

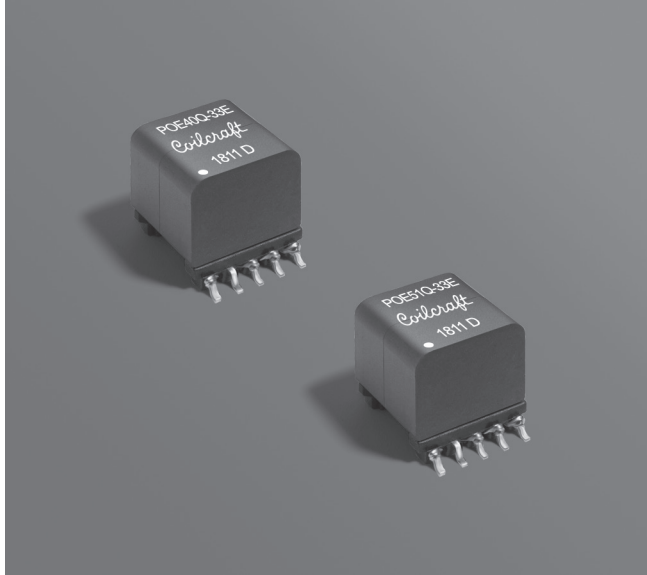


**THE DATASHEET OF
MLC1255-122MLC**





High Power PoE Flyback Transformers



- Developed for Flyback DC/DC PoE PD power converters up to 51 W
- Designed to meet the upcoming IEEE802.3bt standard and operates with 36 – 57 V input
- 1500 Vrms, one minute isolation (hipot) between primary and auxiliary to secondary.
- Perfect solution for high power PoE applications including Smart Building and IoT
- AEC-Q200 Grade 1 (–40°C to +125°C)

Core material Ferrite

Environment RoHS compliant, halogen free

Terminations Tin-silver-copper over tin over nickel over phos bronze

Weight 6.5 – 8 g

Ambient temperature –40°C to +125°C

Maximum part temperature +165°C (Ambient + temp rise)

Storage temperature Component: –40°C to +165°C

Tape and reel packaging: –40°C to +80°C

Resistance to soldering heat Max three 40 second reflows at +260°C, parts cooled to room temperature between cycles

Moisture Sensitivity Level (MSL) 1 (unlimited floor life at <30°C / 85% relative humidity)

