



PHD EQ系列(2022)

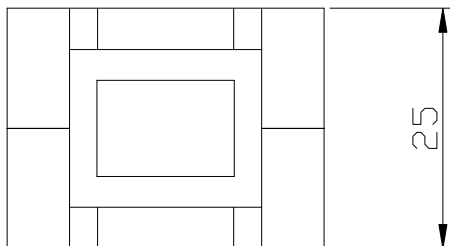
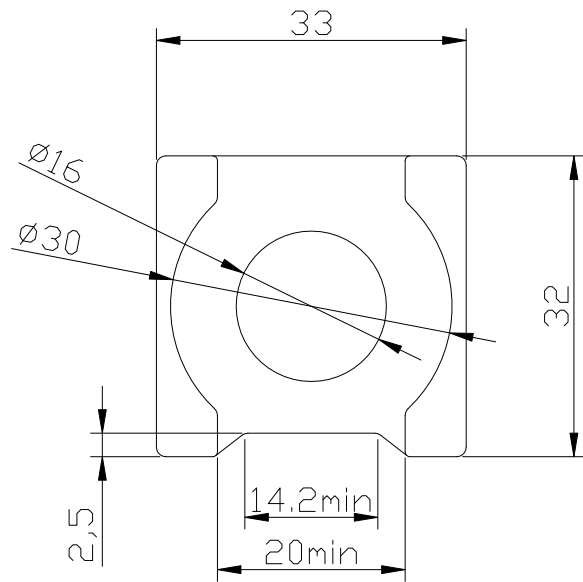
一個全新複合式元件的時代！

百微股份有限公司研發工程部





- PHD EQ3325 hybrid core parameters



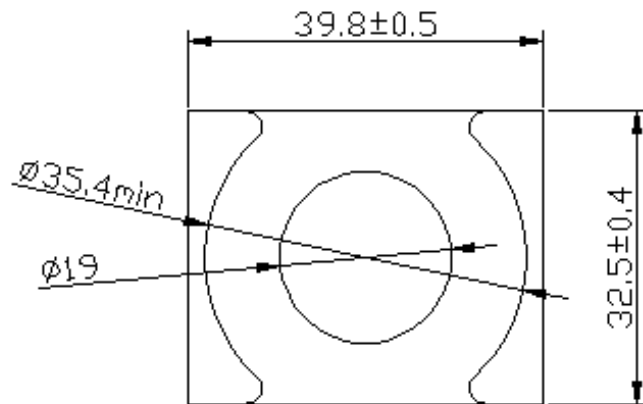
Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(l/A)$	core factor (C1)	0.3	mm^{-1}
V_e	effective volume	12407	mm^3
l_e	effective length	60.8	mm
A_e	effective area	230	mm^2



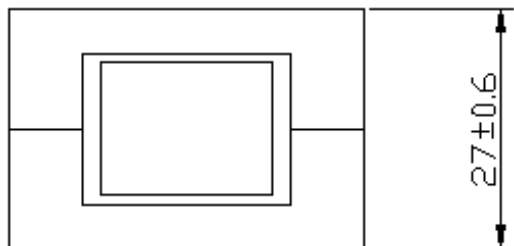


- PHD EQ3927 hybrid core parameters



Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(l/A)$	core factor (C1)	0.2	mm^{-1}
V_e	effective volume	19116	mm^3
l_e	effective length	61.8	mm
A_e	effective area	309.4	mm^2

