

# HCTC & HCTI Design Kit

## High Current Toroidal Inductors & Chokes

This new High Current Toroidal Inductor and Choke design kit is filled with Signal's most popular HCTI and HCTC values to make circuit design easier. The HCTI series are vertically oriented for optimization of PCB layout, have self-shielding for low magnetic flux radiation, have a distributed air gap for high energy storage, have high efficiency through reduced core loss, and operate down to lower temperatures compared to traditional laminated inductors. The HCTC series has vertical PCB header plate mounting and has a wide range of inductance and current ratings which provides optimal board layout. This allows cooler running power supplies to be incorporated into multiple applications.

### Compatibility Guide

Signal HCTC	Signal HCTI
HCTC-1-20	HCTI-10-20.0
HCTC-2.4-17	HCTI-18-17.2 HCTI-15-18.0 HCTI-12-19.1
HCTC-1.2-16	HCTI-22-16.4
HCTC-14-14.5	HCTI-27-15.6
HCTC-2.5-12.5	HCTI-33-11.7 HCTI-28-11.2
HCTC-1-10	HCTI-47-10.7 HCTI-56-10.2
HCTC-7.3-9.3	HCTI-56-10.2
HCTC-5-8.9	HCTI-100-7.7
HCTC-2-6.6	HCTI-120-6.7 HCTI-100-7.0
HCTC-8-5.6	HCTI-270-5.5 HCTI-220-5.8
HCTC-1-4.8	HCTI-180-4.8 HCTI-390-5.0 HCTI-150-5.0 HCTI-330-5.2
HCTC-12-4	HCTI-470-3.8
HCTC-5-3.7	HCTI-470-3.8 HCTI-560-3.6 HCTI-680-3.4
HCTC-20-2.9 HCTC-36-2.9	HCTI-680-3.4
HCTC-7-2.8	HCTI-820-2.6
HCTC-10-2.4 HCTC-2.5-2.4	HCTI-1000-2.4
HCTC-30-2.3 HCTC-50-2.3	HCTI-1000-2.4
HCTC-4-1.7	HCTI-1000-2.4

### Technical Specifications

#### HCTI

- » Vertical mounting for optimal board layout
- » High efficiency through reduced core loss
- » Self-shielding for low magnetic flux radiation
- » High current carrying capability
- » Inductance range: 10  $\mu$ H to 1000  $\mu$ H
- » DC resistance range: 0.005  $\Omega$  to 0.30  $\Omega$  Max
- » Inductance at rated current: 6.7  $\mu$ H to 593.6  $\mu$ H
- » Rated current range: 2.4 ADC to 20 ADC



#### HCTC

- » Vertical mount for less board space utilization
- » Fixed pin spacing for easy PCB insertion
- » Single layer wound coils
- » Operating temperature -55 to +105°C
- » DC rated current: 1.7 A to 20.0 A
- » Inductance: 1 mH to 50 mH
- » Dielectric strength: 1.500 V<sub>RMS</sub>
- » UL 94V-0 rated header



### Applications

- EMI/RFI Filtering for SMPS
- LCD Panels, Computers, Monitors
- DC-DC Converters
- EV Charging Power Supplies

### Industries

- Industrial
- Electronic
- Telecom
- Power
- Electric Vehicle (EV)



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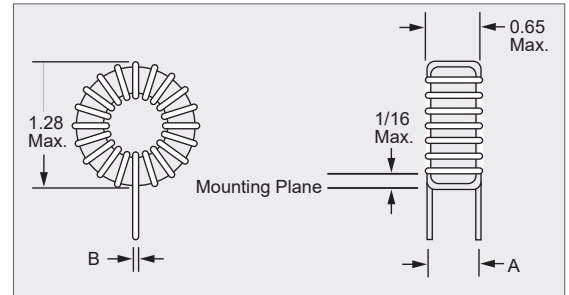
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# HCTC & HCTI Design Kit Datasheet

