





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

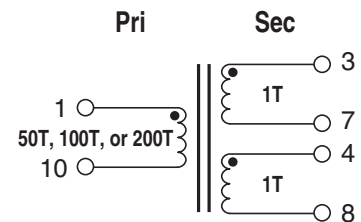
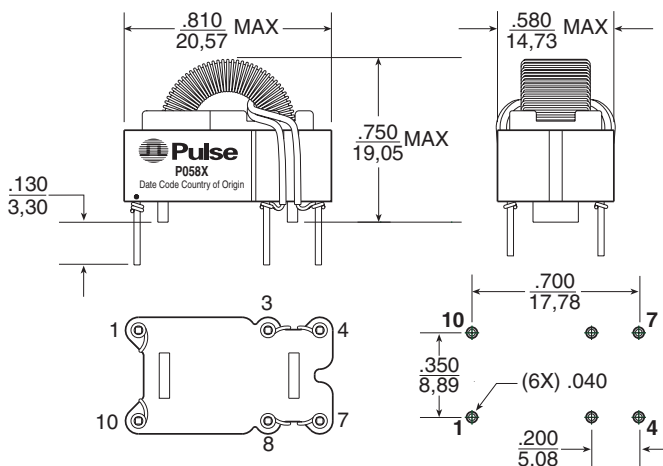
Additional Specifications

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 * don / (F_f * 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 * don / (L_{pri} in mH * 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 * Req * F_f * don where: F_f is 1 for unipolar waveform and 2 for bipolar waveform
 - To calculate total core loss (W): P_(core) = 0.000073 * (Freq. in kHz)^{1.67} * (Bop in kG)^{2.532} where: Bop in kG = K_b * I_{pk} * R_t * don / (2000 * Freq. in kHz)
 - To calculate temperature rise: Temperature Rise (C) = 60.18 * (Core Loss(W) + 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: Inches
mm
Unless otherwise specified, all tolerances are ± .010 / 0.25

SUGGESTED PCB HOLE PATTERN

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