



$$I_{R1} = 120\text{mV} / 50\text{m}\Omega = 2.4\text{A}$$

$$\begin{aligned} V_{bat} &= 1.205 \times (1 + R1/R2) + I_b \times R1 \\ &= 1.205 \times (1 + 187\text{K} / 56.2\text{K}) + 60\text{nA} \times 187\text{K} \\ &= 5.215\text{V} + 0.011\text{V} = 5.226\text{V} \end{aligned}$$

$$\begin{aligned} V_{mppt} &= 1.205 \times (1 + R1/R2) \\ &= 1.205 \times (1 + 187\text{K} / 24\text{K}) \\ &= 10.05\text{V} \end{aligned}$$

$$\begin{aligned} I_L (\text{Inductor Ripple Current}) &= 1 / (f \times L) \times V_{bat} \times (1 - V_{bat} / V_{cc}) \\ &= 1 / (310\text{K} \times 0.000047) \times 5.226 \times (1 - 5.226 / 15) \\ &= 0.0686 \times 3.405 = 0.234\text{(A)} \end{aligned}$$

$$\begin{aligned} L &> 5 \times (V_{cc} - V_{bat}) \\ L &> 5 \times (10 - 5) \\ L &> 25\mu\text{H} \end{aligned}$$

## SPACEWIZARD TECHNOLOGY

Title		
CN3795 SOLAR PAD CONVERTER		
Size A	Document Number <b>MCB00239</b>	Rev <b>2.0</b>

Date: Monday, February 14, 2022

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