According to the design requirements, $VIN_{min} = 90VAC$ multiply by 1.41 as the peak voltage and take a 20% margin. Thus,

$VIN_{min} = 90VAC * 1.41 * 0.8 = 101V$

$$Duty(max) = \frac{V_o}{VIN_{min}} = \frac{5VDC}{101V} = 0.0495$$

$$t_{on}(max) = \frac{Duty(max)}{fsw(min)} = \frac{0.0495}{66kHz} = 0.75us$$

$Io(max)$ takes a margin of about 20%, $Io(max) = 170mA * 1.2 = 0.204A$

$L = t_{on}(max) * \frac{VIN_{min}-V_o}{I_p}$ (Where the critical point (peak) $I_p = Io(max) * 2 = 0.408A$)

$= 0.75us * \frac{101VDC-5VDC}{0.408A} = 176.47uH$ => the inductor should be larger than 177uH

So, I selected 680uH (required by datasheet and widely available in the supply chain)

Calculation of the Inductor's Current Rating

Assume that the minimum ON time at the maximum input voltage 264VAC is

$$t_{on}(min) = \frac{(\frac{5VDC}{264VAC * 1.41})}{66kHz} = 0.2us$$

Thus, $IL_{peak} = t_{on}(min) * \frac{VIN_{max}-V_o}{L} = 0.2us * \frac{264VAC*1.41-5VDC}{680uH} = 0.108A$

=> the inductor's current rating should be larger than 0.2A.

2. Output Capacitor C3

   Assume that the output ripple voltage (ΔVpp) is 100mV

   $Z_{C3} < \frac{\Delta Vpp}{IL_{peak}} = \frac{0.1V}{0.108A} = 0.926\ Ohm\ @\ 66kHz\ (fsw(min))$

   Convert Z_{C3} from 66kHz to 100kHz

   $$Z_{C3} < 0.926\ Ohm * \frac{66}{100} = 0.611\ Ohm\ @\ 100kHz$$

   The ripple current $I_s(rms)$:

   $$I_s(rms) = IL_{spk} * \sqrt{\frac{1}{3}} = 0.108A * \sqrt{\frac{1}{3}} = 0.06235A$$