





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

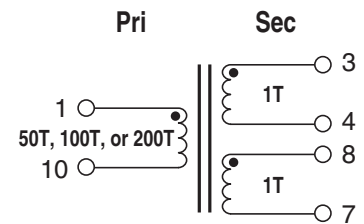
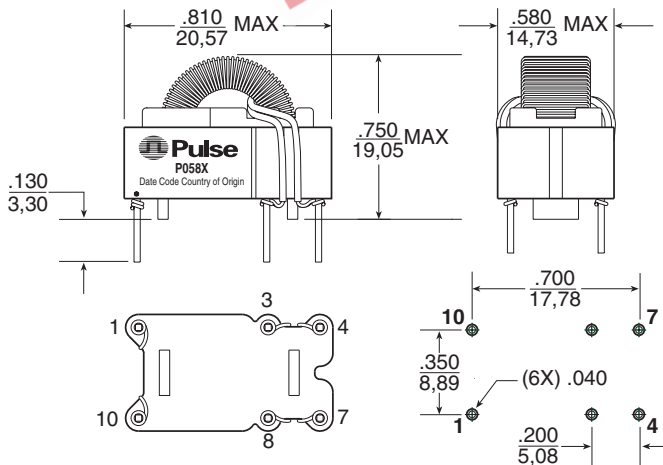
Additional Specifications

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

For More Information:

Pulse Worldwide Headquarters	Pulse Northern Europe	Pulse Southern Europe	Pulse China Headquarters	Pulse North China	Pulse South Asia	Pulse North Asia
12220 World Trade Drive San Diego, CA 92128 U.S.A. www.pulseeng.com TEL: 858 674 8100 FAX: 858 674 8262	3 Huxley Road Surrey Research Park Guildford, Surrey GU2 5RE United Kingdom TEL: 44 1483 401700 FAX: 44 1483 401701	Zone Industrielle F-39270 Orgelet France TEL: 33 3 84 35 04 04 FAX: 33 3 84 25 46 41	No. 1 Industrial District Changan, Dongguan China TEL: 86 769 85538070 FAX: 86 769 85538870	Room 1503 XinYin Building No. 888 YiShan Road Shanghai 200233 China TEL: 86 21 54643211/2 FAX: 86 21 54643210	150 Kampong Ampat #07-01/02 KA Centre Singapore 368324 TEL: 65 6287 8998 FAX: 65 6280 0080	No. 26 Kao Ching Road Yang Mei Chen Taoyuan Hsien Taiwan, R. O. C. TEL: 886 3 4641811 FAX: 886 3 4641911

Performance warranty of products offered on this data sheet is limited to the parameters specified. Data is subject to change without notice. Other brand and product names mentioned herein may be trademarks or registered trademarks of their respective owners.
© Copyright, 2006. Pulse Engineering, Inc. All rights reserved.