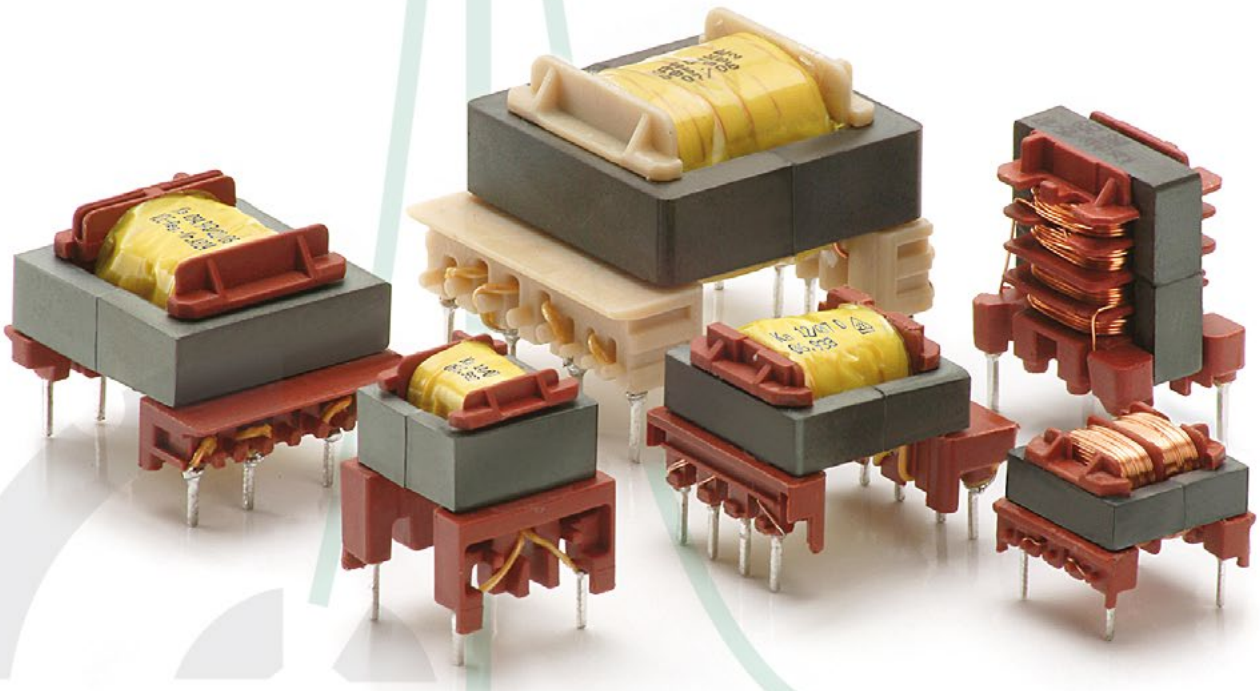
Kaschke Components GmbH

We provide inductive solutions for

- renewable energies
- smart grid
- energy efficiency

industrial electronics | automotive electronics | lighting techonology | consumer goods industry | telecommunications/ entertainmentelectronics

