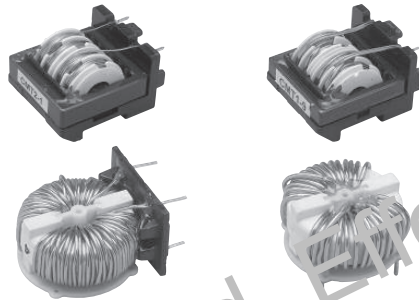


CMT

Common mode inductors, through-hole



Product description

- Four sizes of through-hole off-line common mode inductors
- Inductance range from 0.53 - 66 mH
- Current range up to 6.5 Amps
- Noise attenuation up to 68 dB
- Frequency range up to 6 MHz
- Meets UL94V-0 flammability standard
- Ferrite core material

Applications

- Protects AC input from effects of switching regulators
- Off-line power supplies
- EMI filters
- DC/DC converters
- Computer, TV, audio and office equipment

Environmental data

- Storage temperature range (component): -40°C to +125°C
- Operating temperature range: -40°C to +125°C (ambient + self-temperature rise).



Product specifications

| Part number | OCL (mH) minimum (1-2) | OCL (mH) minimum (4-3) | I rms. Amperes max | DCR (Ω) typ @ 20°C (1-2) | DCR (Ω) typ @ 20°C (4-3) |
|-------------|---------------------------|---------------------------|-----------------------|-----------------------------|-----------------------------|
| CMT1-1-R | 66.0 | 66.0 | 0.74 | 1.20 | 1.20 |
| CMT1-2-R | 49.0 | 49.0 | 0.88 | 0.85 | 0.85 |
| CMT1-3-R | 28.0 | 28.0 | 1.13 | 0.50 | 0.50 |
| CMT1-4-R | 21 | 21 | 1.37 | 0.35 | 0.35 |
| CMT1-5-R | 13 | 13 | 1.76 | 0.20 | 0.20 |
| CMT1-6-R | 7.50 | 7.50 | 2.27 | 0.13 | 0.13 |
| CMT1-7-R | 4.20 | 4.20 | 2.89 | 0.08 | 0.08 |
| CMT1-8-R | 2.40 | 2.40 | 3.85 | 0.045 | 0.045 |
| CMT1-9-R | 1.85 | 1.85 | 4.53 | 0.033 | 0.033 |
| CMT1-10-R | 0.94 | 0.94 | 6.05 | 0.018 | 0.018 |
| CMT2-1-R | 30 | 30 | 1.50 | 0.350 | 0.350 |
| CMT2-2-R | 20 | 20 | 1.95 | 0.220 | 0.220 |
| CMT2-3-R | 12 | 12 | 2.45 | 0.135 | 0.135 |
| CMT2-4-R | 8.0 | 8.0 | 2.8 | 0.100 | 0.100 |
| CMT2-5-R | 6.0 | 6.0 | 3.40 | 0.070 | 0.070 |
| CMT2-6-R | 4.8 | 4.8 | 3.95 | 0.053 | 0.053 |
| CMT2-7-R | 3.2 | 3.2 | 4.40 | 0.042 | 0.042 |
| CMT2-8-R | 2.4 | 2.4 | 4.75 | 0.037 | 0.037 |
| CMT2-9-R | 2.0 | 2.0 | 5.4 | 0.028 | 0.028 |
| CMT2-10-R | 1.6 | 1.6 | 5.75 | 0.026 | 0.026 |
| CMT3-1-R | 5.4 | 5.4 | 2.0 | 0.12 | 0.12 |
| CMT3-2-R | 3.5 | 3.5 | 2.6 | 0.08 | 0.08 |
| CMT3-3-R | 2.7 | 2.7 | 3.0 | 0.055 | 0.055 |
| CMT3-4-R | 1.3 | 1.3 | 4.0 | 0.032 | 0.032 |
| CMT3-5-R | 0.92 | 0.92 | 5.0 | 0.021 | 0.021 |
| CMT3-6-R | 0.53 | 0.53 | 6.5 | 0.013 | 0.013 |
| CMT4-1-R | 5.4 | 5.4 | 2.0 | 0.12 | 0.12 |
| CMT4-2-R | 3.5 | 3.5 | 2.6 | 0.08 | 0.08 |
| CMT4-3-R | 2.7 | 2.7 | 3.0 | 0.055 | 0.055 |
| CMT4-4-R | 1.3 | 1.3 | 4.0 | 0.032 | 0.032 |
| CMT4-5-R | 0.92 | 0.92 | 5.0 | 0.021 | 0.021 |
| CMT4-6-R | 0.53 | 0.53 | 6.5 | 0.013 | 0.013 |

