

## DC choke module with 3x DC chokes – CH3723

### Special Features:

- Nominal inductance: 440  $\mu$ H
- Nominal current, RMS: 24 A
- Modulation frequency: 10 - 24 kHz
- Compliance:
  - IEC 62109-1:2010
  - UL62109-1:2014
  - EN 61558-1:2019
  - RoHS and REACH
- Low profile
- Operating ambient temperature: -25°C to 60°C
- Built in EMC filtering

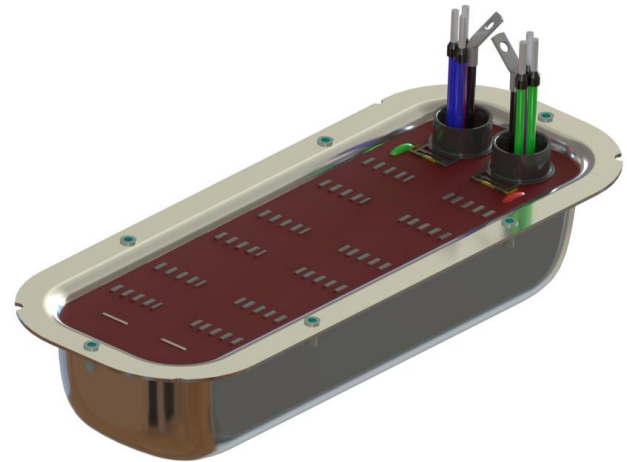


Figure 1. General view

### Typical Applications:

- PV inverters
- DC/AC converter
- Grid connected converters

For samples or custom solutions please contact directly:  
[inquiry@sma-magnetics.com](mailto:inquiry@sma-magnetics.com)

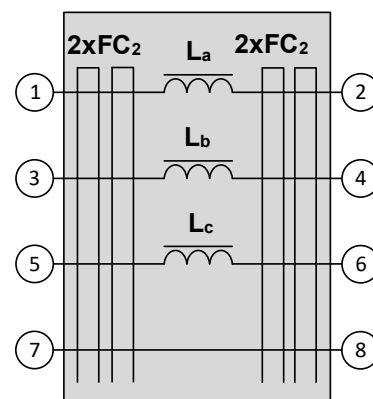


Figure 2. Electrical circuit



| Parameter description                  | Parameter                                                                                                                            | Comment                                                                                         |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| Circuits                               | Circuit terminals are shown in Figure 2.                                                                                             |                                                                                                 |
| Initial inductance                     | $L_{P1-2}, L_{P3-4}, L_{P5-6} = L_P \geq 550 \mu H$                                                                                  | Routine test<br>@0.3 V, 10 kHz, sine voltage                                                    |
| Inductance at rated current            | $L_P \geq 460 \mu H @ I = 24 A$                                                                                                      | Type test<br>@ $T_{core} = 100 ^\circ C$ ;<br>Power Choke Tester, e.g. ed-k @100 V              |
| Rated current, DC                      | $I_L = 24 A$                                                                                                                         |                                                                                                 |
| Max. input dc Voltage                  | $V_{DC MAX} = 1000 V$                                                                                                                | Maximum DC link voltage                                                                         |
| Equivalent parallel resistance         | $R_{LP1-2} \geq 2.9 k\Omega$<br>$R_{LP3-4} \geq 3.1 k\Omega$<br>$R_{LP5-6} \geq 2.9 k\Omega$                                         | Routine test<br>@0.3 V, 10 kHz, sine voltage                                                    |
| DC Winding Resistance<br>(@20°C)       | $R_{DC1-2} \leq 21.6 m\Omega$<br>$R_{DC3-4} \leq 22.1 m\Omega$<br>$R_{DC5-6} \leq 22.9 m\Omega$                                      | Routine test, given values are valid for 20°C<br>(resistance temperature coefficient 0.004 1/K) |
| Dielectric strength                    | All potentials against housing<br>1500 V <sub>AC</sub> @50 Hz for 1 sec.                                                             | Routine test<br>UL62109-1 chapter 7.5.2.2                                                       |
| Rated ambient temperature              | $T_a = -25 ^\circ C$ to $+60 ^\circ C$                                                                                               | System should provide power derating to<br>prevent exceeding 110 °C on windings surface         |
| Insulation class                       | B (130 °C)                                                                                                                           |                                                                                                 |
| Insulation distance                    | minimum clearance: 4.0 mm<br>minimum creepage distance: 7.1 mm (mat. group II)<br>minimum creepage distance: 10 mm (mat. group IIIa) | For life parts against aluminum housing                                                         |
| Frequency response - typical<br>values | $R_P = 29.7 k\Omega$<br>$L_P = 533.6 \mu H$<br>$C_P = 73.8 pF$<br>$f_r = 802.4 kHz$                                                  | Parallel RLC circuit                                                                            |

