THT CURRENT SENSE TRANSFORMERS

Pulse® A TECHNITROL COMPANY

- 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

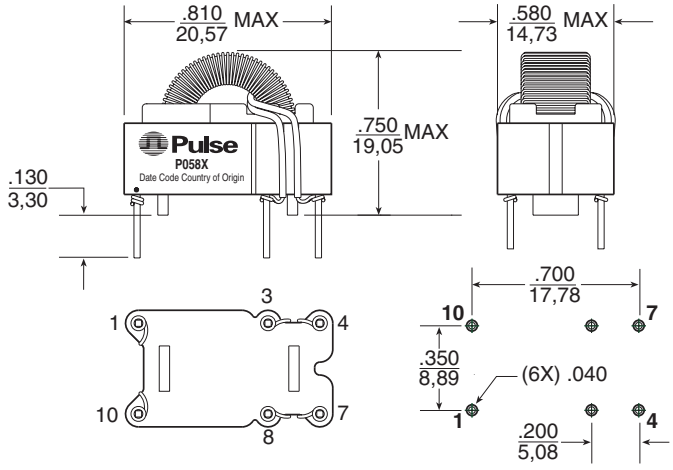
Part [6] Number	Turns Ratio	Primary Inductance (1-10) (mH MIN)	DCR Pri (1-10) (Ω MAX)	DCR Sec1 (3-7) (mΩ ±15%)	DCR Sec2 (4-8) (mΩ ±15%)	Hi-Pot (Pri-Sec) (Vrms)
P0581	200:1:1	76	2.8	1.7	1.7	3000
P0582	100:1:1	19	1.4	1.7	1.7	3000
P0583	50:1:1	5	0.7	1.7	1.7	3000

Additional Specifications

Part Number	Reference Data				Calculation Data	
	RT	Ipk (Amps)	Droop (%)	Max Flux Density	Kb	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

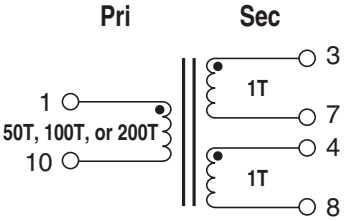
NOTES:
1. These current sense transformers have two one turn primaries that can be used in parallel. The listed current ratings are for parallel connection.
2. The reference values are for an application using the termination resistor (Rt) and operating with unipolar waveform at 100kHz, 40% duty cycle. The estimated temperature rise is 55°C.
3. 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: Bpk = Kb * Ipk * Rt * don/(Ff * Freq. in kHz) where: Rt is the terminating resistor in the application and Ff is 1 for unipolar waveform and 2 for bipolar waveform
4. To calculate the droop: Droop Exponent (D) = Rt * don/(Lpri in mH * Freq. in kHz) %Droop = $(1-e^{-D}) * 100$
5. The temperature rise of the component is calculated based on the total core loss and copper loss:
   A. To calculate total copper loss (W): $P(cu) = Ipk^2 * Req * Ff * don$ where: Ff is 1 for unipolar waveform and 2 for bipolar waveform
   B. To calculate total core loss (W): $P(core) = 0.000073 * (Freq.\ in\ kHz)^{1.67} * (Bop\ in\ kG)^{2.532}$ where: Bop in kG = Kb * Ipk * Rt * don/(2000 * Freq. in kHz)
   C. To calculate temperature rise: Temperature Rise (C) = 60.18 * (Core Loss(W) + Copper Loss (W))$^{.833}$
6. To order RoHS compliant part, add the suffix "**NL**" to the part number (i.e. P0581 becomes P0581**NL**).

Mechanical



SUGGESTED PCB HOLE PATTERN

Schematic



Weight . . . . . .5 grams
Tray 20/tray

Dimensions: Inches / mm

Unless otherwise specified, all tolerances are ± .010 / 0,25

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