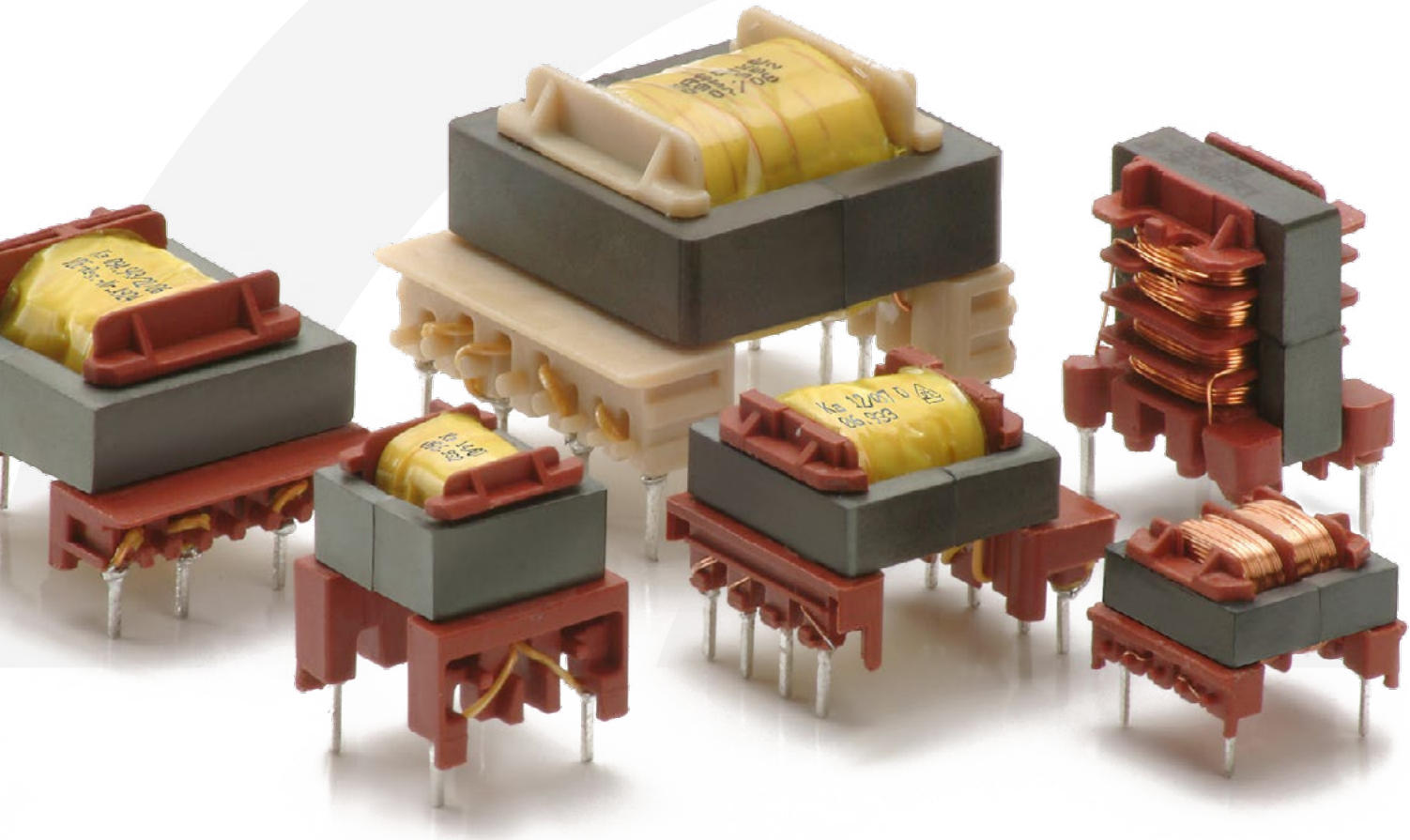


# Smart Power

# Safety insulation transformers for different silicon controller families

We provide solutions.

# Kaschke SMPS Safety Transformers
# SmarterPower Supply Design



**“The concept of SmartPower is a challenge to the conventional solution of custom transformers by producing standard windings on a variety of power platforms.”**

**Josef Postert**
**Head of Sales Kaschke Components GmbH**

Kaschke Components GmbH

# Important notes for any design

## Safety

Having the correct and safe construction of an isolating transformer is vital. The transformer provides the main safety isolation barrier between lethal voltage and the end user. If you look at most EN safety standards they go into great detail on the specification of wound components. The qualification and design of safety rated parts are often difficult and time consuming.

We provide solutions ✓

- Integrated safety margin
- Min. 3.75 kV primary to secondary isolation as standard
- All parts use UL listed materials
- Complies with EN safety standards

## Performance

With the integration of more control circuitry into the switching IC the most complex part of PSU design is often the transformer rather than the surrounding components. A poorly designed transformer will produce an inefficient and low performing power supply even with the best switching technology.

We provide solutions ✓

- Kaschke Power Ferrite K2006 or equivalent low loss material
- Optimized for low leakage inductance
- Optimized for low interwinding capacitance
- Shield windings – improved EMC performance

## Reliability

Repeatability is the critical component in all PSU designs. Variations in tolerance or quality can lead to expensive over design and field failure. The larger the production volume the larger the problem.

We provide solutions ✓

- Designed for manufacture
- 100 % test
- Triple Insulated Wire on all parts
- Fully automated production process

**Kaschke Plug & Play**

With over 50 years of market experience we lead the way in the development of standard transformer solutions for SMPS control IC's. All of our designs meet the necessary safety and performance criteria of EN61558. They are also fulfilling the transformer requirements for safety insulation according to:

- EN 60065
- EN 60950
- EN 60335
- EN62109 (types on request)

EMC filters meets the criteria for EN60938.