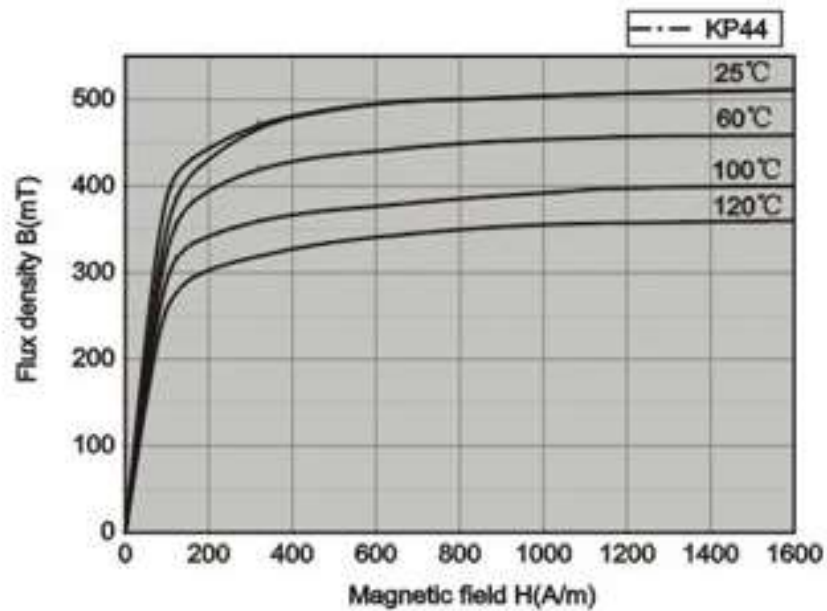




- PHD EQ hybrid core materials

EQ shell core

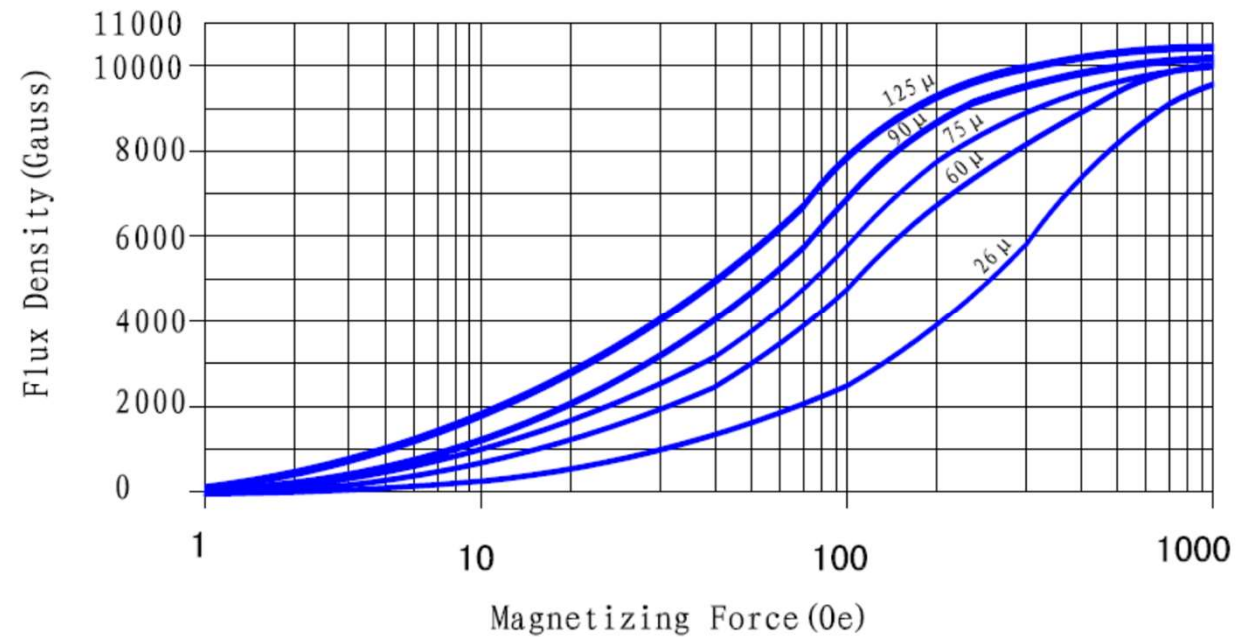
MnZn-ferrite



$B_s \approx 5,100 \text{ Gauss}$ at $H=1194 \text{ A/m}$, 25°C

Center rod core

alloy powder core



$B_s \approx 10,000 \text{ Gauss}$ at $H=1000 \text{ Oe}$, 25°C

1mT = 10Gauss, unit T: Tesla

1A/m = $4\pi \times 10^{-3}$ Oe, unit Oe: Oersted





•PHD EQ系列 vs PQ系列

- 百微PHD_EQ系列擁有更好的空間利用率, 可取代傳統鐵芯設計(PQ)!!

