CT07 Series

Encapsulated THT Current Sense Transformers

- Current rating [2]: Up to 200 A_{RMS}
- ET product [3]: 6000 V-µs
- Frequency range [9-10]: 40 Hz to 3.2 kHz
- Isolation voltage: 3750 V_{AC}
- Nanocrystalline cores ensure high accuracy and lower core loss
- Encapsulated construction
- PCB mount

CUSTOM SOLUTIONS AVAILABLE

REACH COMPLIANT

RoHS COMPLIANT

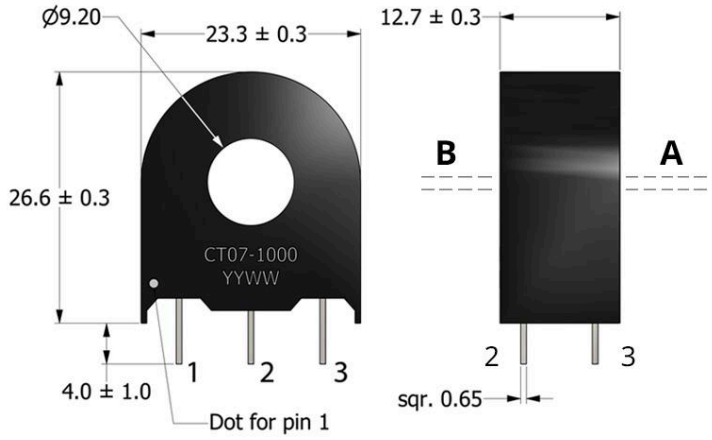
APPLICATIONS

- High-current monitoring
- Motor-drive sensing
- Low-frequency AC measurement
- Battery/UPS/inverter outputs
- Over-current protection
- Pulsed DC sensing

ELECTRICAL SPECIFICATIONS @ 25°C

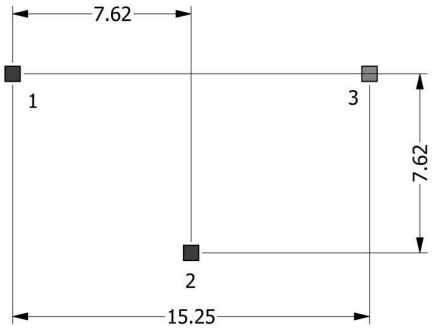
Part Number	Turns Ratio *(TR)*	Secondary Inductance [1] *(H, Min)*	Secondary DCR *(Ω, Max)*	Current Rating [2] *(A_{RMS}, Max)*	ET Product [3] *(V-µs, Max)*	Terminating Resistance *(Ω, Ref)*	Accuracy Range [10] *(kHz, Ref)*	SRF [11] *(kHz, Ref)*
CT07-1000	1 : 1000	8	26	200	6000	*See Note 4*	0.04 — 1.40	3.2

MECHANICAL DRAWING

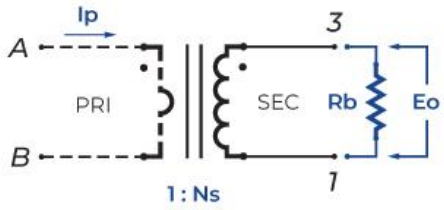


Note: All dimensions are in mm

RECOMMENDED PCB LAYOUT



SCHEMATIC



GENERAL DATA

Operating Temperature [5-6] (Class A)	-40°C to +105°C	Isolation Voltage (Hi-Pot) [8]	3750 V_{AC}
Storage Temperature [7]	-20°C to +60°C	Frequency Range [9-10]	40 Hz to 3.2 kHz
Environmental & Safety	REACH 253, RoHS	Flammability Rating	UL-94 V-0
Material Group	UL CTI 3		

Specifications subject to change without prior notice.

CT07 Series

Encapsulated THT Current Sense Transformers

1. **Secondary Inductance**: Tested @ 1 kHz, 1 V_{RMS}, Series.
2. **Current Rating:** The primary current rating is for reference only and is limited by the current capacity of the customer-supplied primary conductor
3. **ET Product:** The maximum ET is based upon a flux density of 5000 Gauss at 25°C. Suitable for bipolar applications only.

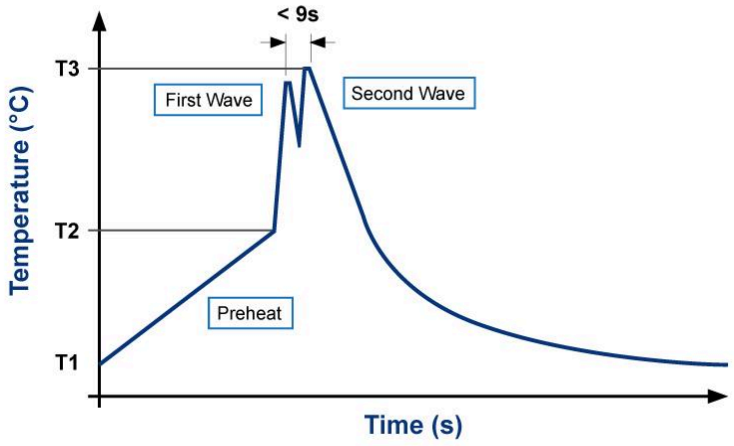
   $$ET = E_O/2f; \quad E_O = I_P R_B/TR$$

   Where: E_O = Output Voltage (V), f = Frequency (Hz), I_P = Primary Current (A), R_B = Terminating Resistor (Ω), TR = Turns Ratio
4. **Terminating Resistor (R_B):** To calculate the value use the formula, $R_B = E_O TR/I_P$

I_P	Terminating Resistor, R_B	E_O
10	140	1.4
20	70	1.4
50	28	1.4
100	14	1.4
150	8	1.2
200	6	1.2

5. **Operating Temperature:** The combination of ambient temperature and temperature rise.
6. **Material Rating:** Meets requirements for UL Class A temperature rating. Ambient + Temp. Rise + HotSpot Allowance < 105ºC.
7. **Storage Temperature:** Applies to parts removed from original packaging.
8. **Hi-Pot Rating**: Tested @ 60Hz, 1mA.
9. **Usable Frequency Range:** Effective detection bandwidth, extending beyond the SRF when appropriately burdened.
10. **Accuracy Range:** Optimized for precision current detection within the defined usable bandwidth. Contact ICE for specific questions about frequency ranges.
11. **Self-Resonant Frequency:** The value is for reference only.

WAVE SOLDERING PROFILE (Lead-Free)	
Max. Preheat Ramp Rate	1 - 4 °C/sec
Max. Preheat Temp. (T2)	80 -140 °C
Bottom Side Contact Time	< 9 sec
Cooling Rate	< 6 °C/sec
Time from T1 to T2	60 - 180 sec
Ambient Temperature (T1)	25 - 40 °C
Peak Wave Temp. (T3)	270 ± 5°C



PACKAGING	
Pieces/Tray	60
Trays/Box	9
Pieces/Box	540

COMPONENT LIBRARY	
AutoCAD 3D Model	SPICE Parameters
LTSpice	PSpice
Altium	Cadence
EagleCAD	

PCB Washing	See ICE Washability Information.
App Note	See Applying Current Sense Transformers in Isolated DC-DC Converters.
Webpage	See https://www.icecomponents.com/product/ct07-series/.

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