

# PoE Power Transformer

Global Leader of Magnetic Components, Intelligent Module Solutions



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# Power transformer-PoE application

PoE(Power over Ethernet) describes the systems which pass electric power along with data on twisted pair Ethernet cabling. It applies on the VoIP Phones, WLAN AP's, Security IP Cameras, Routers and Gateways etc.

PoE of PD(input voltage from 33V~57V, output voltage are 3.3V,5V,12V optional with AUX winding

- EP5.5(3W)
- EP7(3-7W)
- EP13(15W/30W)
- \*EPD13.3(22W/30W)
- \*EPD13(25W/70W)
- EFD15(15W/30W)
- EFD20(25W/70W)
- EFD25(50W/100W)
- Planar(50W/100W)



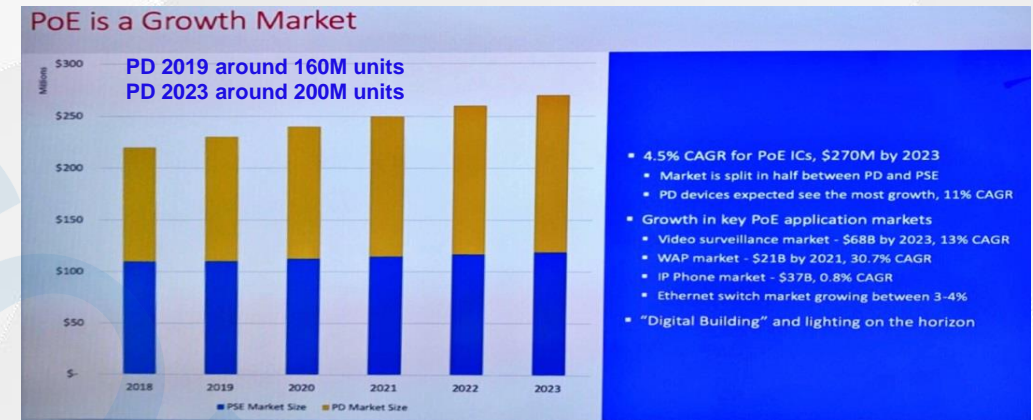
WLAN AP's



Security IP Cameras



VoIP Phones



Type	Standard	PSE minimum output power	PD minimum input power	Cable category	Cable length	Power over
Type 1	IEEE802.3af	15.4 W	12.95 W	Cat5e	100 m	2 pairs
Type 2	IEEE802.3at	30 W	25.5 W	Cat5e	100 m	2 pairs
Type 3	IEEE802.3bt	60 W	51 W-60 W <sup>1</sup>	Cat5e	100 m	2 pairs class 0-4 4 pairs class 0-4 4 pairs class 5-6
Type 4	IEEE802.3bt	90 W	71 W-90 W <sup>1</sup>	Cat5e	100 m	4 pairs class 7-8

1. Extended power capability allows PD input power to reach up to 60 W for Type 3 and up to 90 W for Type 4 if channel length is known.

# Package and Watt List

Item	Flyback Topology	Forward Topology	Dimension (mm ; Length*Width*Height)
EP-7	8W	NA	9.5*7.7*11.0
EP-13	24W	45W	13.5*15.1*14.0
EFD-15	20W	40W	17.0*16.0*9.5
EFD-17	28W	54W	18.0*18.1*10.0
EFD-20	36W	75W	21.1*21.5*12.0
EFD-25	45W	100W	26.0*26.0*14.5
EFD-30	60W	130W	31.5*31.5*14.5
EPD-13*	32W	70W	13.5*16.2*14.5
EPD-13.3*	22W	30W	13.5*14.9*10.0
Planar*	70W	100W	22.7*26.0*9.8

\* Innovated by LinkCom

# EPD-13 replace EFD-20

## Improve the efficiency

See the efficiency comparison as diagram

## Reduce the PCB size

EPD-13 18.6mm\*14mm=260.4mm<sup>2</sup>

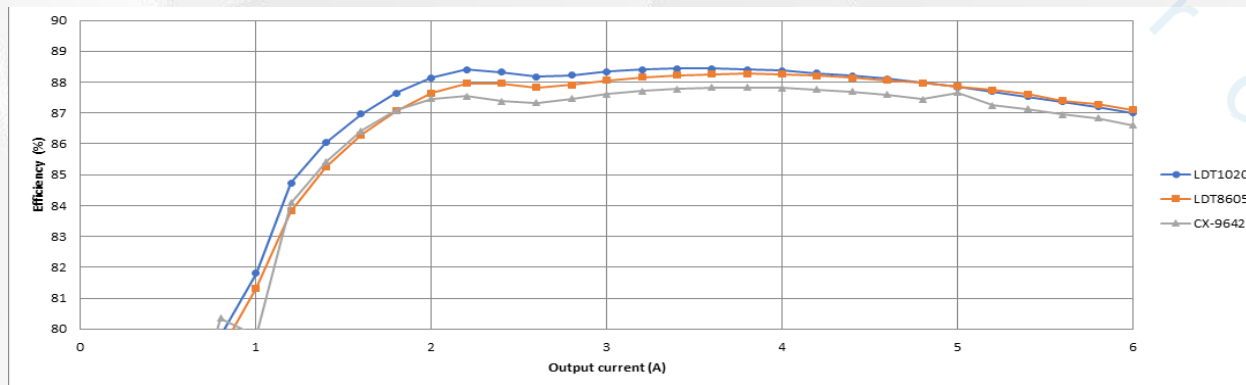
EFD-20 30.4mm\*20.1mm=611.04mm<sup>2</sup>