Definitions:

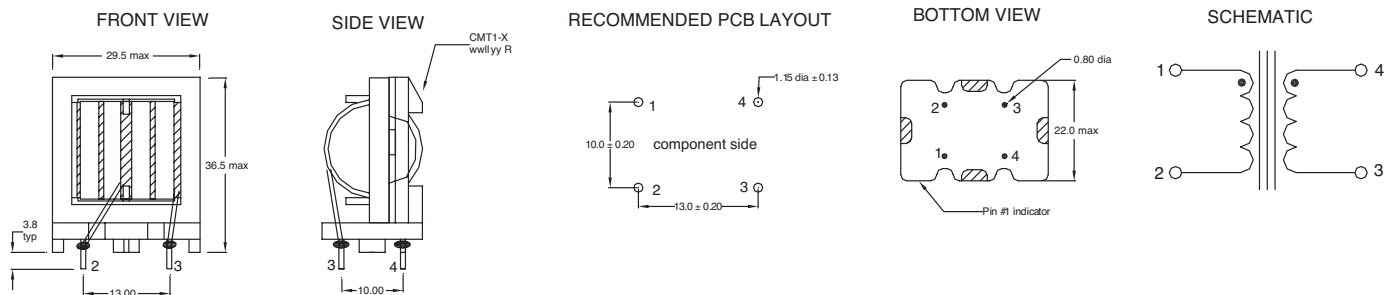
OCL = Open Circuit Inductance
DCR = Direct Current Resistance
I_{rms} = rms current for 40°C max temperature rise at worst case ambient temperature of 85°C.

Electrical Characteristics:

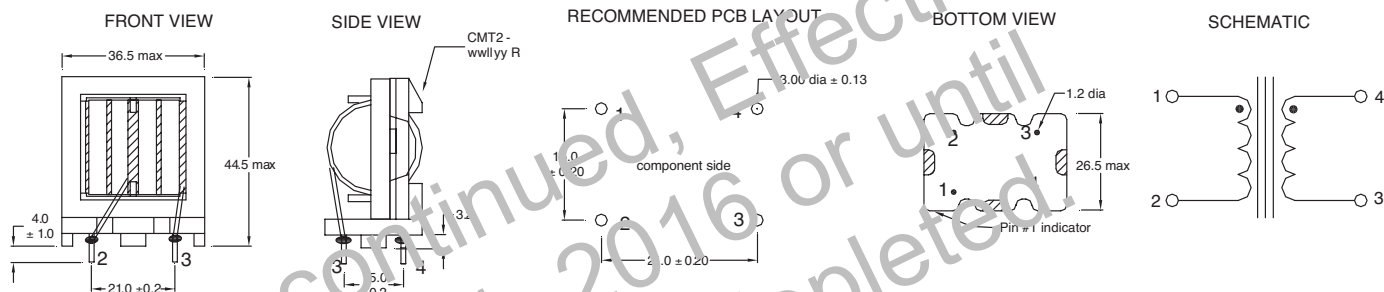
OCL (1-2) 0.10Vrms, 10kHz, 0.0Adc: (See Chart)
OCL (4-3) 0.10Vrms, 10kHz, 0.0Adc: (See Chart)
DCR (1-2) typ @ 20°C: (See Chart)
DCR (4-3) typ @ 20°C: (See Chart)
Hipot rating: winding to winding: 2400 Vac for 1 second. Turns Ratio: (1-2):(4-3) 1:1

