Saturating Chokes

RI series

**Rated currents from 1.5 to 25 A**

**Up to 500 VAC operating voltage**

**DC to 1 kHz frequency**

**Single or dual-choke configurations**

**Performance indicators**

<table>
<thead>
<tr>
<th>Rated current [A]</th>
<th>0</th>
<th>1.5</th>
<th>30</th>
<th>60</th>
<th>90</th>
<th>120</th>
<th>150</th>
</tr>
</thead>
</table>

**Technical specifications**

- **Maximum continuous operating voltage**: 500 VAC @ 40°C
- **Rated currents**: 1.5 to 25 A @ 40°C max.
- **High potential test voltage**: winding-to-winding @ 25°C: 2500 VAC, 60 sec, guaranteed; winding-to-inserts: 2500 V, 50 Hz, 2 sec, factory test
- **Surge current @ 10 msec**: 20 x I_N @ 25°C
- **Temperature range (operation and storage)**: -25°C to +110°C (25/110/21)
- **Flammability corresponding to MTBF @ 40°C/230 V (MIL-HB-217F)**: UL 94 V-0
- **MTBF @ 40°C/230 V (MIL-HB-217F)**: >5,000,000 hours

**Approvals & Compliances**

RI saturating type chokes change impedance at the moment of switching, and can be used to attenuate differential-mode noise or symmetrical interference as generated in fast switching high current applications. These chokes are typically used in conjunction with suppression capacitors. For optimum attenuation, chokes must be connected as close as possible to the semiconductor switching device.

**Features and benefits**

- Excellent thermal behavior
- Through hole or wire connections
- Single or dual-choke configurations
- Up to 25 A single configuration
- Custom-specific versions are available on request

**Typical applications**

- Suppressing high interference levels generated by fast switching circuits
- DC voltage smoothing
- EMC/EMI filters
- Phase angle control circuits
- Power supplies
- Chargers

**Typical electrical schematic**
## Choke selection table

<table>
<thead>
<tr>
<th>Choke</th>
<th>Nominal current @ 40°C [A]</th>
<th>Resistance R [mΩ/path]</th>
<th>Qty</th>
<th>Input/Output connections</th>
<th>Weight [g]</th>
</tr>
</thead>
<tbody>
<tr>
<td>RI 111 PC</td>
<td>6</td>
<td>42</td>
<td>2</td>
<td>02</td>
<td>170</td>
</tr>
<tr>
<td>RI 401 PC</td>
<td>1.5</td>
<td>620</td>
<td>1</td>
<td>02</td>
<td>15</td>
</tr>
<tr>
<td>RI 403 PC</td>
<td>3</td>
<td>105</td>
<td>1</td>
<td>02</td>
<td>30</td>
</tr>
<tr>
<td>RI 406 PC</td>
<td>6</td>
<td>53</td>
<td>1</td>
<td>02</td>
<td>55</td>
</tr>
<tr>
<td>RI 410 PC</td>
<td>10</td>
<td>28</td>
<td>1</td>
<td>02</td>
<td>95</td>
</tr>
<tr>
<td>RI 415</td>
<td>15</td>
<td>8</td>
<td>1</td>
<td>07</td>
<td>205</td>
</tr>
<tr>
<td>RI 425</td>
<td>25</td>
<td>4</td>
<td>1</td>
<td>07</td>
<td>325</td>
</tr>
</tbody>
</table>

Test conditions:
Resistance tolerance: ±15% @ 25°C
Electrical characteristics @ 25°C: ±2°C

## Typical saturation characteristics

Inductance (typical value in %) vs. nominal current in %

![Graph of typical saturation characteristics](image)
Mechanical data

RI 111

Dimensions

<table>
<thead>
<tr>
<th></th>
<th>RI 111</th>
<th>RI 401</th>
<th>RI 403</th>
<th>RI 406</th>
<th>RI 410</th>
<th>RI 415</th>
<th>RI 425</th>
<th>Tolerances</th>
</tr>
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<tbody>
<tr>
<td>A</td>
<td>49</td>
<td>19.5</td>
<td>23.3</td>
<td>28.5</td>
<td>33</td>
<td>35</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>35</td>
<td>19.5</td>
<td>23.3</td>
<td>28.5</td>
<td>33</td>
<td>49</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>34</td>
<td>15</td>
<td>15</td>
<td>21.5</td>
<td>28</td>
<td>34</td>
<td>43</td>
<td>±0.3</td>
</tr>
<tr>
<td>D</td>
<td>15</td>
<td>4 ±0.5</td>
<td>6 ±0.5</td>
<td>4.5 ±0.5</td>
<td>6 ±0.5</td>
<td>200</td>
<td>200</td>
<td>±0.3</td>
</tr>
<tr>
<td>E</td>
<td>Ø1.15</td>
<td>0.6 x 0.88</td>
<td>0.6 x 0.88</td>
<td>0.75 x 1.1</td>
<td>10 ±2</td>
<td>10 ±2</td>
<td>10 ±2</td>
<td>±0.1</td>
</tr>
<tr>
<td>F</td>
<td>1</td>
<td>1</td>
<td>10 ±2</td>
<td>10 ±2</td>
<td>10 ±2</td>
<td>10 ±2</td>
<td>10 ±2</td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>20</td>
<td>12.5</td>
<td>15</td>
<td>20</td>
<td>17.5</td>
<td>22</td>
<td>39</td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>40</td>
<td>7.5</td>
<td>10</td>
<td>10</td>
<td>15</td>
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<td>M4</td>
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</tr>
<tr>
<td>J</td>
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<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>+0/-0.5</td>
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<tr>
<td>L</td>
<td>21</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>±0.25</td>
</tr>
</tbody>
</table>

All dimensions in mm; 1 inch = 25.4 mm
Tolerances according: ISO 2768-m/EN 22768-m

Please visit www.schaffner.com to find more details on filter connections.
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