	PHD_EQ3320	PHD_PQ3320	PQ3320
尺寸 (Unit:mm)	35 x 22 x 32	35 x 22 x 32	35 x 22 x 32
組合結構	Ferrite + Alloy core	Ferrite + Alloy core	Ferrite core



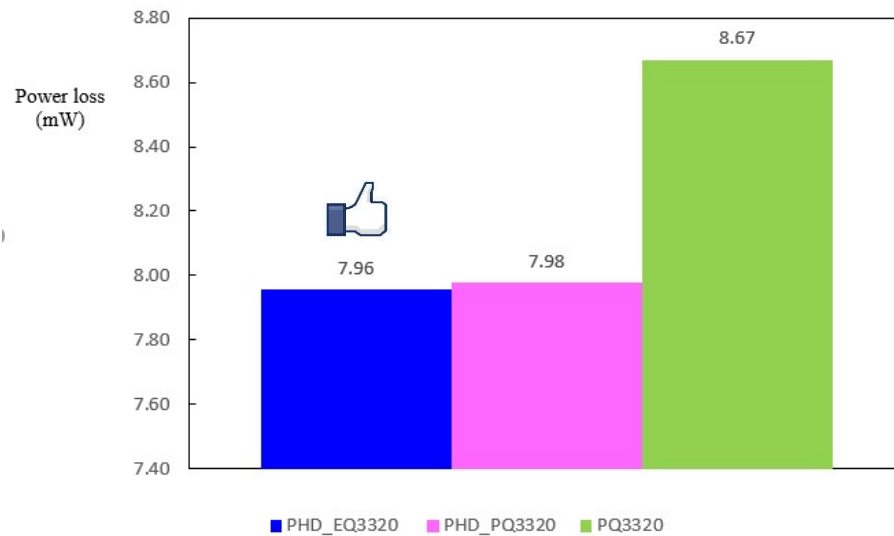


- 提升繞線空間,有效降低銅損
- 維持好的鐵芯損耗

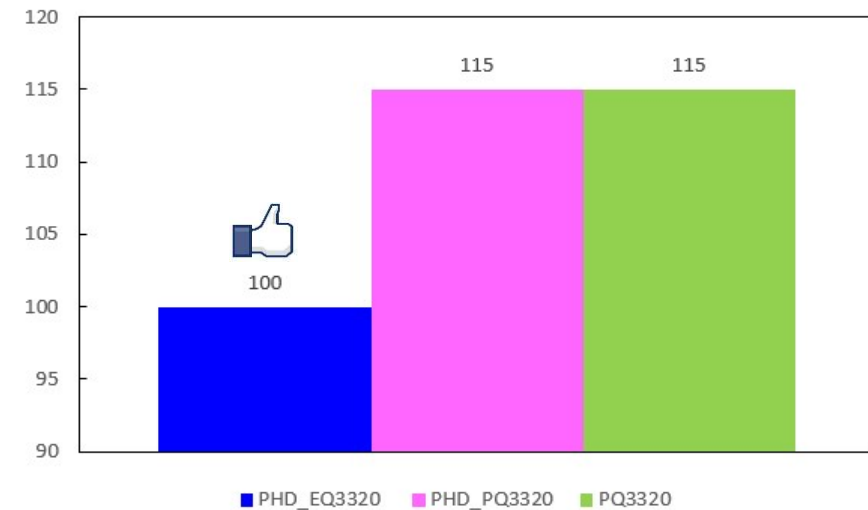
•POWER LOSS

電感條件: L0=250uH,圈數50T

CORE LOSS @100KHZ,17V (sine wave)



DCR (mΩ)

