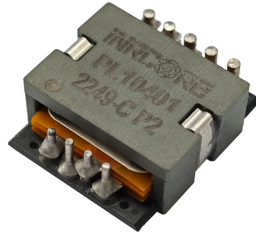


# HIGH FREQUENCY FLAT COIL PLANAR TRANSFORMER

Ruggedized



- ⊗ Power Rating: up to 300W
- ⊗ Height: 10.4mm to 11.9mm
- ⊗ Footprint: 29.5mm x 26.7mm MAX
- ⊗ Frequency Range: 200kHz to 700kHz MAX
- ⊗ Isolation (Primary to Secondary): 1750Vdc
- ⊗ Operating & Storage Temperature: -40°C to +125°C
- ⊗ Lead Finish: Sn63/Pb37
- ⊗ Moisture Sensitivity Level: 1

## Electrical Specifications @ 25°C

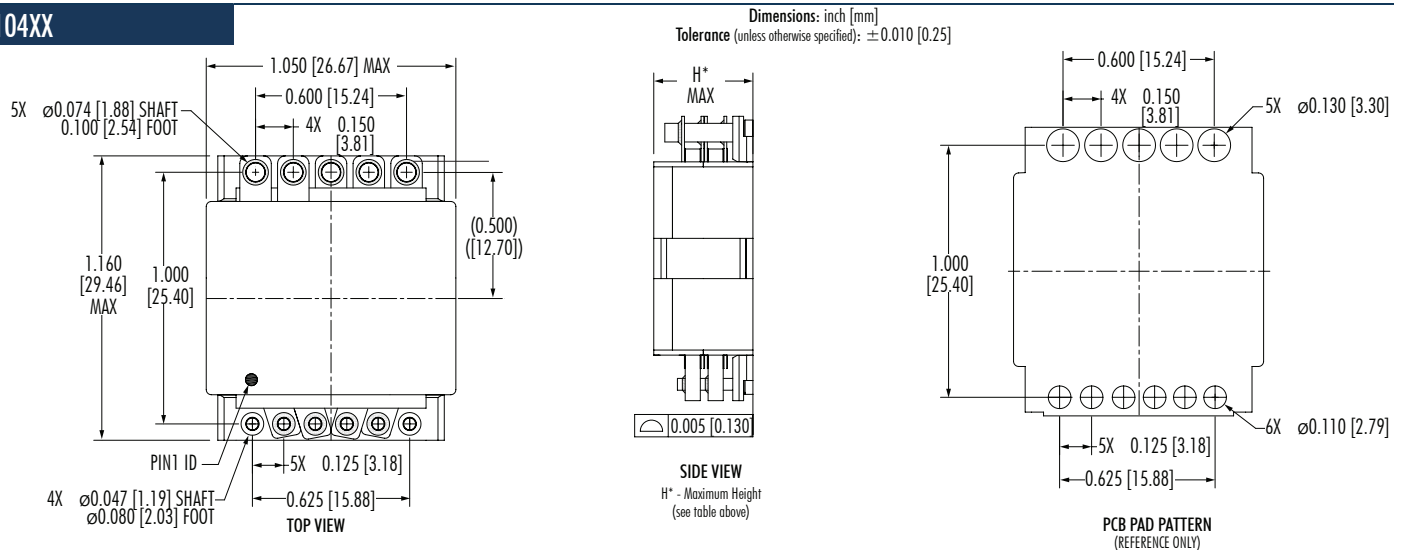
Part Number	Turns Ratio		Primary Inductance (μH MIN)	Leakage Inductance (μH MAX)	DCR (mΩ MAX)				Height (mm)
	Primary	Secondary			Primary A	Primary B	Primary Aux.	Secondary	
SCHEMATIC: A1									
PL10401	4T & 4T	4T (1T:1T:1T:1T)	211	0.30	6.8	6.8	-	4.5	10.4
PL10402	5T & 5T		330	0.45	8.5	8.5	-	4.5	10.4
PL10403	6T & 6T		423	0.60	10.2	10.2	-	4.5	11.9
PL10404	7T & 7T		588	0.83	11.8	11.8	-	4.5	11.9
PL10405	8T & 8T		768	1.20	13.4	13.4	-	4.5	11.9
SCHEMATIC: A2									
PL10406	4T & 4T	1T & 1T	216	0.45	6.8	6.8	-	0.56 & 0.56	10.4
PL10407	5T & 5T		340	0.84	8.5	8.5	-	0.56 & 0.56	10.4
PL10408	6T & 6T		480	1.00	10.2	10.2	-	0.56 & 0.56	11.9
PL10409	7T & 7T		660	1.20	11.8	11.8	-	0.56 & 0.56	11.9
PL10410	8T & 8T		860	1.70	13.4	13.4	-	0.56 & 0.56	11.9

