

eDesignSuite

converter.prj

Photovoltaic Specification

IC: SPV1040T

Topology: BOOST

Input: 930 mV (20 % ripple)

panel:

Vmp: 930 mV Voc: 1.2 V Imp: 450 mA Isc: 500 mA

Output 1: 3.3 V (5 % ripple) - 100 mA max

Operating Conditions

@Irradiation - min 10 % / max 100 %: 100%

@Ta - min -40 °C / max 125 °C: 25 °C

Actuals

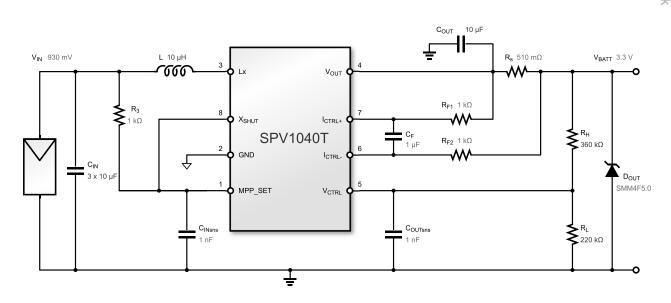
lout: 0.1 A **Vout:** 3.3 V

ripple: 89 mV - 2.7 %

IL:

fsw: 100 kHzTon: $7.22 \mu \text{s}$ IC Tj: $26.6 \,^{\circ}\text{C}$ Δ Tj: $1.6 \,^{\circ}\text{C}$

Circuit - Schematic

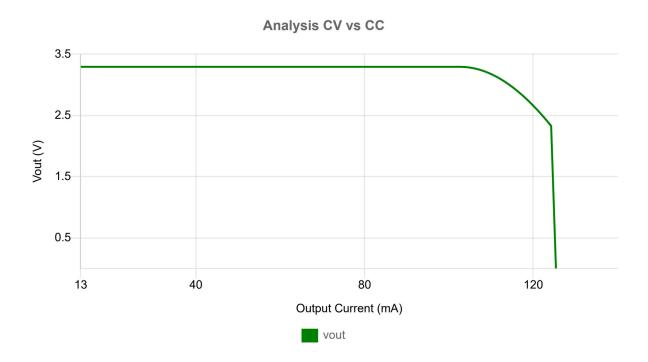


Feedbac

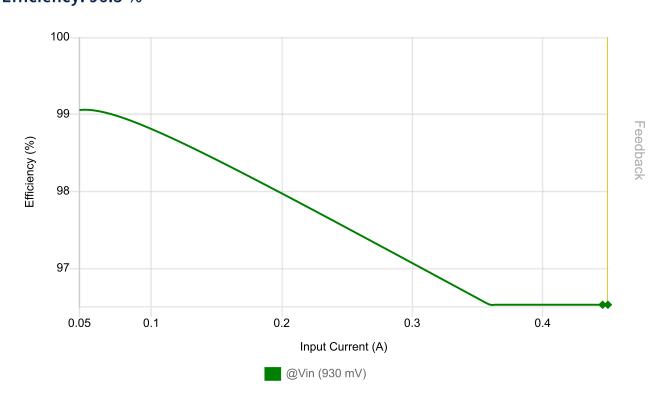
Circuit - BOM

Туре	Ref	Value	Description
IC 环	IC	SPV1040T	SPV1040T - TSSOP 8 - STMicroelectronics
Capacitor	Cin	3 x 10 μF	4 V - 20% - Panasonic - ECJ1VB0G106M
Capacitor	Cout	10 μF	10 V - 10% - muRata - GRM21BR61A106KE19L
Inductor	L	10 μΗ	Unknown - \$Auto\$
Resistor	Rh	360 kΩ	Resistor value: 360 k Ω - tolerance: 1 %
Resistor	Rl	220 kΩ	Resistor value: 220 k Ω - tolerance: 1 $\%$
Capacitor	CinSNS	1 nF	1 nF - Voltage rating > 5.2 V
Capacitor	CoutSNS	1 nF	1 nF - Voltage rating > 5.2 V
Diode	Dout	SMM4F5.0	Vbr:6.8 V, Vcl:9.2 V - STMicroelectronics
Resistor	RS	510 mΩ	$510\ m\Omega$
Resistor	RF1	1 kΩ	1 kΩ
Resistor	RF2	1 kΩ	1 kΩ
Capacitor	CF	1 μF	1 μF
Resistor	R3	1 kΩ	1 kΩ

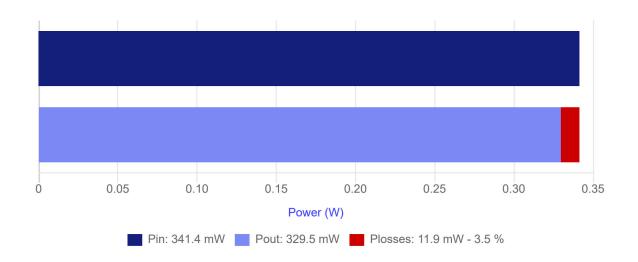
CV vs CC



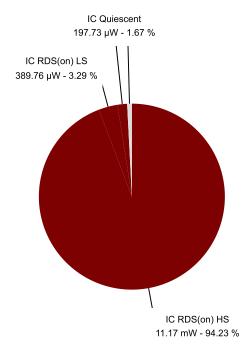
Efficiency: 96.5 %



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Losses details



Геепра