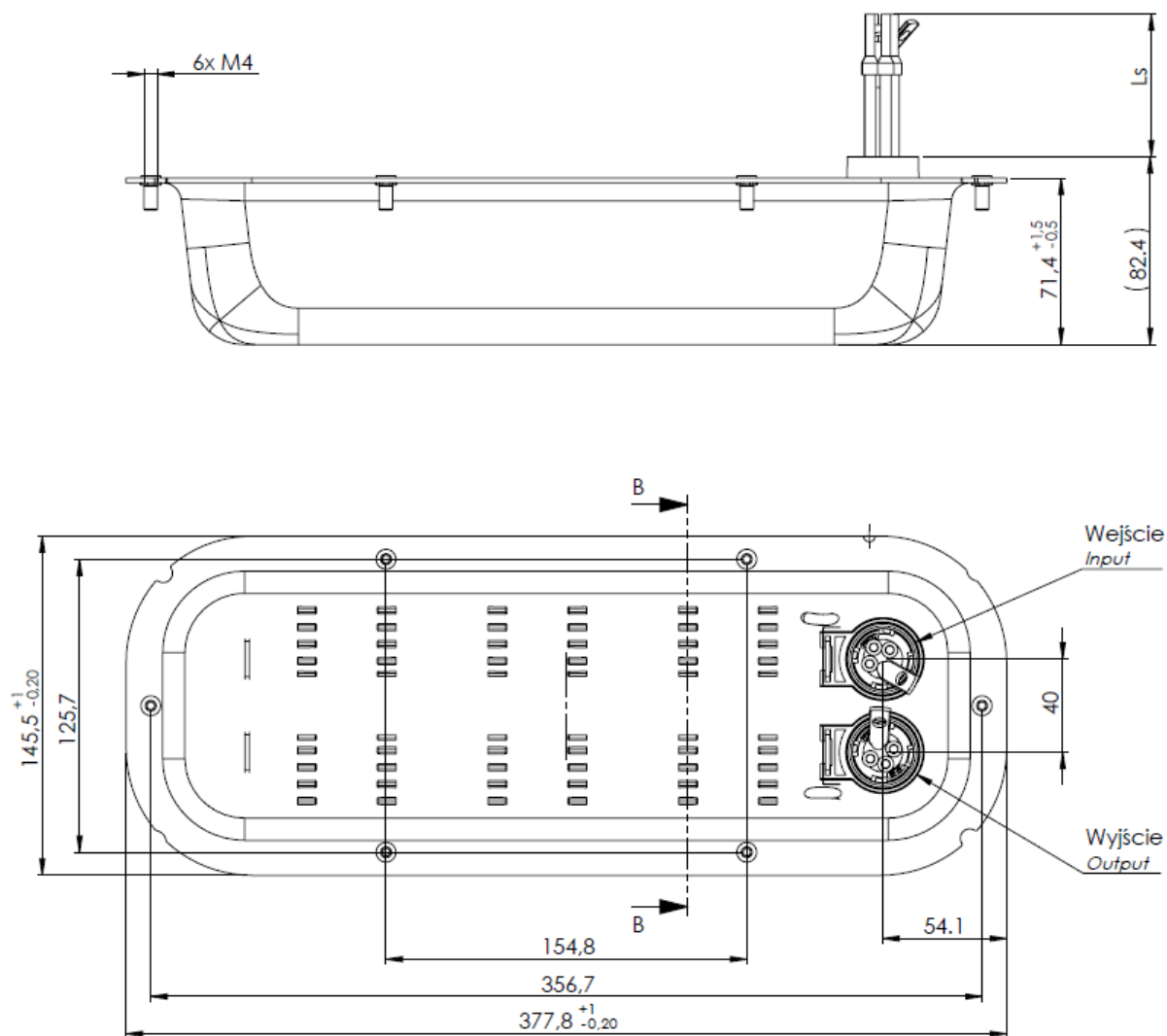


Figure 3. Choke block dimensions in mm

Table 1. Terminals description.