Approved parts by VDE

**Simple to design with**

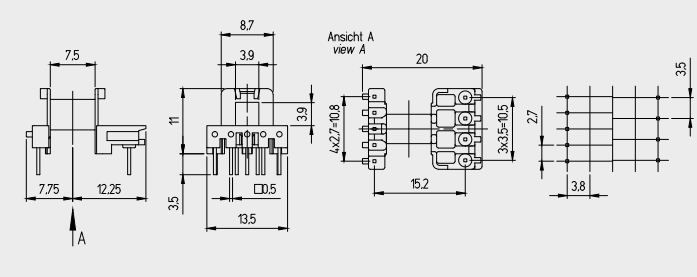
The parts that are listed, are our 'Standard Range' , which we define as popular lines with multiple customers. This 'Standard Range' is continuously updated to keep up with the latest development in power supply silicon. Samples are available to customers free of charge, our default quantity is 2 pieces of any device. You can either contact the Kormag office directly or complete the online enquiry form, we then despatch the same day.

- Free samples
- 50 piece pack sizes for prototyping
- Off-the-shelf stock
- Stockist – www.kormag.co.uk

# Transformer for Flyback-Converter

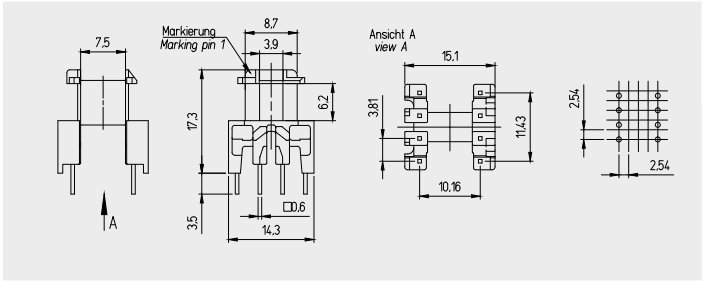
## E 13/4 Platform

| Power** | Inputvoltage | Primary Inductance | Output 1 | Output2 | Creepage | AUX | Shield | Part Number |
|---|---|---|---|---|---|---|---|---|
| 4W | 85-265 VAC | 2,39 mH ± 10 % | 3 V / 0,75 A | 3 V / 0,75 A | ≥ 6 mm | x | - | 071951 |
| 4W | 85-265 VAC | 2,39 mH ± 10 % | 12 V / 0,2 A | 12 V / 0,2 A | ≥ 6 mm | x | - | 071952 |




## E 13/6 Platform

| Power** | Inputvoltage | Primary Inductance | Output 1 | Output2 | Creepage | AUX | Shield | Part Number |
|---|---|---|---|---|---|---|---|---|
| 3 W | 85-265 VAC | 1,18 mH ± 15 % | 12V / 0.125 A | 12V / 0.125 A | ≥ 6 mm | - | - | 096922 |
| 3 W | 85-265 VAC | 1,4 mH ± 15 % | 12V / 0.25 A | - | ≥ 6 mm | - | - | 096931 |
| 3 W | 85-265 VAC | 1,4 mH ± 15 % | 6V / 0.5 A | - | ≥ 6 mm | - | - | 096930 |
| 3 W | 85-265 VAC | 2,8 mH ± 10 % | 3V / 1 A | - | ≥ 6 mm | - | - | 096901 |
| 3 W | 85-265 VAC | 2,8 mH ± 10 % | 5V / 0,6 A | - | ≥ 6 mm | - | - | 096902 |
| 3 W | 85-265 VAC | 2,8 mH ± 10 % | 12V / 0,25 A | - | ≥ 6 mm | - | - | 096903 |
| 3 W | 85-265 VAC | 2,8 mH ± 10 % | 15V / 0,2 A | - | ≥ 6 mm | - | - | 096904 |
| 3 W | 85-265 VAC | 2,62 mH ± 10 % | 12V / 0,125 A | 12V / 0,125 A | ≥ 6 mm | x | x | 096906 |
| 3 W | 85-265 VAC | 3,4 mH ± 15 % | 12V / 0,25 A | - | ≥ 6 mm | x | - | 096951 |
| 3 W | 85-265 VAC | 3,8 mH ± 10 % | 12V / 0,25 A | - | ≥ 6 mm | x | x | 096971 |
| 4 W | 85-265 VAC | 3,4 mH ± 15 % | 6V / 0,7 A | - | ≥ 6 mm | x | - | 096950 |
| 4 W | 85-265 VAC | 1,6 mH ± 10 % | 5V / 0,8 A | - | ≥ 6 mm | x | - | 096840 |
| 4 W | 85-265 VAC | 1,5 mH ± 10 % | 12V / 0,35 A | - | ≥ 6 mm | x | - | 096841 |
| 4 W | 85-265 VAC | 1,5 mH ± 10 % | 6V / 0,7 A | - | ≥ 6 mm | x | - | 096940 |
| 4 W | 85-265 VAC | 2,4 mH ± 15 % | 12V / 0,35 A | - | ≥ 6 mm | - | - | 096941 |
| 4.5 W | 85-265 VAC | 2,4 mH ± 10 % | 18V/ 0,25 A | - | ≥ 6 mm | x | - | 096943 |
| 5 W | 85-265 VAC | 1,94 mH ± 10 % | 18V / 0.3 A | - | ≥ 6 mm | - | - | 096929 |