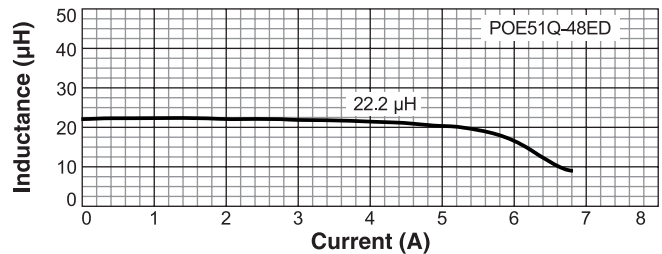
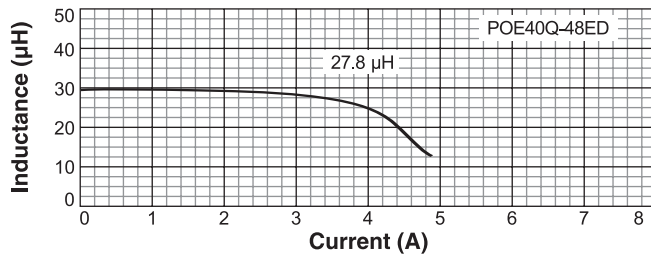
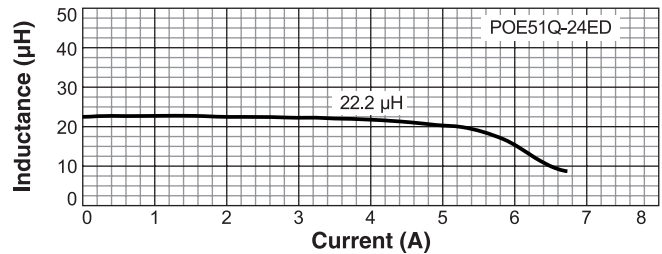
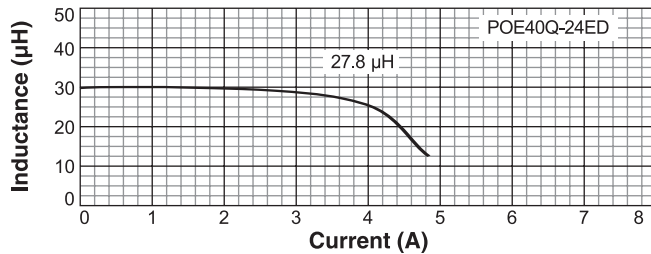
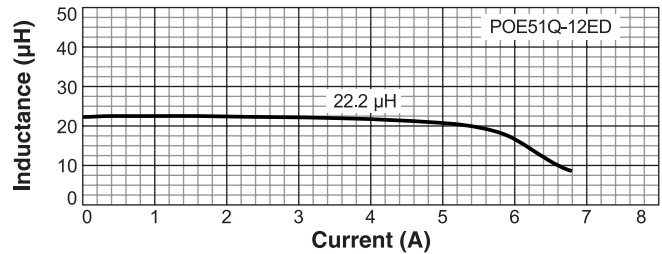
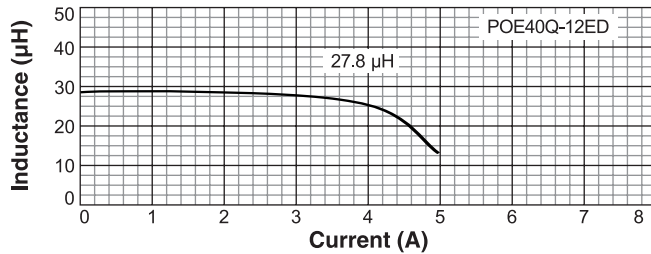
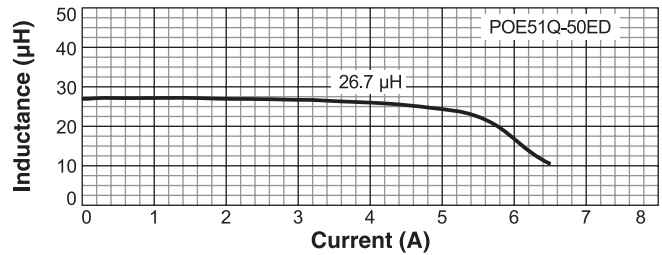
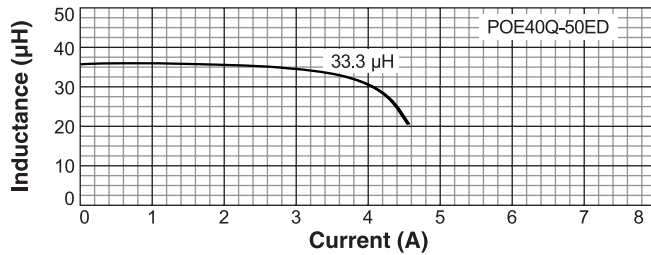
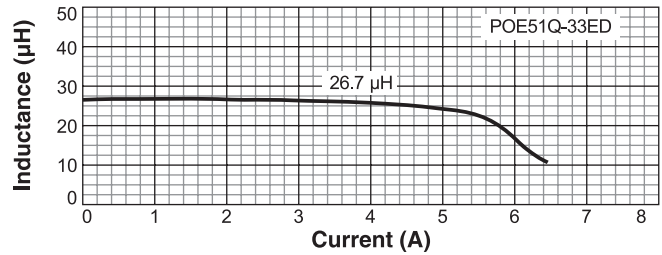
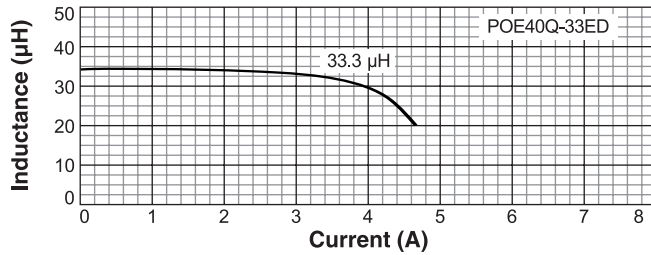
Part number ¹	Power (W)	Inductance at 0 A ² (µH)	DCR max (mOhms)			Leakage inductance ³ max (µH)	Turns ratio		Isat ⁴ (A)	Output ⁵
			pri	sec	aux		pri : sec : aux			
POE40Q-33ED	40	33.3 @ ±15%	64	2	104	0.32	1 : 0.143 : 0.5	3.5	3.3 V, 11 A	
POE40Q-50ED	40	33.3 @ ±15%	66	4	102	0.25	1 : 0.214 : 0.5	3.5	5 V, 7.3 A	
POE40Q-12ED	40	27.8 @ ±15%	35	18	85	0.14	1 : 0.5 : 0.5	3.7	12 V, 3 A	
POE40Q-24ED	40	27.8 @ ±15%	35	69	85	0.14	1 : 1 : 0.5	3.7	24 V, 1.5 A	
POE40Q-48ED	40	27.8 @ ±15%	34	266	85	0.13	1 : 2 : 0.5	3.7	48 V, 0.76 A	
POE51Q-33ED	51	26.7 @ ±10%	64	2	104	0.32	1 : 0.143 : 0.5	4.5	3.3 V, 14.1 A	
POE51Q-50ED	51	26.7 @ ±10%	66	4	102	0.25	1 : 0.214 : 0.5	4.5	5 V, 9.3 A	
POE51Q-12ED	51	22.2 @ ±10%	35	18	85	0.14	1 : 0.5 : 0.5	4.7	12 V, 3.9 A	
POE51Q-24ED	51	22.2 @ ±10%	35	69	85	0.11	1 : 1 : 0.5	4.7	24 V, 1.9 A	
POE51Q-48ED	51	22.2 @ ±10%	34	266	85	0.10	1 : 2 : 0.5	4.7	48 V, 0.97 A	