EPD-13 reduce the PCB size around 350.64mm<sup>2</sup> than EFD-20

## Reduce the EMI issue

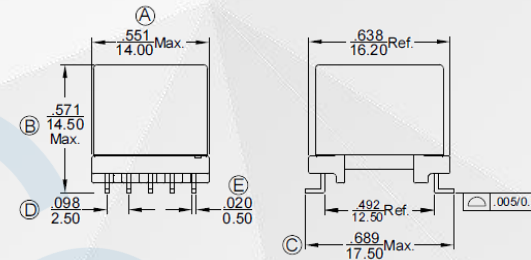
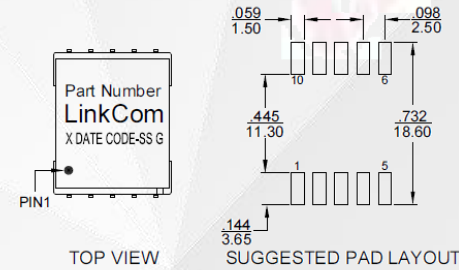
The EPD-13 is shielded core it helps to reduce the EMI

## Reduce the Cost



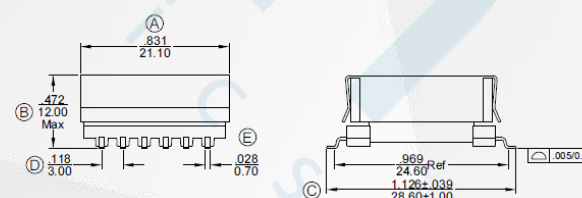
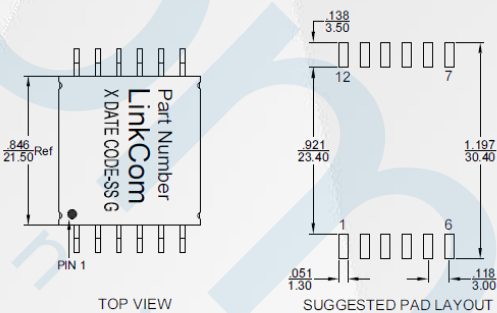
### Dimensions

(Units:  $\frac{\text{Inches}}{\text{mm}}$ , Unless otherwise specified, all tolerances are  $\pm \frac{.010}{0.25}$ )

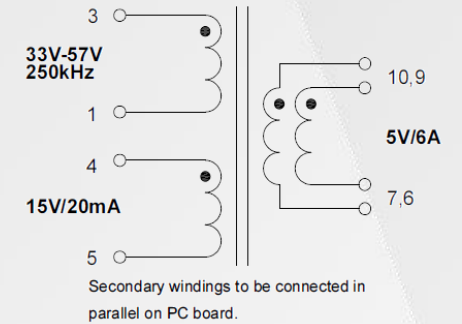


### Dimensions

((Units:  $\frac{\text{Inches}}{\text{mm}}$ , Unless otherwise specified, all tolerances are  $\pm \frac{.010}{0.25}$ )



