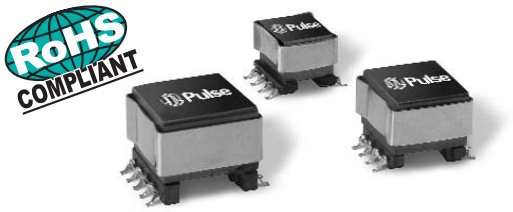
# HIGH FREQUENCY WIRE WOUND TRANSFORMERS

## PoE Power Transformers - EP7, EP10 & EP13

Pulse
A TECHNITROL COMPANY




- Transformers for Power over Ethernet (PoE)
- Power: 3W to 15W
- Three different SMT platforms
- Custom designs available

**Electrical Specifications @ 25°C — Operating Temperature -40°C to 125°C [1]**

| Part [3,4] Number | Application [2] | Turns Ratio | | | Primary Secondary Isolation | Primary Inductance (µH ±10%) | Leakage Inductance (µH MAX) | DCR (mΩ MAX) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Pri. | Sec. | Pri. Aux. | | | | Pri. | Pri. Aux. | Sec. A | Sec. B |
| **EP7 - 8 Pin SMT - (13.3mm x 10.7mm x 9.3mm MAX) - 3W PoE Flyback Transformers** | | | | | | | | | | | |
| **PA1130NL** | Vin=33-57v, Freq.=200kHz Vout=3.3v/3W, 8v/20mA | 1 | 0.083 | 0.208 | 1500Vrms Operational | 500 | 7.5 | 1750 | 215 | 15 | N/A |
| **PA1279NL** | Vin=33-57v, Freq.=200kHz Vout=3.3v/3W, 12v/20mA | 1 | 0.182 | 0.682 | | 310 | 5 | 1600 | 2600 | 45 | N/A |
| **PA1131NL** | Vin=33-57v, Freq.=200kHz Vout=5.0v/3W, 8v/20mA | 1 | 0.125 | 0.208 | | 500 | 7.5 | 1750 | 215 | 35 | N/A |
| **PA1280NL** | Vin=33-57v, Freq.=200kHz Vout=5.0v/3W, 12v/20mA | 1 | 0.273 | 0.682 | | 310 | 5 | 1600 | 2650 | 87 | N/A |
| **PA1132NL** | Vin=33-57v, Freq.=200kHz Vout=12v/3W, 8v/20mA | 1 | 0.286 | 0.204 | | 521 | 7.5 | 1750 | 220 | 100 | N/A |
| **PA1281NL** | Vin=33-57v, Freq.=200kHz Vout=12v/3W, 12v/20mA | 1 | 0.682 | 0.682 | | 310 | 5 | 1600 | 2600 | 550 | N/A |
| **EP10 - 8 Pin SMT - (15.2mm x 13.1mm x 11.5mm MAX) - 7W to 10W PoE Flyback Transformers** | | | | | | | | | | | |
| **PB2115NL** | Vin=36-72v, Freq.=300kHz Vout=3.3v/10W, 5.0v/100mA | 1 | 0.100 | 0.150 | 1500Vdc Operational | 25.2 | 2 | 250 | 20 | 3.25 | N/A |
| **PA1133NL** | Vin=33-57v, Freq.=200kHz Vout=3.3v/7W, 8v/20mA | 1 | 0.083 | 0.208 | 1500Vrms Operational | 253 | 7.5 | 420 | 115 | 7.5 | N/A |
| **PA1253NL** | Vin=33-57v, Freq.=200kHz Vout=1.8v/1A, 3.3v/1.5A, 12v/20mA | 1 | .0420 (1.8v) .0625 (3.3v) | 0.271 | | 253 | 8.5 | 420 | 335 | (1.8v) | (3.3v) |
| **PA1282NL** | Vin=33-57v, Freq.=200kHz Vout=3.3v/7W, 12v/20mA | 1 | 0.182 | 0.682 | | 155 | 5 | 530 | 900 | 31 | N/A |
| **PA1277NL** | Vin=9-50v, Freq.=200kHz Vout=3.3v/10W, 8v/20mA | 1 | 0.222 | 0.555 | | 20.4 | 1.5 | 80 | 150 | 7.5 | N/A |
| **PA1370NL** | Vin=9-50v, Freq.=200kHz Vout=3.3v/10W, 5v/20mA | 1 | 0.444 | 0.388 | | 20.4 | 1.5 | 80 | 105 | 30 | N/A |
| **PA1134NL** | Vin=33-57v, Freq.=200kHz Vout=5.0v/7W, 8v/20mA | 1 | 0.125 | 0.208 | | 253 | 7.5 | 420 | 115 | 16 | N/A |
| **PA1283NL** | Vin=33-57v, Freq.=200kHz Vout=5.0v/7W, 12v/20mA | 1 | 0.273 | 0.682 | | 155 | 5 | 570 | 1000 | 40 | N/A |
| **PA1135NL** | Vin=33-57v, Freq.=200kHz Vout=12v/7W, 8v/20mA | 1 | 0.286 | 0.204 | | 264 | 7.5 | 800 | 115 | 45 | N/A |
| **PA1284NL** | Vin=33-57v, Freq.=200kHz Vout=12v/7W, 12v/20mA | 1 | 0.682 | 0.682 | | 155 | 5 | 540 | 920 | 370 | N/A |
| **EP13 - 10 Pin SMT - (17.7mm x 14.0mm x 12.7mm MAX) - 11W to 27W PoE Flyback Transformers** | | | | | | | | | | | |
| **PA1136NL** | Vin=33-57v, Freq.=200kHz Vout=3.3v/13.5W, 8v/20mA | 1 | 0.083 | 0.208 | 1500Vrms Operational | 127 | 7.5 | 440 | 88 | 6 | N/A |
| **PA1267NL** | Vin=33-57v, Freq.=200kHz Vout=3.3v/11W, 12v/20mA | 1 | 0.167 | 0.639 | | 155.5 | 5 | 330 | 650 | 11 | N/A |
| **PA1269NL** | Vin=33-57v, Freq.=200kHz Vout=3.3v/13.5W, 12v/20mA | 1 | 0.182 | 0.682 | | 77.4 | 5 | 100 | 270 | 8.5 | N/A |
| **PA1137NL** | Vin=33-57v, Freq.=200kHz Vout=5.0v/13.5W, 8v/20mA | 1 | 0.125 | 0.208 | | 127 | 7.5 | 460 | 94 | 12 | N/A |
| **PA1260NL** | Vin=33-57v, Freq.=200kHz Vout=5.0v/13.5W, 12v/20mA | 1 | 0.273 | 0.682 | | 77.4 | 0.8 | 220 | 250 | 18 | N/A |
| **PA1138NL** | Vin=33-57v, Freq.=200kHz Vout=12v/13.5W, 8v/20mA | 1 | 0.292 | 0.208 | | 127 | 7.5 | 460 | 94 | 55 | N/A |
| **PA1276NL** | Vin=33-57v, Freq.=200kHz Vout=12v/13.5W, 12v/20mA | 1 | 0.682 | 0.682 | | 77.4 | 5 | 100 | 270 | 75 | N/A |
| **PA1528NL** | Vin=33-57v, Freq.=200kHz Vout=15v/27W, 12v/20mA | 1 | 0.470 | 0.294 | | 28.9 | 1 | 58 | 55 | 27 | N/A |

