





THT CURRENT SENSE TRANSFORMERS



-  UL/C-UL recognized components
-  3000Vrms gate to drive winding test
-  Useful operating frequency from 50kHz to 500kHz
-  Most popular winding configurations

Electrical Specifications @ 25°C — Operating Temperature -40°C to 130°C

Part ⁶ Number	Turns Ratio	Primary Inductance (1-10) (mH MIN)	DCR Pri (1-10) (Ω MAX)	DCR Sec1 (3-7) (mΩ ±15%)	DCR Sec2 (4-8) (mΩ ±15%)	Hi-Pot (Pri-Sec) (Vrms)
P0581	200:1:1	76	2.8	1.7	1.7	3000
P0582	100:1:1	19	1.4	1.7	1.7	3000
P0583	50:1:1	5	0.7	1.7	1.7	3000

Additional Specifications

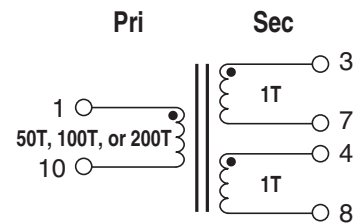
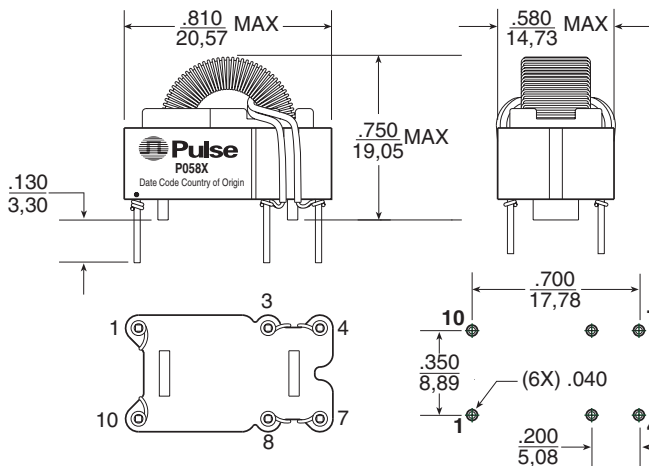
Part Number	Reference Data			Calculation Data		
	RT	I _{pk} (Amps)	Drop (%)	Max Flux Density	K _b	Req (mΩ)
P0581	200	34	1.00	2000	17.12	.9
P0582	100	35	1.98	2000	68.49	.8
P0583	15	36	1.19	2000	273.97	.75

- NOTES:**
- These current sense transformers have two one turn primaries that can be used in parallel. The listed current ratings are for parallel connection.
 - The reference values are for an application using the termination resistor (R_t) and operating with unipolar waveform at 100kHz, 40% duty cycle. The estimated temperature rise is 55°C.
 - The peak flux density should remain below 2100 Gauss to ensure that the core does not saturate. Use the following formula to calculate the peak flux density: $B_{pk} = K_b * I_{pk} * R_t * \text{don} / (F_f * \text{Freq. in kHz})$ where: R_t is the terminating resistor in the application and F_f is 1 for unipolar waveform and 2 for bipolar waveform

- To calculate the droop: Droop Exponent (D) = $R_t * \text{don} / (L_{pri} \text{ in mH} * \text{Freq. in kHz})$ %Droop = $(1 - e^{-D}) * 100$
- The temperature rise of the component is calculated based on the total core loss and copper loss:
 - To calculate total copper loss (W): $P_{(cu)} = I_{pk}^2 * R_{eq} * F_f * \text{don}$ where: F_f is 1 for unipolar waveform and 2 for bipolar waveform
 - To calculate total core loss (W): $P_{(core)} = 0.000073 * (\text{Freq. in kHz})^{1.67} * (B_{op} \text{ in kG})^{2.532}$ where: $B_{op} \text{ in kG} = K_b * I_{pk} * R_t * \text{don} / (2000 * \text{Freq. in kHz})$
 - To calculate temperature rise: Temperature Rise (C) = $60.18 * (\text{Core Loss (W)} + \text{Copper Loss (W)})^{.833}$
- To order RoHS compliant part, add the suffix "NL" to the part number (i.e. P0581 becomes P0581NL).

Mechanical

Schematic



Weight5 grams
Tray20/tray

Dimensions: $\frac{\text{Inches}}{\text{mm}}$
Unless otherwise specified, all tolerances are $\pm \frac{.010}{0.25}$

SUGGESTED PCB HOLE PATTERN

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