### NOTES:

1. Add suffix "NL" for RoHS (Non-Lead) compliant version; i.e. PL10401 becomes **PL10401NL**.
2. For Tape & Reel packaging, add "T" suffix at the end of the part number: i.e. **PL10401T**.
3. Inductance is measured with primary windings connected in series (2 to 5, with 3 and 4 shorted).
4. Leakage inductance is measured on winding (2-5) with (3-4) and (7,8,9,10,11) shorted.
5. To determine if the transformer is suitable for your application, it is necessary to ensure that the temperature rise of the component (ambient plus temperature rise) not exceed it's operating temperature. To determine the approximate temperature rise of the transformer refer to the graphs below.

### Mechanicals

PL104XX



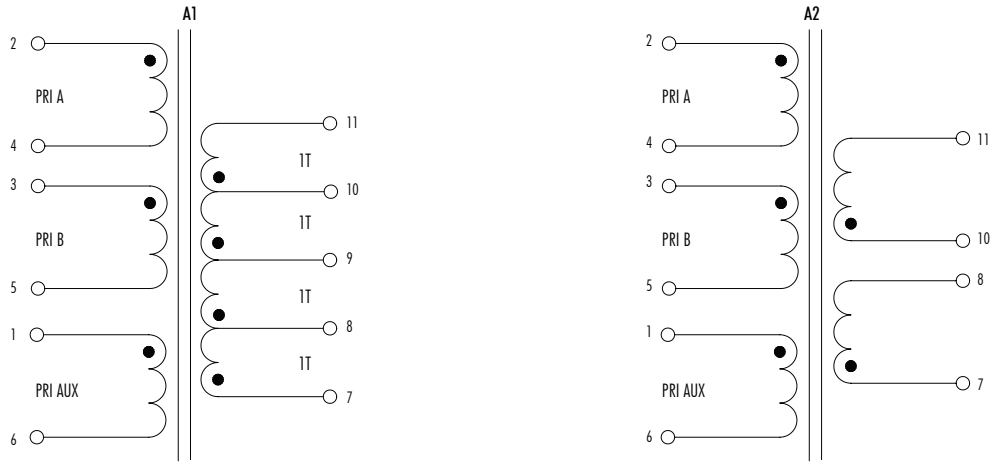
# HIGH FREQUENCY FLAT COIL PLANAR TRANSFORMER

Ruggedized

## Schematic

PL104XX

### DOUBLE INTERLEAVE SCHEMATICS



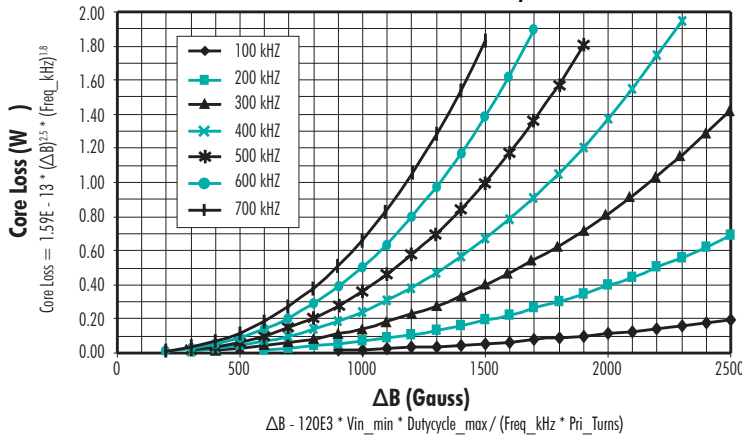
### NOTES:

- The above is a universal footprint for a component that has all 11 pins populated. For a given part number, it is only necessary to provide pads for the terminations shown.

