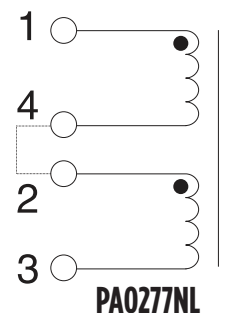
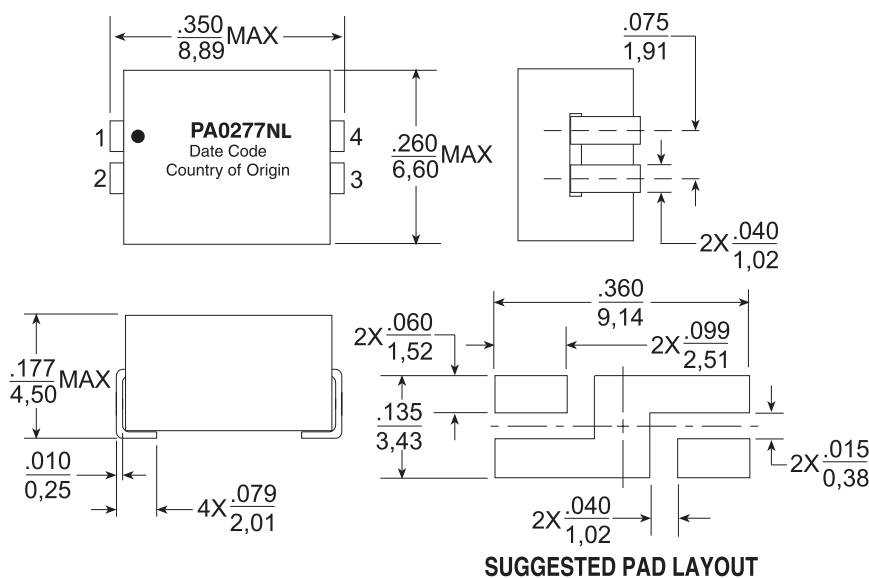
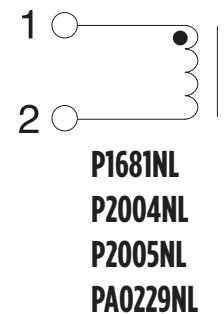
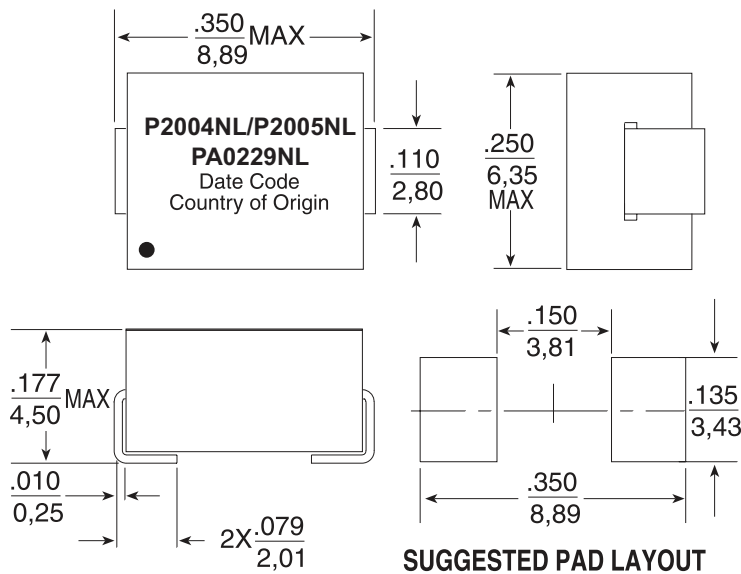


Mechanicals (continued)

