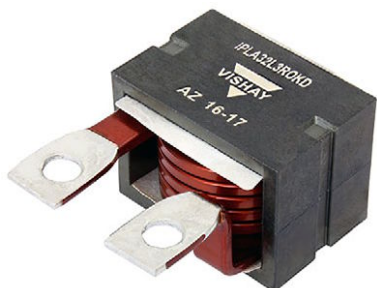


## High Current Planar Choke Inductor



In addition to catalogue product presented here, many custom products have been engineered see on following page few examples.

**DESIGN SUPPORT TOOLS** click logo to get started



### FEATURES

- For high power density DC/DC converter application
- High current capabilities
- Very stable performances versus temperature
- Very compact design (low profile and weight)
- Low EMI, magnetically shielded
- High self-resonance frequency
- Recommended frequency range (100 kHz; 800 kHz)
- Operating temperature range:  
-55 °C; 125 °C with heatsink dissipation
- Flexible pin out design (tapped output terminals, layout, ...)
- Material temperature grade: 180 °C
- Custom design on request

### QUICK REFERENCE DATA

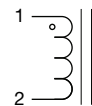
|                                 |                                       |
|---------------------------------|---------------------------------------|
| Type                            | Inductor                              |
| Size (L x W x H)                | 31 mm x 43 mm x 22.2 mm               |
| Terminals                       | Leadframe or wires                    |
| Inductance range <sup>(1)</sup> | 1 $\mu$ H to 4 $\mu$ H <sup>(2)</sup> |
| Frequency range                 | 100 kHz to 800 kHz                    |

### Notes

<sup>(1)</sup> Other values on request

<sup>(2)</sup> Please refer to "part number examples" table on the next page

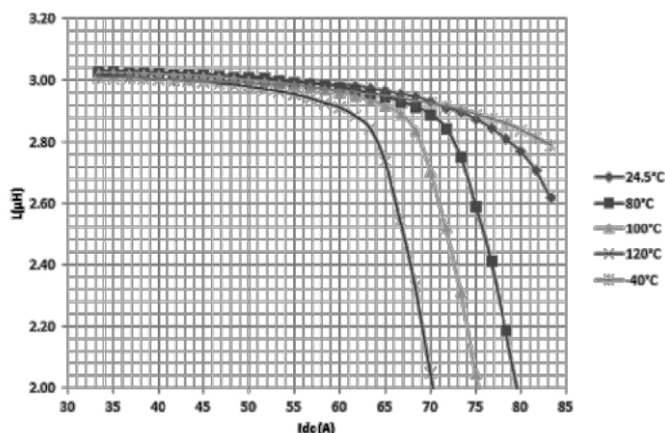
### CLASSICAL FRAMEWORKS - Other topologies on request

| L(1-2)<br>100 kHz / 0.1 V | WINDING<br>R <sub>DC</sub> (1-2) | INSULATION:<br>WINDING / CORE<br>500 V <sub>DC</sub> | POWER LOSSES<br>ASSESSMENT<br>UNDER 70 A <sub>DC</sub> AND<br>WINDING AT 120 °C | ELECTRICAL<br>SCHEME                                                                  |
|---------------------------|----------------------------------|------------------------------------------------------|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 3 $\mu$ H $\pm$ 10 %      | 0.62 m $\Omega$                  | R <sub>i</sub> > 10 M $\Omega$                       | 3 W <sup>(1)</sup>                                                              |  |

### Note

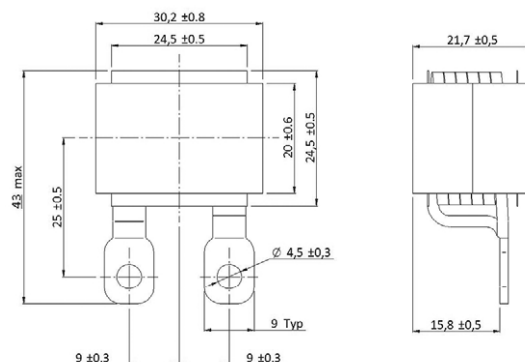
<sup>(1)</sup> **Caution:** power losses draining shall be managed by customer device

### ELECTRICAL SCHEMES



**TYPICAL THERMAL RESISTANCE**

| NATURAL CONVECTION | HEATSINK 1 FACE | HEATSINK 2 FACES |
|--------------------|-----------------|------------------|
| 10.5 W/mK          | 4 W/mK          | 2 W/mK           |

**MECHANICAL DIMENSIONS FOR IPLA32L (lead frames with smooth holes)**

**Note**

- Standard model: lead frame with holes (not threaded)

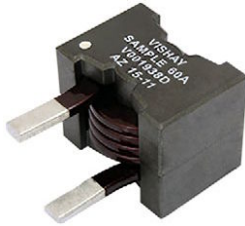
**PART NUMBER EXAMPLES**

| PART NUMBER  | L<br>( $\mu$ H) | I<br>(A) | $\Delta I$<br>(A) | LOSS<br>(W) | $\Delta T$ (1)<br>(°C) |
|--------------|-----------------|----------|-------------------|-------------|------------------------|
| IPLA32L1R0KD | 1               | 110      | 22                | 7           | 75                     |
| IPLA32L2R0KD | 2               | 100      | 20                | 5.8         | 60                     |
| IPLA32L3R0KD | 3               | 70       | 14                | 2.8         | 30                     |
| IPLA32L4R0KD | 4               | 50       | 10                | 1.5         | 15                     |

**Note**

- (1)  $\Delta T$  °C assessed with natural convection. When  $\Delta T$  °C > 40 °C it's advised to use a fitted thermal device to keep core temperature  $\leq 125$  °C

**EXAMPLES OF CUSTOM DESIGNS ALREADY ENGINEERED**

| Custom IPLA 32L<br>(no holes in lead frame)                                         | Custom IPLA 32L<br>(special lead frame shapes)                                      | IPLA 32N<br>(threaded holes in lead frames)                                           |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |
| 3 $\mu$ H / 45 A                                                                    | 3 $\mu$ H / 70 A                                                                    | 3 $\mu$ H / 140 A                                                                     |

**SAP PART NUMBERING**

| MODEL            | SIZE                   | STYLE                                                                    | VALUE                                                                | RATIO                                                         | SPECIAL  |
|------------------|------------------------|--------------------------------------------------------------------------|----------------------------------------------------------------------|---------------------------------------------------------------|----------|
| 4 digits<br>IPLA | 2 digits<br>32 = EC 32 | 1 digit<br>W = wire<br>L = leadframe<br>N = leadframe with threaded nuts | 3 digits<br>3R0 = 3 $\mu$ H<br>101 = 100 $\mu$ H<br>300 = 30 $\mu$ H | 1 digit<br>M = $\pm 20$ %<br>A = $\pm 15$ %<br>K = $\pm 10$ % | 6 digits |



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