Dimensions—mm

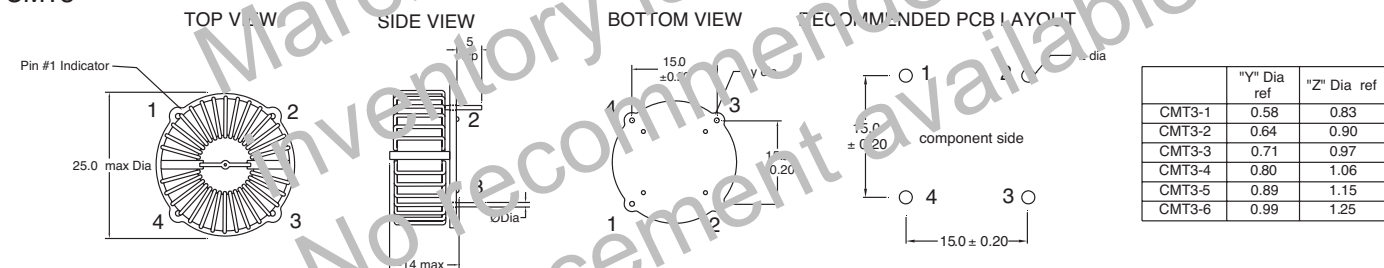
CMT1



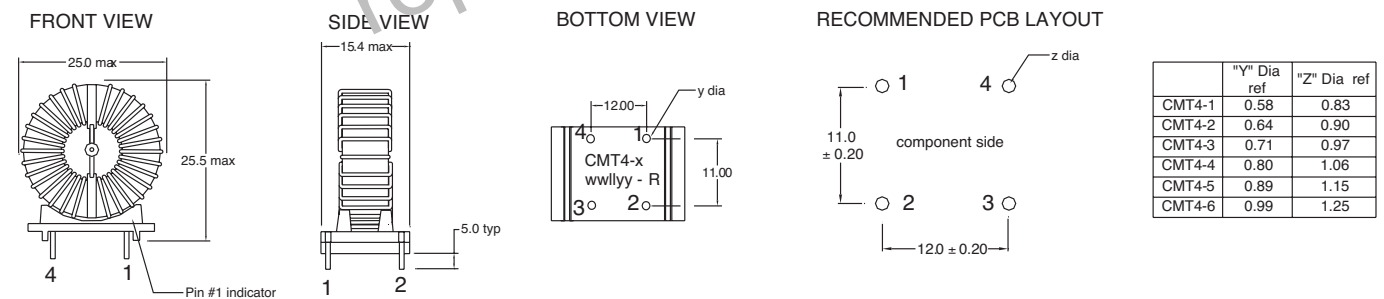
CMT2



CMT3



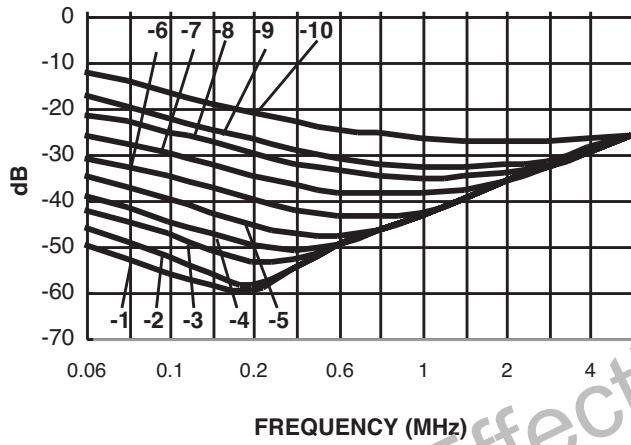
CMT4



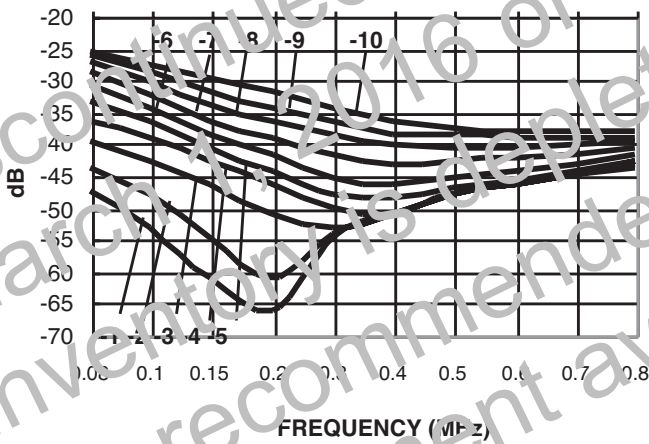
(1) All Dimensions are in millimeters unless otherwise specified
 (2) Tolerances are +/- 0.20mm unless stated otherwise.
 (3) wwlyy = (Date Code) R = (Revision Level)
 Schematic is the same for all the series

