Project: UNTITLED



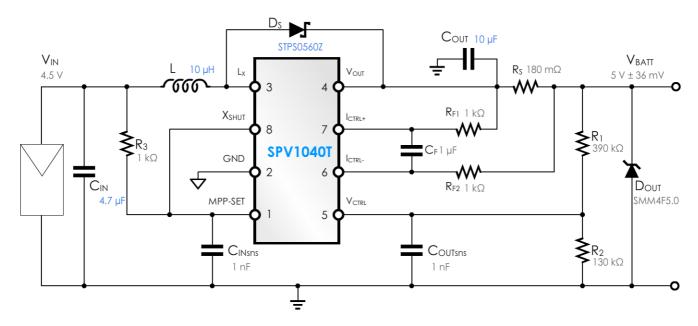
IC: SPV1040T - TSSOP 8 Input: 4.5 V (20 % ripple)

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

Panel:

**Vmp:** 4.5 V - **Voc**: 4.9 V **Imp:** 300 mA - **Isc**: 320 mA

System Operating Condition: Solar irradiance: 10000 % (lin = 300 mA) - Ta: 25.0 °C



## **Bill of Materials**

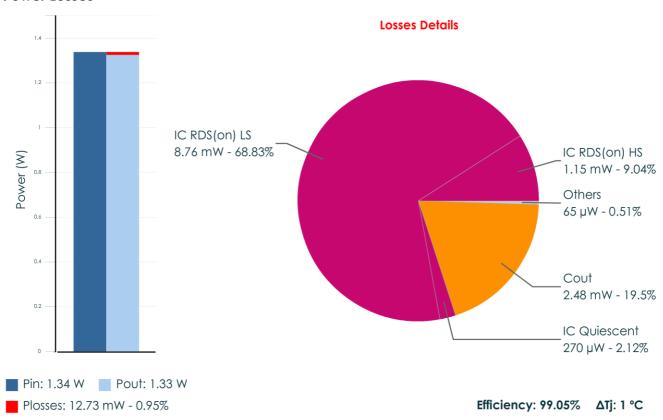
| Туре      | Reference | Value         | Description                                  |
|-----------|-----------|---------------|--|
| IC        | IC        | SPV1040T      | SPV1040T - TSSOP 8                           |
| Inductor  | L         | 10 µH         | 3.3 A - Panasonic - ELLATV100M               |
| 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      | Vbr: 6.8 V , Vcl: 9.2 V - STMicroelectronics |
| Diode     | DS        | STPS0560Z     | 500 mA, 60 V - STMicroelectronics            |

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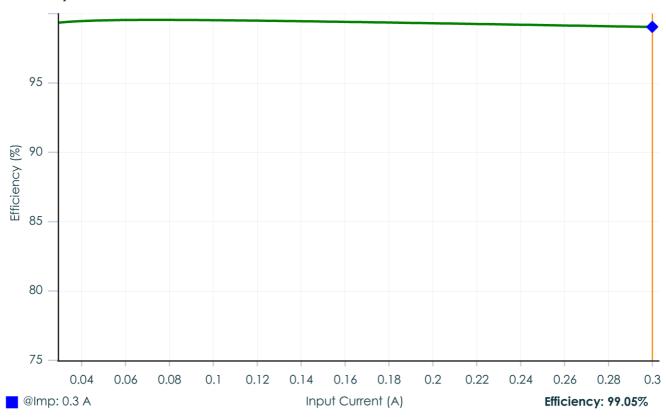
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## **Power Losses**



## **Efficiency**



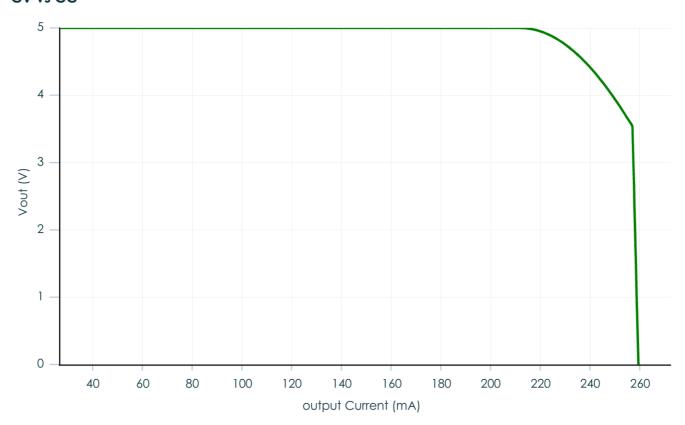
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## CV vs CC



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