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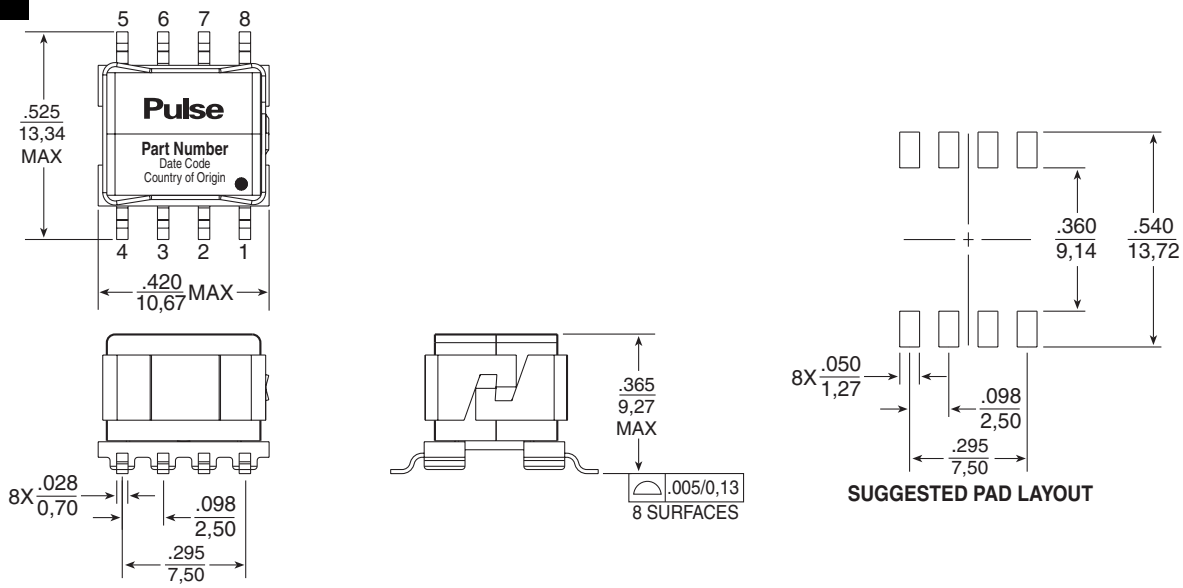
### Notes from Tables