Attenuation Curves

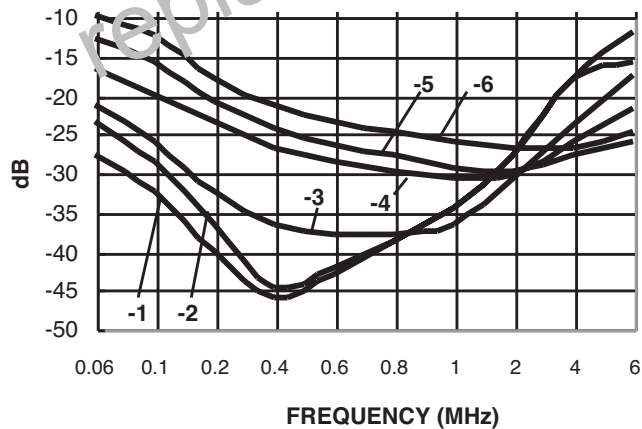
Attenuation CMT1



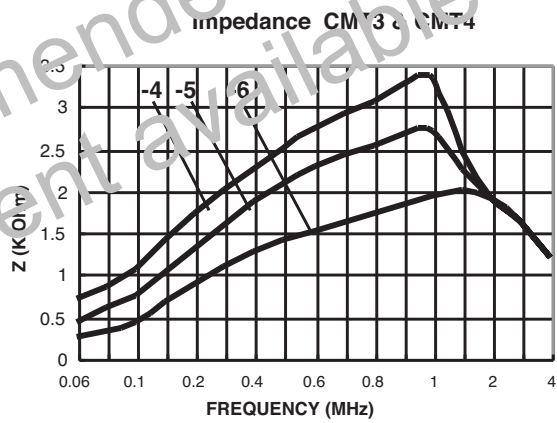
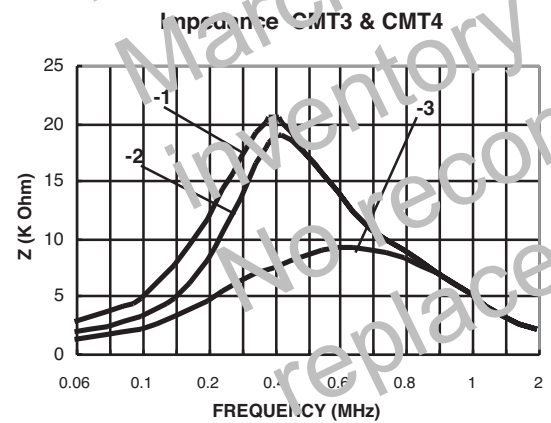
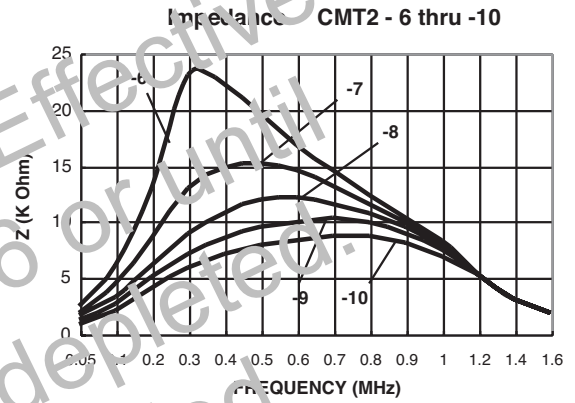
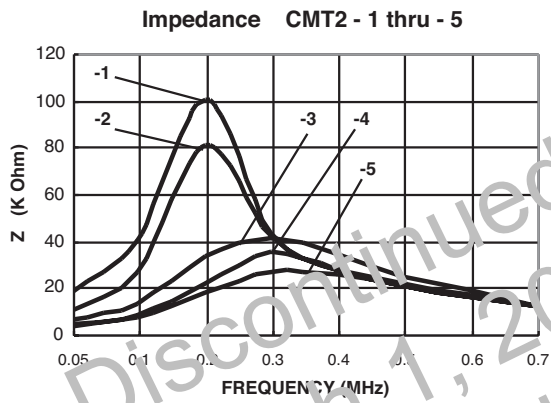
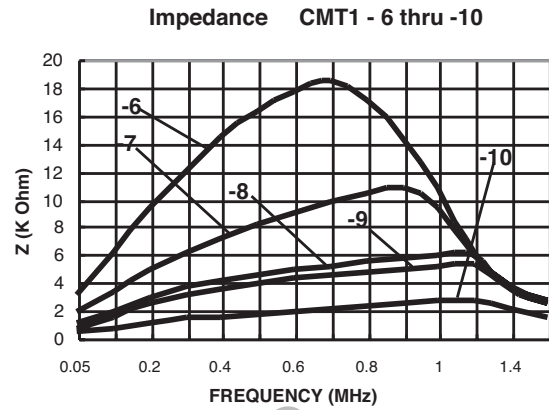
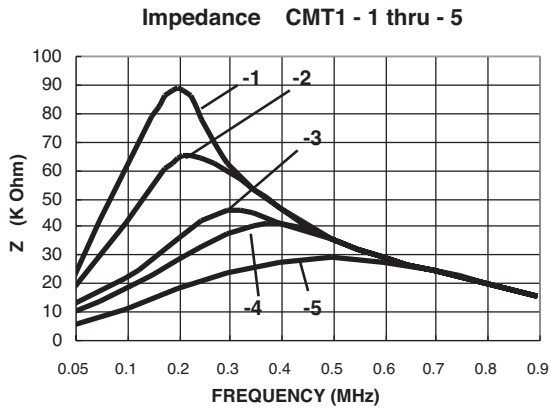
Attenuation CMT2



