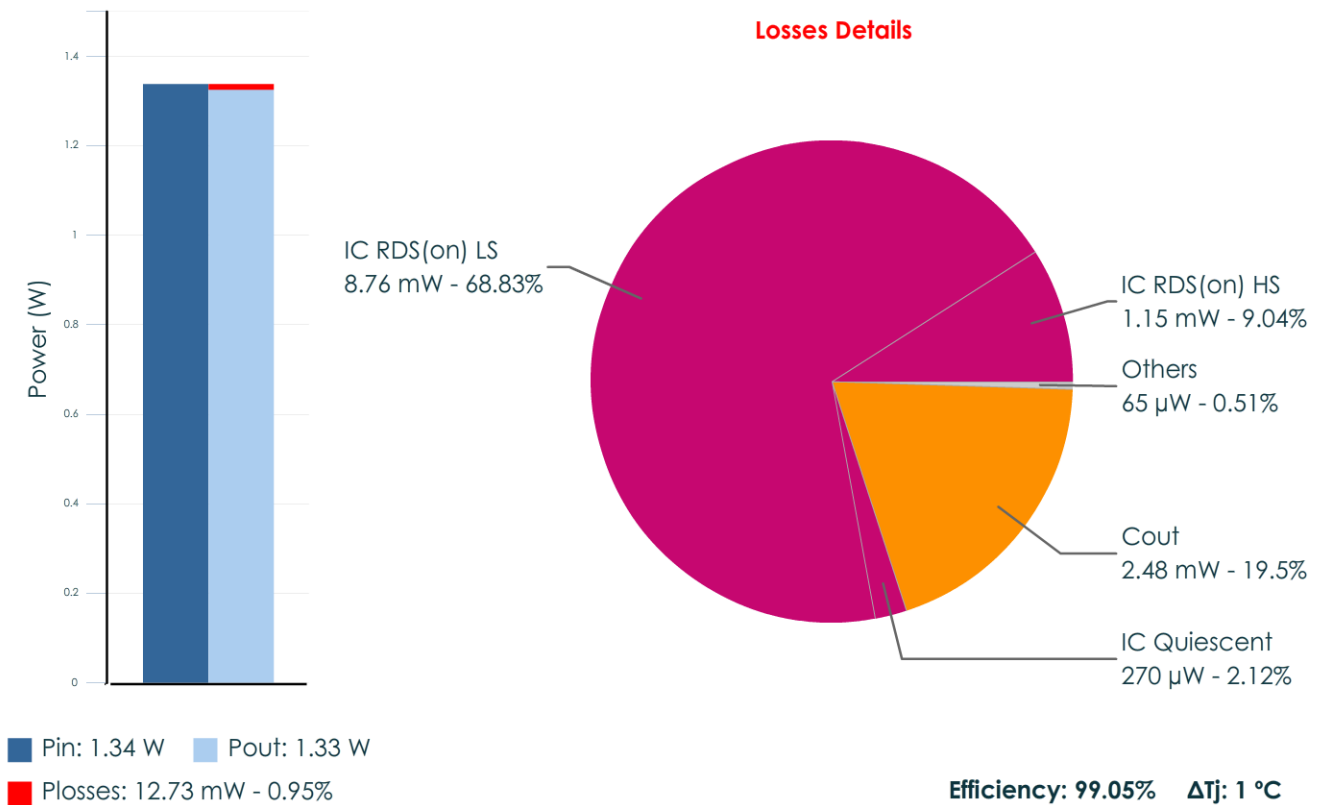
System Operating Condition: Solar irradiance: 10000 % (I<sub>in</sub> = 300 mA) - T<sub>a</sub>: 25.0 °C