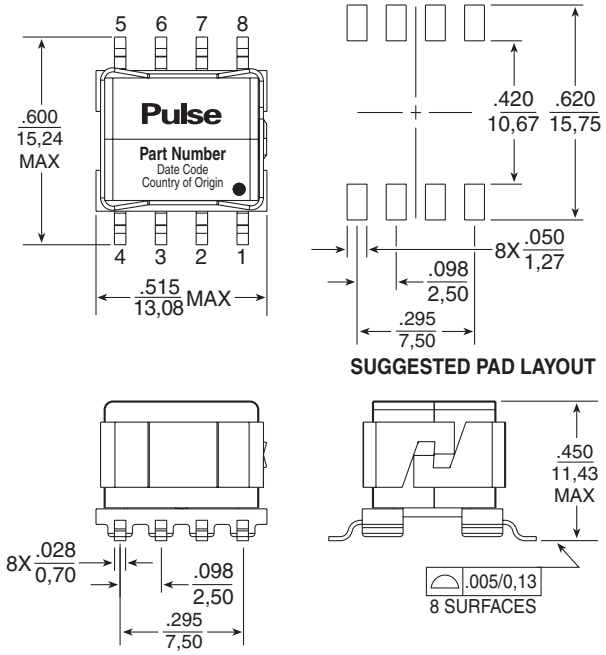
1. The temperature of the component (ambient plus temperature rise) must be within the stated operating temperature range.
2. The above transformers have been tested and approved by Pulse's power IC partners and are sited in the appropriate datasheet or evaluation board documentation at these companies. To determine which IC and IC partners are matched with the above Pulse part numbers please consult the IC Cross Reference on the Pulse website.
3. Add '**T**' suffix to the part number for Tape & Reel version (ie: PA1130NL**T**).
4. The "**NL**" suffix indicates an RoHS-compliant part number. Non-NL suffixed parts are not necessarily RoHS compliant, but are electrically and mechanically equivalent to NL versions. If a part number does not have the "**NL**" suffix, but an RoHS compliant version is required, please contact Pulse for availability.

