

Coupled inductor – CH5090

Special Features:

- Suitable for On-Board charger applications up 7.4 kW
- Grid frequency: 50/60 Hz
- Switching frequency: 50 kHz – 140 kHz
- Compliance:
 - EN 61558-1:2019
 - IEC 62109-1:2010
- Integrated cooling path
- Low profile
- Operating ambient temperature: -25°C to 50°C

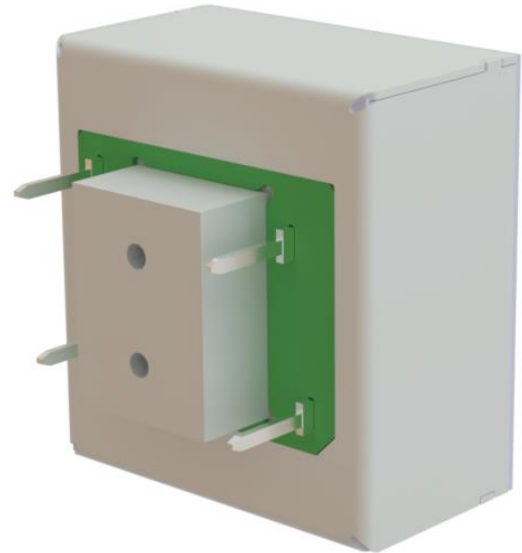


Figure 1. General view

Typical Applications:

- On-board chargers
- PFC converters
- AC/DC and DC/AC converters
- Interleaved boost converters

For samples or custom solutions please contact directly:
inquiry@sma-magnetics.com

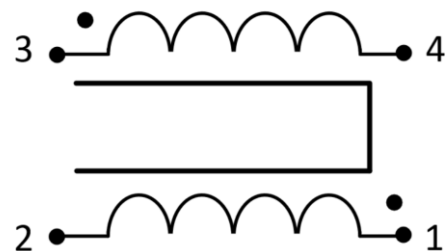


Figure 2. Electrical circuit



Parameter description	Parameter	Comment
Circuits	Connections are provided in Błąd! Nie można odnaleźć źródła odwołania..	
Rated frequency	$f = 50..60 \text{ Hz}$	
Switching frequency	$f_{sw} = 50..120 \text{ kHz}$	
No load output voltage	$L_m = 38 \mu\text{H} \pm 10\%$ $L_{s1-2} = 28.5 \mu\text{H} \pm 6\% @21\text{A}$ $L_{s3-4} = 28.5 \mu\text{H} \pm 6\% @21\text{A}$	Routine test 1V, 120kHz, sine voltage
Rated output current	$I_{1-2} = 14 \text{ A}_{RMS}$ $I_{3-4} = 14 \text{ A}_{RMS}$	
DC resistance	$R_{1-2} \leq 4.8 \text{ m}\Omega$ $R_{3-4} \leq 4.7 \text{ m}\Omega$	Routine test given values are valid for 20°C (resistance temperature coefficient: 0.00393 1/K)
Ambient temperature range	$t_a = -25^\circ\text{C}$ to $+50^\circ\text{C}$	
Insulation class	B (130°C)	