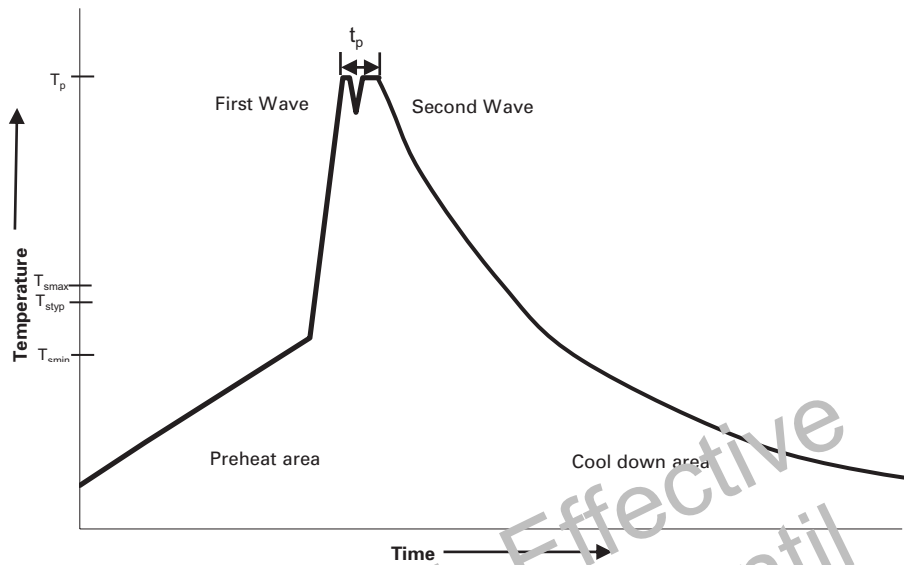
Attenuation CMT3 & CMT4



Impedance Curves



Wave solder profile



Reference EN 61760-1:2006

| Profile Feature | Standard 60SnPb Solder | Lead (Pb) Free Solder |
|---|---|---|
| Preheat | | |
| • Temperature min. (T_{smin}) | 100°C | 100°C |
| • Temperature typ. (T_{styp}) | 120°C | 120°C |
| • Temperature max. (T_{smax}) | 130°C | 130°C |
| • Time (T_{smin} to T_{smax}) (t_s) | 70 seconds | 70 seconds |
| Δ preheat to max Temperature | 150°C max. | 150°C max. |
| Peak temperature (T_p)* | 235°C - 260°C | 230°C - 260°C |
| Time at peak temperature (t_p) | 10 seconds max 5 seconds max each wave | 10 seconds max 5 seconds max each wave |
| Ramp-down rate | ~ 2 K/s min ~3.5 K/s typ ~5 K/s max | ~ 2 K/s min ~3.5 K/s typ ~5 K/s max |
| Time 25°C to 25°C | 4 minutes | 4 minutes |

Manual solder

350°C, 4-5 seconds. (by soldering iron), generally manual, hand soldering is not recommended.

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