- Packaging:** D = 13" machine-ready reel. EIA-481 embossed plastic tape (150 parts per full reel). Quantities less than full reel available: in tape (not machine ready) or with leader and trailer (\$25 charge).
 - Inductance is for the primary, measured at 250 kHz, 0.5 Vrms, 0 Adc.
 - Leakage inductance is for the primary with the secondary and aux windings shorted.
 - DC current at 25°C that causes an inductance drop of <15% (POE51Q) and <15% (POE40Q) from its value without current.
 - Output is for the secondary. Output of the aux winding is 12 V, 30 mA.
 - Electrical specifications at 25°C.
- Refer to Doc 362 "Soldering Surface Mount Components" before soldering.



Flyback Transformers for PoE

L vs Current

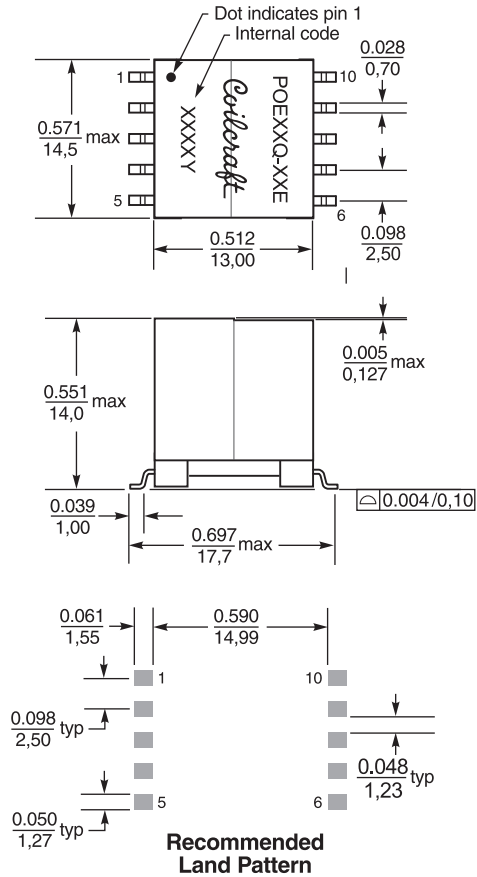


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Flyback Transformers for PoE

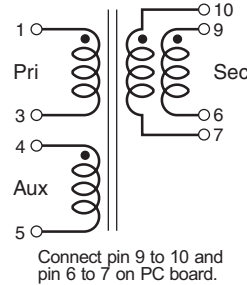


Dimensions are in $\frac{\text{inches}}{\text{mm}}$

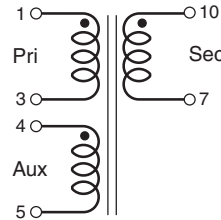
Packaging 150 per 13" reel Plastic tape: 44 mm wide, 0.5 mm thick, 28 mm pocket spacing, 14.6 mm pocket depth

Schematics

POExxQ-12E, POExxQ-24E, POExxQ-33E, POExxQ-50E



POExxQ-48E



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