## Part Number Selection & Mechanical Specifications

### HCTI Series

Part Number	I-rated DC Current (A) (2)	L (μH) ±15% @ 1kHz	L (μH) ±15% @ I-rated	DC Resistance (Ω) Max	Dimensions	
					A Nominal	B Nominal
HCTI-1000-2.4	2.40	1000	593.6	0.300	0.53	0.027
HCTI-390-5.0	5.00	390	200.2	0.072	0.56	0.042
HCTI-150-5.0	5.00	150	101.4	0.071	0.51	0.034
HCTI-330-5.2	5.20	330	174.1	0.067	0.56	0.042
HCTI-270-5.5	5.50	270	147.2	0.060	0.56	0.042
HCTI-220-5.8	5.80	220	123.8	0.054	0.56	0.042
HCTI-100-7.0	7.00	100	63.1	0.037	0.52	0.042
HCTI-56-10.2	10.2	56	33.7	0.017	0.53	0.053
HCTI-22-16.4	16.4	22	13.2	0.007	0.56	0.066

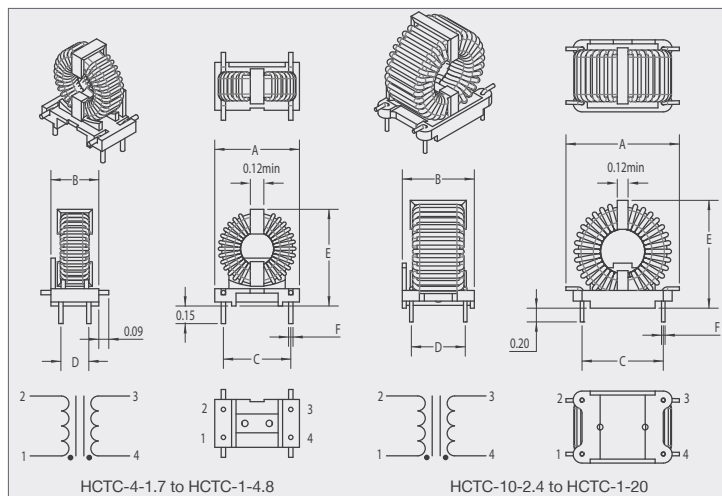


**Notes:**

1. Dimensions are in inches
2. Current causing 30°C max temperature rise
3. Operating Temperature Range of -55 to +105 °C
4. Leads tinned to within 1/16 of an inch above Mounting Plane
5. Lead Length of 0.50 inches

### HCTC Series

Part Number	I (A) Max. (2)	L (mH) Min @ 1kHz	L (μH) Typical Leakage	DC Resistance (Ω) Max.	Dimensions					
					A Max.	B ±0.010	C ±0.015	D ±0.015	E Max.	F Max.
HCTC-4-1.7	1.7	4	27	0.173	0.76	0.455 max	0.6	0.25	0.9	0.04
HCTC-1-4.8	4.8	1	7	0.022	0.76	0.455 max	0.6	0.25	0.9	0.04
HCTC-8-5.6	5.6	8	38	0.055	1.35	0.815	0.9	0.6	1.45	0.05
HCTC-2-6.6	6.6	2	9	0.022	1.2	0.606	0.8	0.4	1.2	0.05
HCTC-7.3-9.3	9.3	7.3	30.5	0.032	1.65	0.815	0.9	0.6	1.65	0.043
HCTC-1-10	10	1	4.5	0.010	1.2	0.606	0.8	0.4	1.2	0.05
HCTC-1.2-16	16	1.2	6	0.006	1.5	0.815	0.9	0.6	1.53	0.06



**Notes:**

1. Dimensions are in inches
2. Max. current based on 35°C temperature rise. Typ
3. Operating temperature range of -55° to +105°C
4. Dielectric Strength: 1,500 V<sub>RMS</sub>
5. UL 94V-0 rated coil mounting header



Custom versions available upon request.



128 Atlantic Avenue, Lynbrook, NY 11563  
 Toll Free 866-239-5777 | Tel 516-239-5777 | Fax 516-239-7208  
 sales@signaltransformer.com | techhelp@signaltransformer.com

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