## Mechanicals

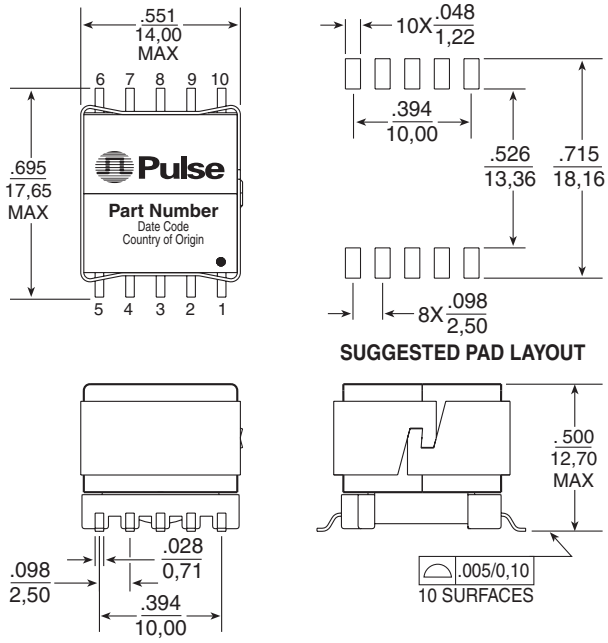
### EP7




### EP10



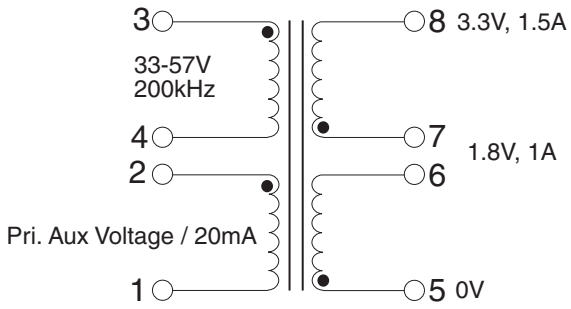

### EP13



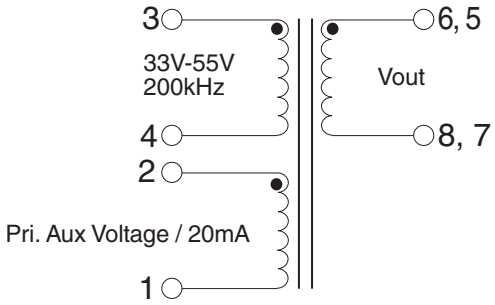
## Schematics

**EP7/10/13**

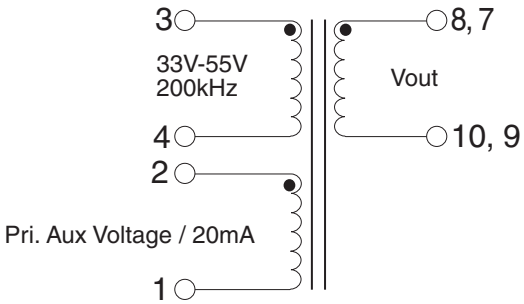
### PA1253NL



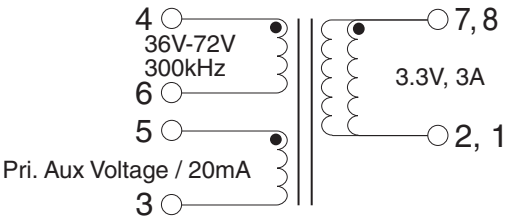

### PA1130NL / 31NL / 32NL / 33NL / 34NL / 35NL/ 79NL / 80NL / 81NL / 82NL / 83NL / 84NL



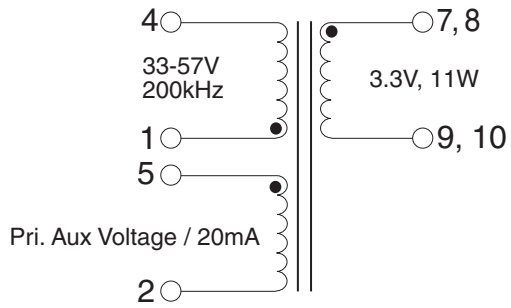

### PA1136NL, PA1137NL, PA1138NL PA1260NL, PA1269NL, PA1276NL, PA1528NL



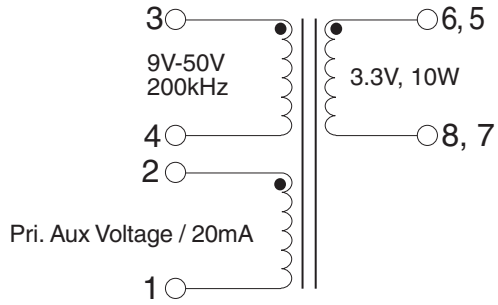

### PB2115




### PA1267




### PA1277NL, PA1370NL



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