| Cable breakthrough<br>(Figure 3) | Ref. circuit<br>terminal<br>(Błąd! Nie<br>żna odnaleźć<br>a odwołania. 2) | Cable cross<br>section | Cable length<br>Ls | Cable colour | Terminal end                                 |
|----------------------------------|---------------------------------------------------------------------------|------------------------|--------------------|--------------|----------------------------------------------|
| Input                            | 1                                                                         | 6 mm <sup>2</sup>      | 160 ± 20 mm        | RD           | Insulated ferrule 6 mm <sup>2</sup> / 18 mm, |
|                                  | 3                                                                         | 6 mm <sup>2</sup>      | 160 ± 20 mm        | BU           | Insulated ferrule 6 mm <sup>2</sup> / 18 mm, |
|                                  | 5                                                                         | 6 mm <sup>2</sup>      | 160 ± 20 mm        | WH           | Insulated ferrule 6 mm <sup>2</sup> / 18 mm, |
|                                  | 7                                                                         | 10 mm <sup>2</sup>     | 130 ± 20 mm        | BK           | Cable lug 10 mm <sup>2</sup> / M6, 45°,      |
| Output                           | 2                                                                         | 6 mm <sup>2</sup>      | 240 ± 20 mm        | GN           | Insulated ferrule 6 mm <sup>2</sup> / 18 mm, |
|                                  | 4                                                                         | 6 mm <sup>2</sup>      | 220 ± 20 mm        | VT           | Insulated ferrule 6 mm <sup>2</sup> / 18 mm, |
|                                  | 6                                                                         | 6 mm <sup>2</sup>      | 270 ± 20 mm        | GY           | Insulated ferrule 6 mm <sup>2</sup> / 18 mm, |

|  |   |                    |             |    |                                         |
|--|---|--------------------|-------------|----|-----------------------------------------|
|  | 8 | 10 mm <sup>2</sup> | 190 ± 20 mm | BK | Cable lug 10 mm <sup>2</sup> / M6, 45°, |
|--|---|--------------------|-------------|----|-----------------------------------------|

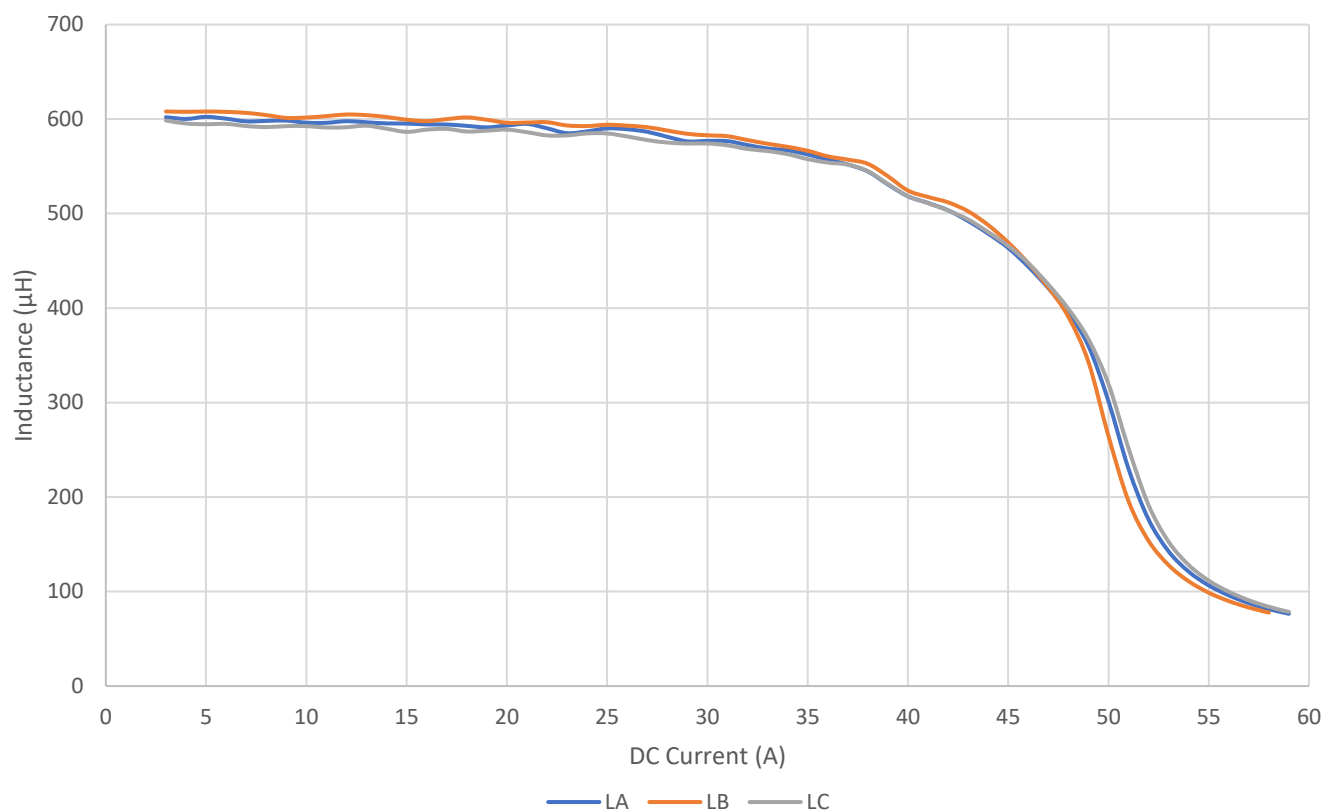


Figure 4. Inductance vs. DC BIAS - typical characteristic at @100°C.