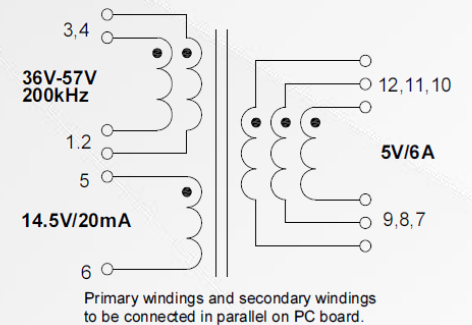
### Schematic



### Mark

1. Part Number---LDT1020
2. X---PRODUCT LINE or BLANK
3. DATE CODE---YYWW
4. SS---50 or BLANK
5. G---RoHS

### Schematic



### Mark

1. Part Number---LDT8605
2. X---PRODUCT LINE or BLANK
3. DATE CODE---YYWW
4. SS---50 or BLANK
5. G---RoHS

# EPD-13.3(low profile under 10mm)

## Reduce the PCB size

EP-13 18.75mm\*14mm=262.5mm<sup>2</sup>

EPD-13.3 16mm\*13.5mm=216mm<sup>2</sup>

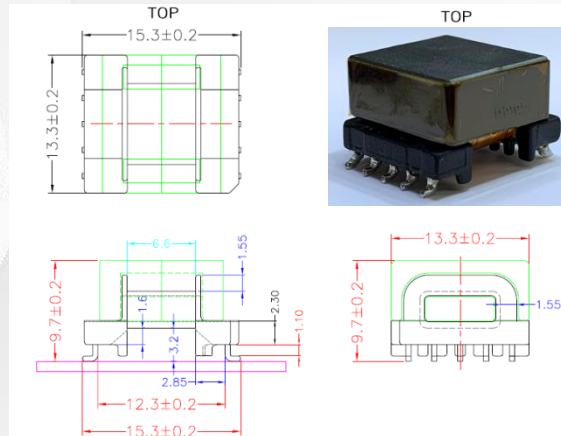
EFD-15 23mm\*17mm=391mm<sup>2</sup>

## Reduce the EMI issue

The EPD-13.3 is shielded core it helps to reduce the EMI than EFD-15

## Reduce the height

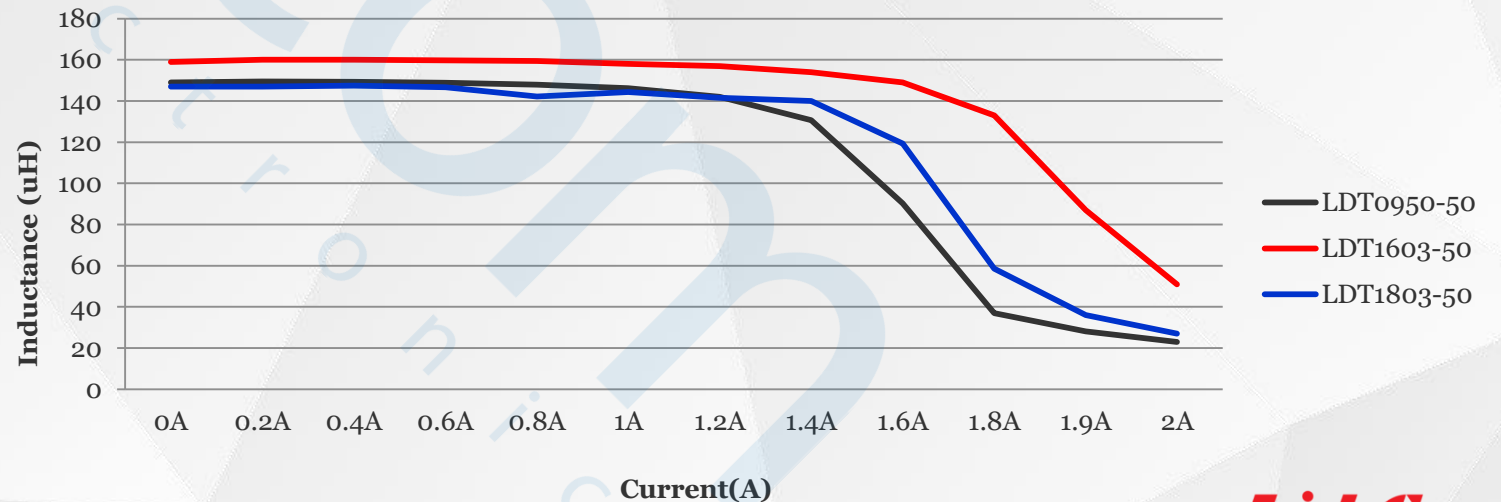
The height of EPD-13.3 is lower than EP-13



We=6.5mm\*1.4mm=9.1mm Min(TBI provide)  
Ae=19.2mm<sup>2</sup> Le=23.9mm Ve=458.88mm<sup>3</sup>

Topology	Flyback			Forward		
Voltage	3.3V	5V	12V	3.3V	5V	12V
<b>12W</b>	LDT1801-50	LDT1802-50	LDT1803-50	LDT1811-50	LDT1812-50	LDT1813-50
<b>25W</b>	NA	LDT1805-50	LDT1806-50	NA	LDT1815-50	LDT1816-50

	Vin(V)	Iin(A)	Vout(V)	Iout(A)	P(%)
<b>LDT0950-50</b> L=150uH	56.29	0.235	11.72	1.00	88.59
	48.15	0.275	11.60	1.00	87.60
	36.05	0.368	11.60	1.00	87.43
<b>LDT1803-50</b> L=150uH	56.16	0.237	11.72	1.00	88.05
	48.12	0.277	11.70	1.00	87.77
	36.27	0.370	11.64	1.00	86.73



# EPD-13.3 replace EFD-15 and lower profile of EP-13

## Reduce the PCB size

EPD-13.3 16mm\*13.5mm=216mm<sup>2</sup>

EFD-15 23mm\*17mm=391mm<sup>2</sup>

EPD-13.3 reduce the PCB size around 175mm<sup>2</sup> than EFD-15

## Reduce the EMI issue

The EPD-13.3 is shielded core it helps to reduce the EMI

## Reduce the Cost

The cost of EPD-13.3 is lower than EFD-15

## Reduce the height

The height lower than EP-13

Pin to pint with EP-13