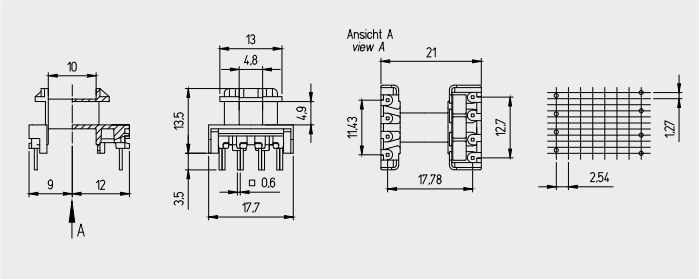





**Drawings without ferrite cores, tolerances and maximum values.** For further technical datas, please visit www.kormag.co.uk

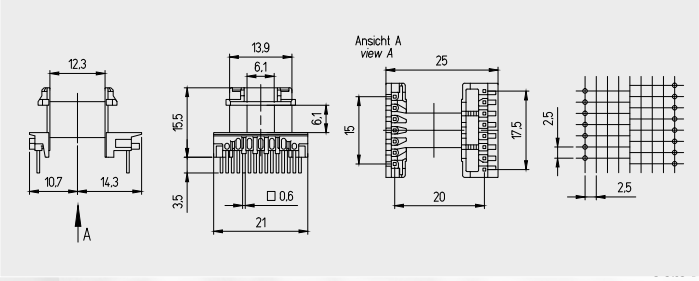
## E 16/5 Platform

| | Power** | Inputvoltage | Primary Inductance | Output 1 | Output2 | Creepage | AUX | Shield | Part Number |
|---|---|---|---|---|---|---|---|---|---|
| VDE | 1,5 W | 85-265 VAC | 5,67 mH ± 10% | 6V / 0,1 A | 6V / 0,1 A | ≥ 8 mm | - | - | 063928 |
| | 2 W | 85-265 VAC | 4,1 mH ± 15% | 3,3V / 0,6 | - | ≥ 8 mm | x | - | 093709 |
| | 3 W | 85-265 VAC | 2,8 mH ± 15% | 15V / 0,2 | - | ≥ 8 mm | - | - | 093904 |
| VDE | 3 W | 85-265 VAC | 3,9 mH ± 10% | 6V / 0,25 A | 6V / 0,25 A | ≥ 8 mm | - | - | 063929 |
| | 4 W | 85-265 VAC | 2,8 mH ± 10% | 5V / 0,4 A | 7V / 0,25 A | ≥ 8 mm | x | x | 093758 |
| | 4,5 W | 85-265 VAC | 1,6 mH ± 10% | 6V / 0,75 A | - | ≥ 8 mm | x | - | 093940 |
| | 4,5 W | 85-265 VAC | 2,2 mH ± 10% | 18V / 0,25 A | - | ≥ 8 mm | x | - | 093943 |
| VDE | 3-6 W | 85-265 VAC | 3,9 mH ± 10% | 9-12V / 0,25 A | 9-12V / 0,25 A | ≥ 8 mm | - | - | 063930 |
| VDE | 6 W | 85-265 VAC | 1,55 mH ± 15% | 6V / 0,5 A | 6V / 0,5 A | ≥ 8 mm | - | x | 063931 |
| VDE | 6 W | 85-265 VAC | 1,55 mH ± 15% | 12V / 0,25 A | 12V / 0,25 A | ≥ 8 mm | - | x | 063932 |
| VDE | 8 W | 85-265 VAC | 1,58 mH ± 12% | 6V / 0,65 A | 6V / 0,65 A | ≥ 8 mm | - | x | 093830 |
| | 8 W | 85-265 VAC | 2,0 mH ± 15% | 13V / 0,3 A | 13V / 0,3 A | ≥ 8 mm | - | x | 093832 |
| VDE | 9 W | 85-265 VAC | 0,89 mH ± 10% | 6V / 0,75 A | 6V / 0,75 A | ≥ 8 mm | - | x | 063933 |
| VDE | 9 W | 85-265 VAC | 0,89 mH ± 10% | 12V / 0,37 A | 12V / 0,37 A | ≥ 8 mm | - | x | 063934 |
| | 9 W | 85-265 VAC | 2,55 mH ± 15% | 5V / 0,5 A | 12V / 0,5 A | ≥ 8 mm | - | - | 093203 |