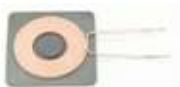
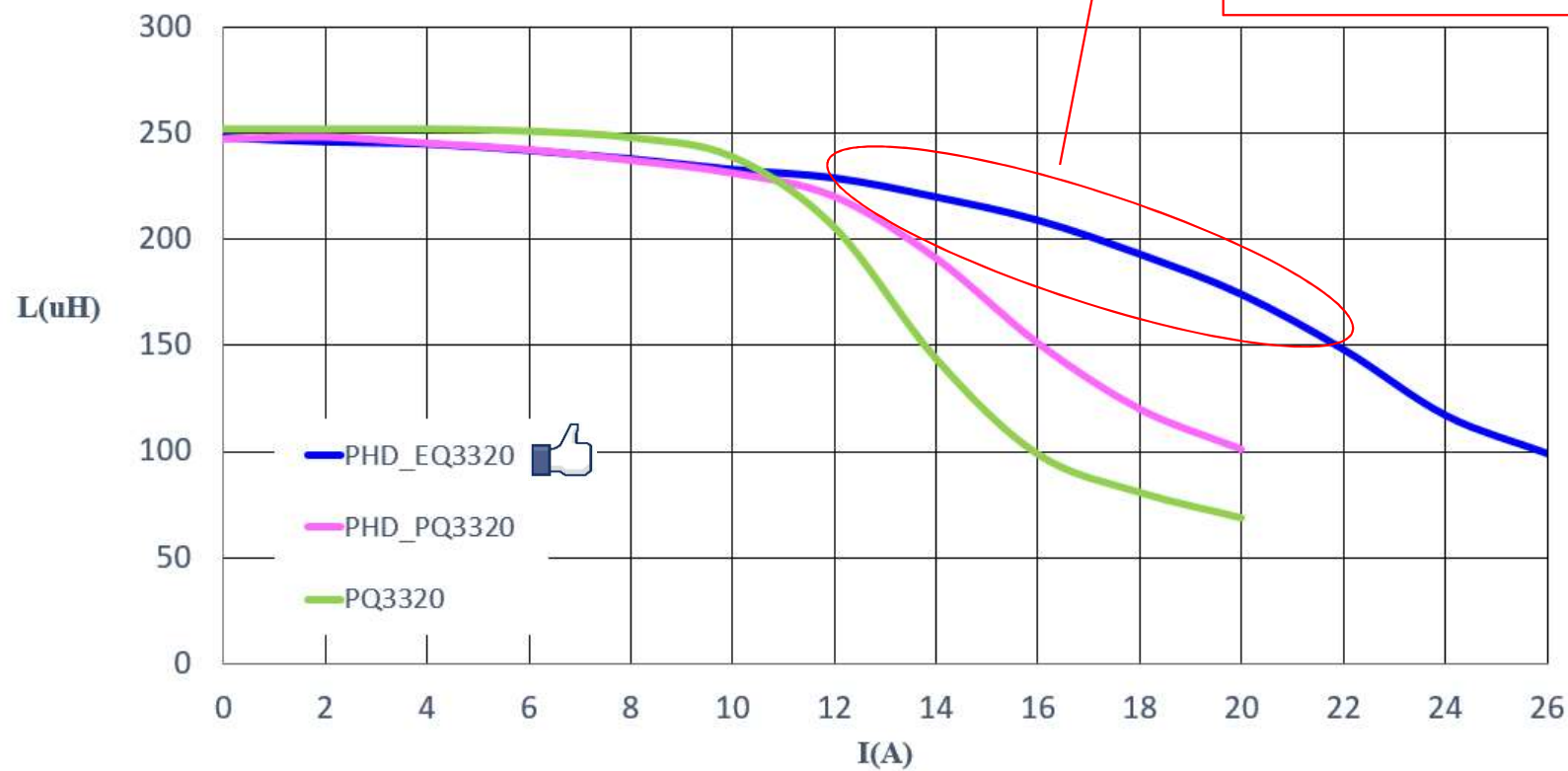




- 能應付更高的電源需求

•DC BIAS

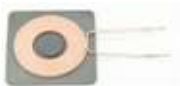
電感條件: $L_0=250\mu\text{H}$, 圈數50T





•PHD EQ系列 (2022)

Product name	Drawing	Suitable power* (90V)
EQ33/19~21		400~550W
EQ3325		500~800W
EQ3927		800~1200W





Q & A ?
Thank you

