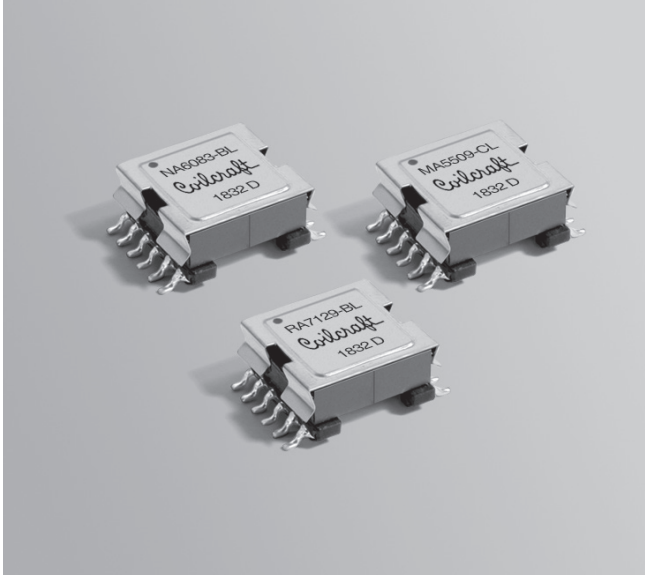




High Power PoE Transformers

For ST PM8804
& ST PM8805
Reference Design



- Optimized for STMicroelectronics high-power PoE PD controller evaluation board STEVAL-POE00xV1
- Designed to meet upcoming IEEE 802.3bt standard
- Operates at 250 kHz with 36 – 72 Volts input.

Core material Ferrite

Terminations RoHS tin-silver-copper over tin over nickel over phos bronze. Other terminations available at additional cost.

Weight 11.5 – 13.5 g

Ambient temperature –40°C to +125°C

Max part temperature +165°C (ambient + self-heating)

Storage temperature –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)

Failures in Time (FIT) / Mean Time Between Failures (MTBF)

38 per billion hours / 26,315,789 hours, calculated per Telcordia SR-332

Packaging 175 per 13" reel Plastic tape: 44 mm wide, 0.5 mm thick, 32 mm pocket spacing, 12 mm pocket depth

PCB washing Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See [Doc787_PCB_Washing.pdf](#).

Active Clamp Forward Transformers

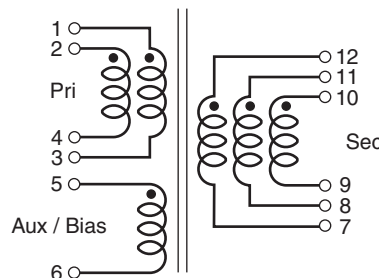
Part ¹ number	Inductance at 0A ² (µH)	DCR max (Ohms)			Leakage inductance ⁴ max (µH)	Turns ratio pri : sec : aux	Output	Isolation ⁵ (Vrms)
		pri	sec	aux				
RA7129-BLD	134 ± 25%	0.0265	0.0035	0.174	0.180	1 : 0.333 : 0.667	5 V, 20 A	1500
MA5509-CLD	70 ± 10%	0.0590	0.0028	0.300	0.838	1 : 0.200 : 0.533	3.3 V, 20 A	1500

Flyback Transformers

Part ¹ number	Inductance at 0A ² (µH)	Inductance at 3.5A ³ (µH)	DCR max (Ohms)			Leakage inductance ⁴ max (µH)	Turns ratio pri : sec : bias	Output	Isolation ⁵ (Vrms)
			pri	sec	bias				
NA6083-BLD	70 ± 10%	60	0.111	0.006	0.66	1.820	1 : 0.20 : 0.60	5 V, 20 A	1500

- Packaging:** D = 13" machine-ready reel. EIA-481 embossed plastic tape (175 parts per full reel). Quantities less than full reel available: in tape (not machine ready) or with leader and trailer (\$25 charge).
 - Inductance for is for the primary, measured at 250 kHz, 0.2 Vrms, 0 Adc.
 - Minimum inductance for the primary, measured at 250 KHz, 0.2 Vrms, 3.5 Adc.
 - Leakage inductance is for the primary winding with the secondary windings shorted.
 - Isolation (hipot) is measured for one minute: 1500Vrms from primary and aux/bias to secondary; 500Vrms from primary to aux/bias.
 - Electrical specifications at 25°C.
- Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

Schematic

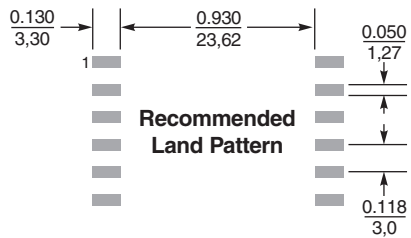
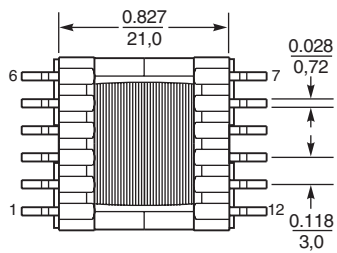
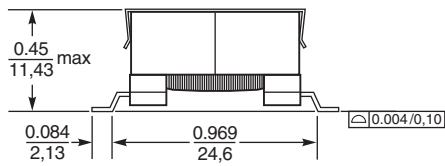
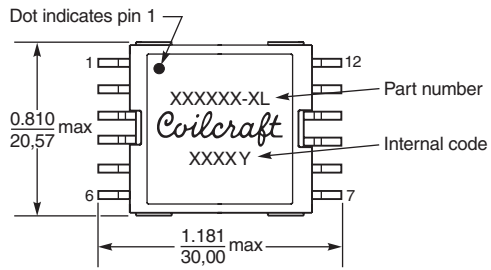


Connect pin 1 to 2 and pin 3 to 4 on the PC board.
Connect pins 10, 11 and 12 together and pins 7, 8 and 9 together on the PC board



High Power PoE Transformers

Dimensions



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



US +1-847-639-6400 sales@coilcraft.com
UK +44-1236-730595 sales@coilcraft-europe.com
Taiwan +886-2-2264 3646 sales@coilcraft.com.tw
China +86-21-6218 8074 sales@coilcraft.com.cn
Singapore + 65-6484 8412 sales@coilcraft.com.sg

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