Schematics

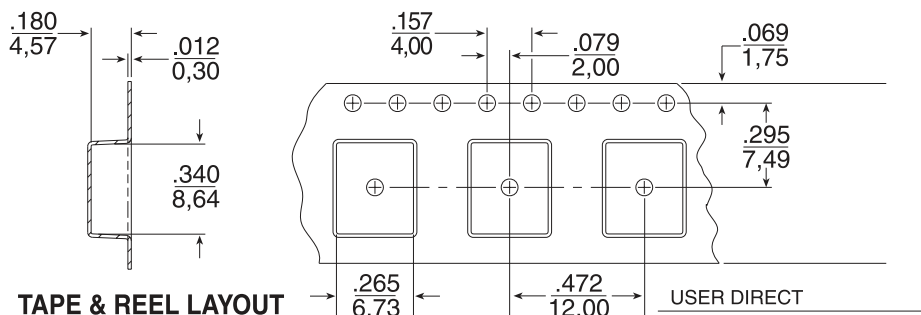
Volta 2



Weight0.945 grams
Tape & Reel1000/reel

Dimensions: $\frac{\text{Inches}}{\text{mm}}$

Unless otherwise specified,
all tolerances are $\pm \frac{.010}{0.25}$



SMT Power Inductors

Power Beads - Volta 1 & 2 series

Notes:

1. The rated current as listed is either the saturation current or the heating current depending on which value is lower.
2. The saturation current is the current which causes the inductance to drop by 10% at the stated ambient temperatures (-40°C, 25°C, 125°C). This current is determined by placing the component in the specified ambient environment and applying a short duration pulse current (to eliminate self-heating effects) to the component.
3. The heating current is the DC current which causes the temperature of the part to increase by approximately 30°C. This current is determined by mounting the component on a PCB with .25" wide, 3 oz. equivalent copper traces, and applying the current to the device for 30 minutes.
4. In high volt*time applications, additional heating in the component can occur due to core losses in the inductor which may necessitate derating the current in order to limit the temperature rise of the component. In order to determine the approximate total losses (or temperature rise) for a given application both copper losses and core losses should be taken into account.
5. Optional Tape & Reel packaging can be ordered by adding a "T" suffix to the part number, (i.e. PA0277NLT).

Estimated Temperature Rise:

$$Trise = \left[\frac{Coreloss (mW) + Copper Loss (mW)}{K0} \right]^{.833} (^\circ C)$$

$$Coreloss = K1 * (Fsw (kHz))^{1.6688} * (K2 * dl)^{2.17} (mW)$$

$$Copper Loss = Irms^2 * DCR (m\Omega) (mW)$$

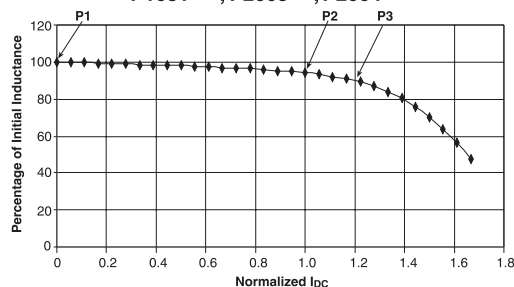
$$Irms = \left[IDC^2 + \left[\frac{dl}{12} \right]^2 \right]^{1/2} (Arms)$$

$$Fsw(kHz) = \text{switching frequency (kHz)}$$

$$dl = \text{delta l across the component (A)}$$

The temperature of the component (ambient temperature + temperature rise) should be within the listed operating temperature range.

Inductance vs Current Characteristics
P1681NLT, P2005NL, P2004NL



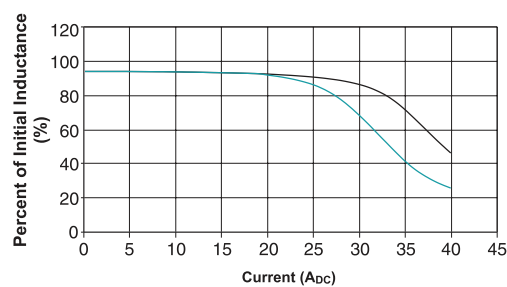
P1 - Initial Inductance, Lo (.1VRMS, 1MHz, 0Apc, 25°C)

P2 - Inductance (typically 95% Lo) at Rated Idc.

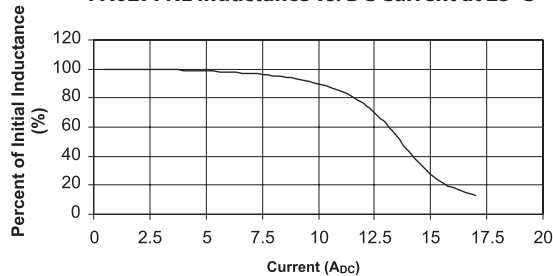
P3 - Inductance (typically 90% Lo) at Ipk.

— Normalized Inductance

PA0229NL Inductance vs. DC Current at 25°C



PA0277NL Inductance vs. DC Current at 25°C



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