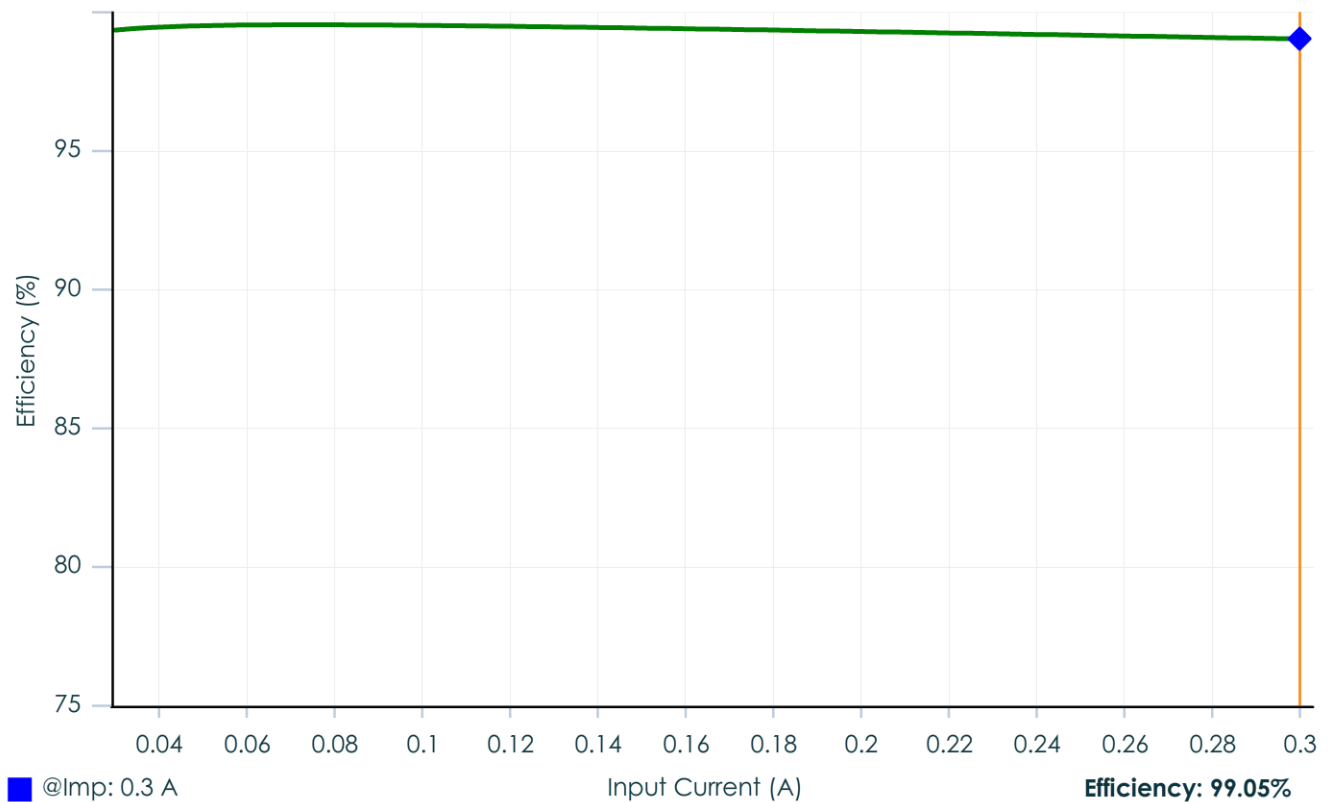
## Bill of Materials

Type	Reference	Value	Description
IC	IC	SPV1040T	SPV1040T - TSSOP 8
Inductor	L	10 µH	3.3 A - Panasonic - ELLATV100M
Capacitor	Cout	10 µF	10 V - 10% - muRata - GRM21BR61A106KE19L
Capacitor	Cin	4.7 µF	10 V - 10% - muRata - GRM219R61A475KE34D
PV Panel	Panel	4.5 V, 300 mA	
Resistor	RS	180 mΩ	180 mΩ
Resistor	RF1	1 kΩ	1 kΩ
Resistor	RF2	1 kΩ	1 kΩ
Capacitor	CF	1 µF	1 µF
Resistor	R3	1 kΩ	1 kΩ
Capacitor	CinSNS	1 nF	1 nF - Voltage rating > 5.2 V
Resistor	R1	390 kΩ	390 kΩ
Resistor	R2	130 kΩ	130 kΩ
Capacitor	CoutSNS	1 nF	1 nF - Voltage rating > 5.2 V
Diode	Dout	SMM4F5.0	V <sub>br</sub> : 6.8 V , V <sub>cl</sub> : 9.2 V - STMicroelectronics
Diode	DS	STPS0560Z	500 mA, 60 V - STMicroelectronics

## Power Losses



## Efficiency



**CV vs CC**