

Isolation Power Transformers

EE5 Platform SMD



YAGEO
PULSE GROUP



- Ⓢ Push Pull Converter Transformer
- Ⓢ Operational Insulation
- Ⓢ 1.5KVrms isolation (450Vpk rated voltage)
- Ⓢ 8.2mm x 6.8mm x 5.4mm Max
- Ⓢ Output: 1.0W max

Electrical Specifications @ 25°C - Operating Temperature -40°C to +125°C

Part Number	Inductance (1-3) (μH ±35%)	Leakage Inductance (1-3) with (4-6) shorted (μH MAX)	Capacitance (1, 2, 3) to (4, 5, 6) (pF MAX)	DCR (1-3) (Ω MAX)	DCR (4-6) (Ω MAX)	MAX (1-3) ¹ (V-μsec Max)	Turns Ratio (1:3) (6:4)	Isolated Voltage (Vrms)
PH9084.011NL	456	3.0	15	2.0	2.0	37	1CT : 1CT	1500
PH9084.034NL	256	3.0	15	1.6	2.0	28	3CT : 4CT	
PH9084.043NL	456	3.0	15	2.0	2.0	37	4CT : 3CT	
PH9084.021NL	456	3.0	15	2.0	1.2	37	2CT : 1CT	

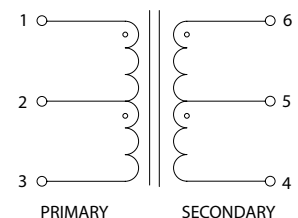
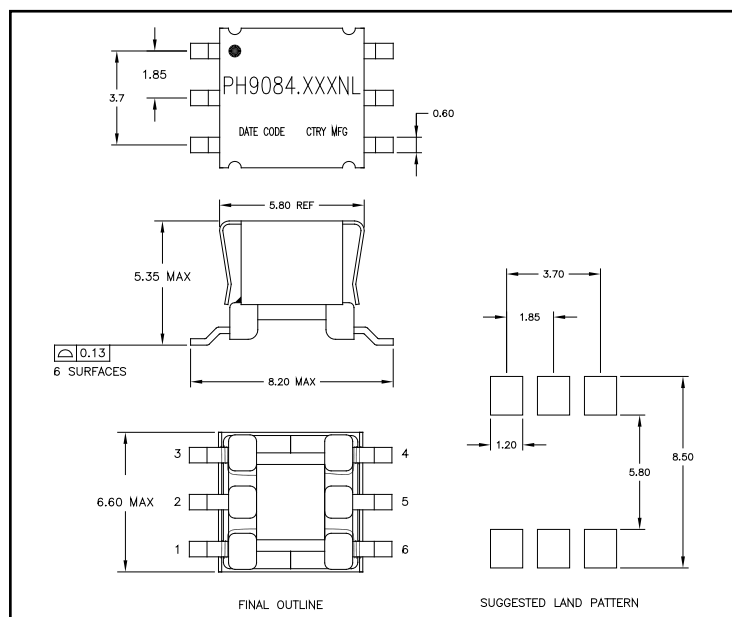
Notes:

- The ET Max is calculated to limit the core loss and temperature rise at 200KHz based on a bipolar flux swing of 180mT Peak.
- For Push-Pull topology, where the voltage is applied across half the primary winding turns, the ET needs to be derated by 50% for the same flux swing.
- The applied ET may need to be further derated for higher frequencies based on the temperature rise which results from the core and copper losses
 - To calculate total copper loss (W), use the following formula:
Copper Loss (W) = $I_{rms_Primary}^2 * DCR_Primary + I_{rms_Secondary}^2 * DCR_Secondary$
 - To calculate total core loss (W), use the following formula:
Core Loss (W) = $1.2E-12 * (Frequency\ in\ kHz)^{1.3} * (180 * [ET/ET\ Max])^{2.7}$
- Where ET is the applied Volt Second, ET Max is the rated Volt Second for 180mT flux swing
C. To calculate temperature rise, use the following formula:
Temperature Rise (°C) = $302 * (Core\ Loss(W) + Copper\ Loss(W))$
- Rated voltage is based on a positive partial discharge test (discharge < 10pC) during the design phase (not production tested) for a 450V repetitive peak voltage (Urp). The test condition was with an extinction voltage, U2 = 1.1* Urp, after an inception voltage, U1 = 1.25*U2.
- The "NL" suffix indicates an RoHS-compliant part number.

Mechanical

Schematic

PH9084.XXXNL



Weight0.37grams
Tape & Reel1000/reel
Tray120/tray

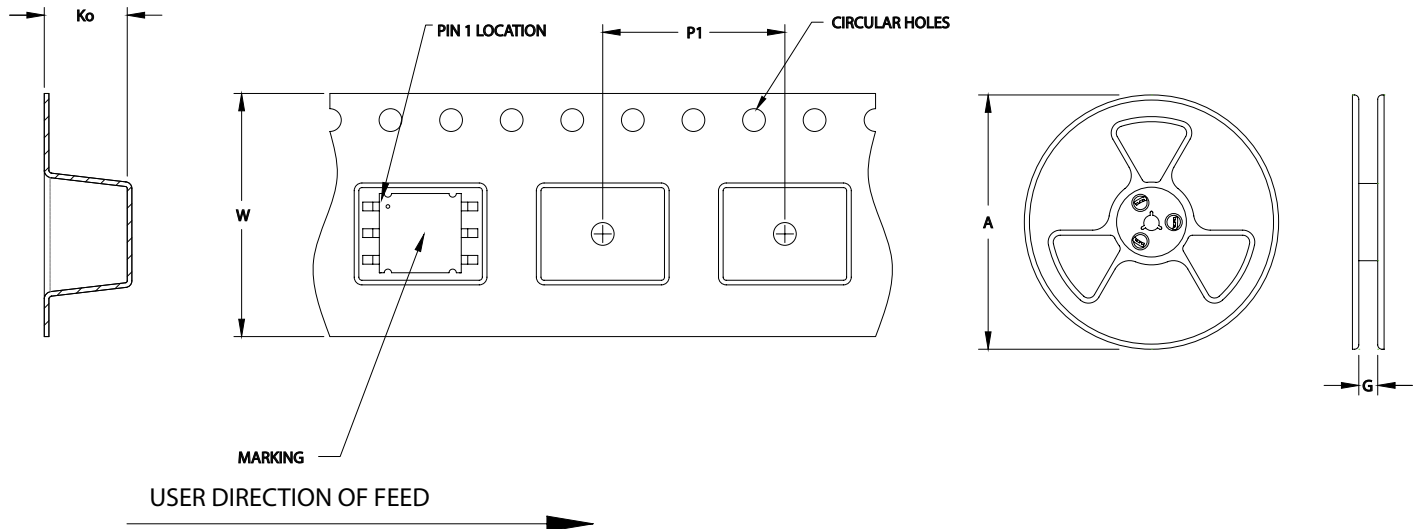
Dimensions: mm

Unless otherwise specified,
all tolerances are ±0.25

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TAPE & REEL INFO



SURFACE MOUNTING TYPE, REEL/TAPE LIST

PART NUMBER	REEL SIZE (mm)		TAPE SIZE (mm)			QTY
	A	G	P ₁	W	K ₀	PCS/REEL
PH9084.XXXNLT	330	16.4	12	16	5.3	1000

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