CWT Mini

CWT MiniHF *NEW*

- New model featuring

- **A novel electrostatic shielded Rogowski coil** providing excellent immunity to interference from fast local dV/dt transients or large 50/60Hz voltages
- **Extended (-3dB) high frequency bandwidth** 30MHz for a 100mm coil
- **Peak di/dt** capability up to 100kA/µs
- **Wide operating temperature** from -40°C to +125°C
- **4.5mm thick Rogowski coil with 5kV peak insulation.**

Rogowski benefits

Both versions offer the advantages of a CWT Rogowski probe, including:

- simple to use and easy to insert into difficult to reach parts of the circuit
- practically zero insertion impedance
- freedom from flying leads
- isolated measurement
- peak-current ratings from 30A to 300kA
- ±6V into 1MΩ, and now with 50Ω drive capability

5kV CWT MiniHF coil through the legs of a T0-247 device

CWT Mini

- Improvements to the existing range

- **Extended (-3dB) low frequency bandwidth** typically less than 1Hz
- **Extended (-3dB) high frequency bandwidth** up to 20MHz for a 100mm coil
- **Improved peak di/dt** up to 40kA/µs
- **3.5mm thickness with 2kVpeak, and 4.5mm thickness with 5kVpeak insulation coils**

Applications

- Semiconductor switching waveforms (device loss)
- Measuring high frequency sinusoidal, pulsed or transient currents from power frequency to rf applications
- Power converter development and diagnostics for example:
  - MOSFET/IGBT devices as small as TO-247 or around the terminals of large power modules
  - monitoring currents in small inductors, capacitors, snubber circuits, etc
- Measuring small AC currents in the presence of large DC currents (e.g. monitoring capacitor ripple)
- Measuring current in motor drives and in particular power quality measurements in VSD, UPS or SMPS circuits

COSINUS® MESSTECHNIK GMBH

Cosinus Messtechik GmbH
Rotwandweg 4
82024 Taufkirchen

Tel. +49 89 66 55 94 10
Fax +49 89 66 55 94 40
mail office@cosinus.de
www.cosinus.de

Model	Sensitivity (mV/A)	Peak current*1 (kA)	Noise max*2 (mVp-p)	Droop (%/ms)	LF (-3dB) bandwidth (Hz)	Peak di/dt (kA/µs)	HF (-3dB) bandwidth*3 (MHz)	
							100mm	200mm
CWT MiniHF 015	200	0.03	15	85	150	2.0	30	23
CWT MiniHF 03	100	0.06	11	78	100	4.0	30	23
CWT MiniHF 06	50	0.12	8.0	70	75	8.0	30	23
CWT MiniHF 1	20	0.3	6.0	53	50	20	30	23
CWT Mini 1	20	0.3	12	4.5	4.8	2.5	20	15
CWT MiniHF 3	10	0.6	10	11	12	40	30	23
CWT Mini 3	10	0.6	10	2.0	2.3	5.0	20	15
CWT MiniHF 6	5.0	1.2	10	5.5	6.0	80	30	23
CWT Mini 6	5.0	1.2	10	0.8	0.9	10	20	15
CWT MiniHF 15	2.0	3.0	8.0	2.8	3.0	80	30	23
CWT Mini 15	2.0	3.0	8.0	0.4	0.5	25	20	15
CWT MiniHF 30	1.0	6.0	8.0	1.5	1.5	100	30	23
CWT Mini 30	1.0	6.0	7.0	0.25	0.3	40	20	15
CWT MiniHF 60	0.5	12.0	6.0	1.0	1.0	100	30	23
CWT Mini 60	0.5	12.0	5.0	0.2	0.2	40	20	15
CWT MiniHF 150	0.2	30.0	4.0	1.0	1.0	100	30	23
CWT Mini 150	0.2	30.0	5.0	0.1	0.1	40	20	15

**1. Higher current ratings are available, CWT300, Peak current 60kA, CWT600 Peak current 120kA , CWT1500 Peak current 300kA etc*
**2. Noise max. is the internally generated integrator noise which is at a maximum at LF(-3dB) bandwidth*
**3. The High Frequency HF(-3dB) is quoted for a 2.5m cable between coil and integrator*

Output
±6V peak corresponding to 'Peak Current' into ≥ 100kΩ (e.g. DC1MΩ oscilloscope)
±3V peak corresponding to 'Peak Current' into = 50Ω (for long cable runs > 2m)

Accuracy
Conductor position in the coil (for a 2mm² conductor) typically ±2% reading
Linearity (with current magnitude) 0.05% reading

Calibration
Calibrated to ±0.2% reading with conductor central in the coil loop

DC offset
±3mV at 25°C

Temperature

Coil and cable	-40°C to +125°C	- (CWT MiniHF)
Coil and cable	-20°C to +100°C	- (CWT Mini)
Integrator	0 to +40°C	

di/dt ratings
These are 'Absolute maximum di/dt ratings' and values must not be exceeded

Type	Abs. Max. peak di/dt	Abs. Max. rms di/dt
CWT MiniHF	100kA/µs	1.2kA/µs
CWT Mini	40kA/µs	1.0kA/µs

Coil length
100 or 200mm – longer coils available on request

Insulation
2kV peak (3.5mm thick coil - CWT Mini models ONLY)
5kV peak (4.5mm thick coil)

Cable length
1, 2.5 or 4m – length of cable from coil to electronics longer cables available on request

Power
Options:
B - Standard: 4 x AA 1.5V alkali batteries. Lifetime 25 hours. External adaptor disconnects batteries and power unit.
R - Rechargeable: 4 x AA 1.2V NiMH batteries. Lifetime 10 hours. External adaptor recharges batteries and powers unit.
External power adaptor - US, EURO, UK versions available

Generating the part code

Model		Power option		Cable length (m)		Cable length (mm)		Insulation (kV)
See table above		**B**-Battery **R**-Rechargeable		1, 2.5 or 4 (Custom lengths available)		100 or 200 (Custom lengths available)		2 (Not for HF) 5
CWT MiniHF 06	/	***R***	/	***2.5***	/	***100***	/	***5***

COSINUS MESSTECHNIK GMBH
Cosinus Messtechik GmbH
Rotwandweg 4
82024 Taufkirchen
Tel. +49 89 66 55 94 10
Fax +49 89 66 55 94 40
mail office@cosinus.de
www.cosinus.de