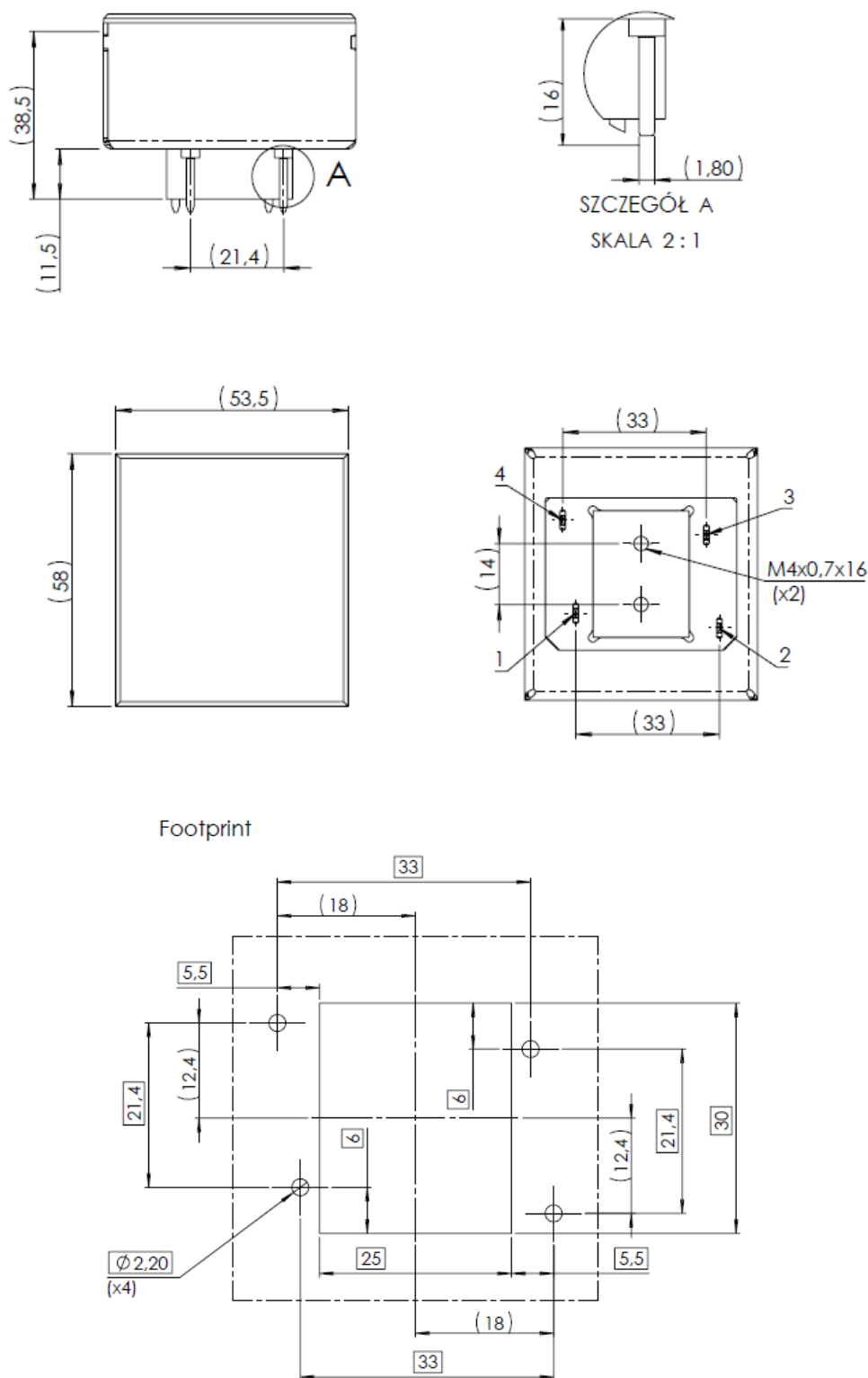


Figure 3. Coupled inductor dimensions in mm

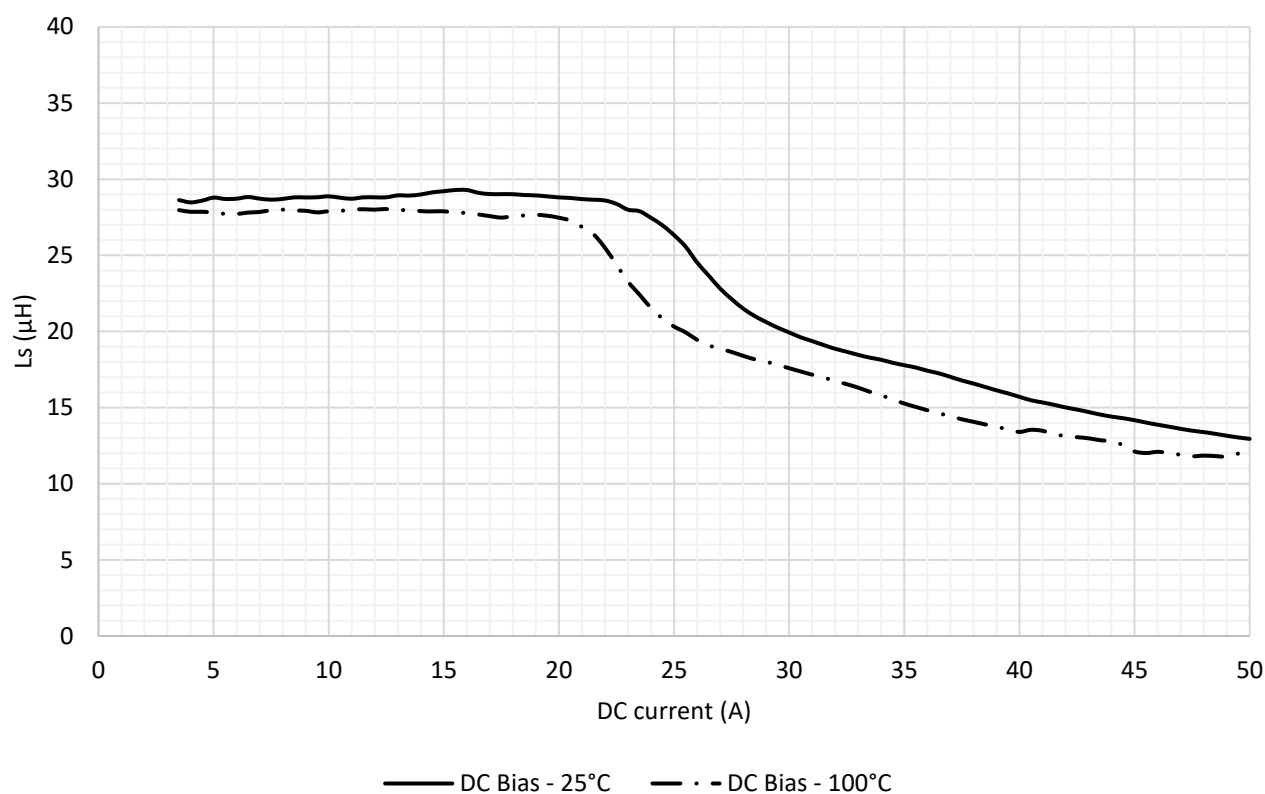


Figure 4. DC bias characteristics of leakage inductance at T = 25°C and T = 100°C