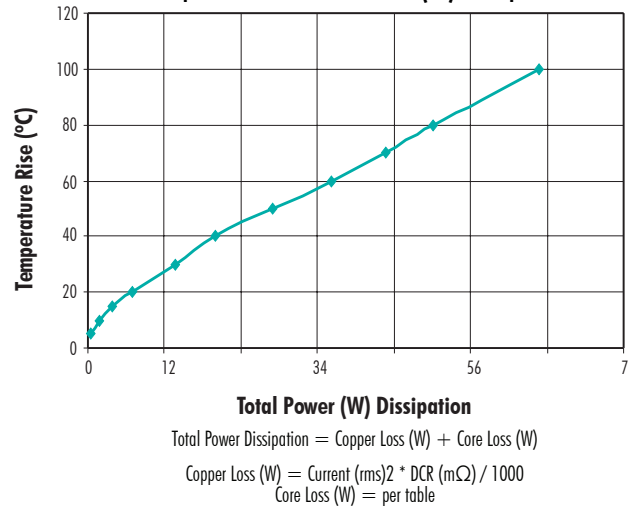
## Measurement Charts

PL104XX

### Core Loss vs. Flux Density



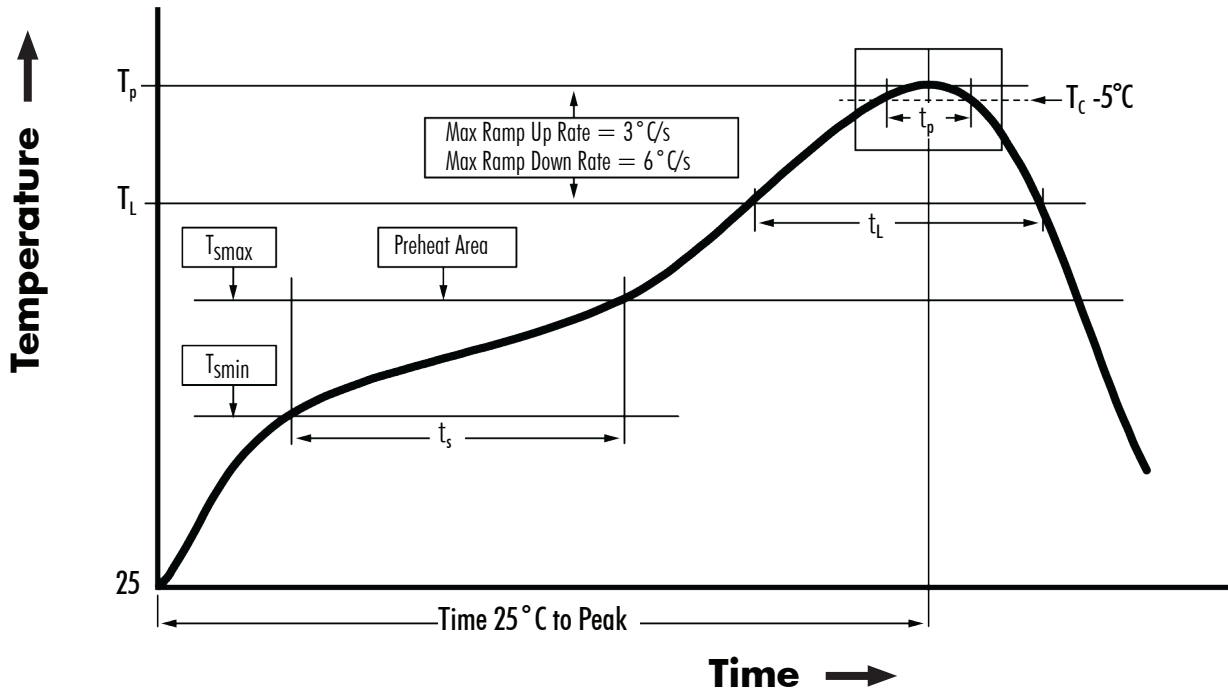
### Temperature Rise vs. Power (W) Dissipation



# HIGH FREQUENCY FLAT COIL PLANAR TRANSFORMER

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## Recommended Reflow Profile (Based on J-STD-020D)



$T_{SMIN}$ (°C)	$T_{SMAX}$ (°C)	$T_L$ (°C)	$T_P$ (°C MAX)	$t_s$ (s)	$t_L$ (s)	$t_p$ (s MAX)	Ramp-up rate ( $T_L$ to $T_P$ )	Ramp-down rate ( $T_P$ to $T_L$ )	Time 25°C to peak temperature (s MAX)
<b>Tin/Lead Profile</b>									
100	150	183	220	60 - 120	60 - 150	20	3°C/s MAX	6°C/s MAX	360
<b>Non-Lead Profile</b>									
150	200	217	245	60 - 120	60 - 150	30	3°C/s MAX	6°C/s MAX	480

### NOTES:

1. All temperatures measured on the package leads.
2. Maximum number of reflow cycles not to exceed 2.
3. Reflow cycle applies only to surface mount parts.



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