## E 20/6 Platform

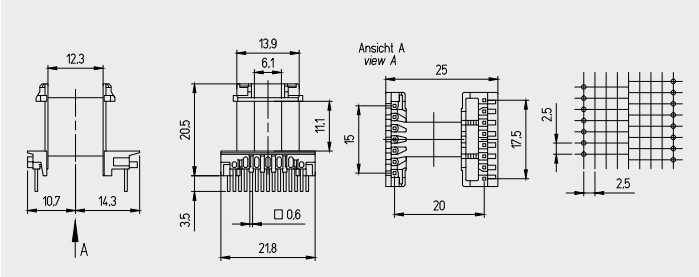
| | Power** | Inputvoltage | Primary Inductance | Output 1 | Output2 | Creepage | AUX | Shield | Part Number |
|---|---|---|---|---|---|---|---|---|---|
| | 14 W | 85-265 VAC | 1,9 mH ± 10% | 5V / 1,2 A | 19V / 0.4 A | ≥ 8 mm | - | - | 094944 |
| VDE | 18 W | 85-265 VAC | 1,16 mH ± 10% | 6V / 1.5 A | 6V / 1.5 A | ≥ 8 mm | - | - | 094940 |
| VDE | 18 W | 85-265 VAC | 1,16 mH ± 10% | 12V / 0.75 A | 12V / 0.75 A | ≥ 8 mm | - | - | 094941 |
| VDE | 18 W | 85-265 VAC | 1,2 mH ± 10% | 18V / 0.5 A | 18V / 0.5 A | ≥ 8 mm | - | - | 094943 |
| VDE | 19 W | 85-265VAC | 1,1 mH ± 10% | 24V / 0.5 A | 6V / 1 A | ≥ 8 mm | - | - | 094942 |
| VDE | 22 W | 85-265 VAC | 0,94 mH ± 10% | 5V / 1,4 A | 12V / 1.2 A | ≥ 8 mm | x | - | 094932 |
| VDE | 22 W | 85-265 VAC | 0,94 mH ± 10% | 6V /1,8 A | 6V / 1,8 A | ≥ 8 mm | x | - | 094931 |
| VDE | 22 W | 85-265 VAC | 0,94 mH ± 10% | 5V / 0.8 A | 24V / 0.8 A | ≥ 8 mm | x | - | 094930 |
| VDE | 22 W | 85-265 VAC | 0,94 mH ± 10% | 12V / 0,9 A | 12V / 0,9 A | ≥ 8 mm | x | - | 094929 |
| | 22W | 85-265 VAC | 0,94 mH ± 10% | 20V / 0,55 A | 20V / 0,55 A | ≥ 8 mm | x | - | 094792 |




* Multiple outputs can be connected in series or in parallel as long as the maximum power of the transformer is not exceeded. Please see web site or data sheets for possible configurations.
** The "Power" shown is the nominal power of the supply. It may vary depending on the design of the circuit.

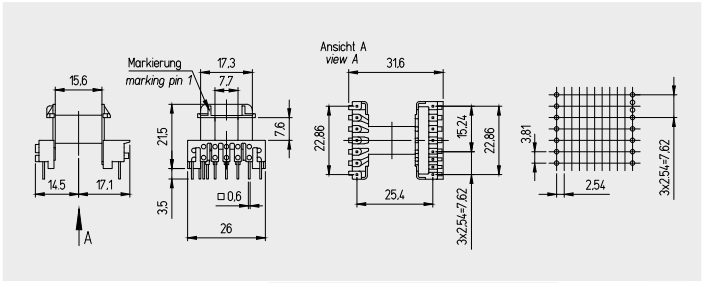
## E 20/11 Platform

| Power** | Inputvoltage | Primary Inductance | Output 1 | Output2 | Creepage | AUX | Shield | Part Number |
|---|---|---|---|---|---|---|---|---|
| 27W | 85-265 VAC | 797 µH ± 10% | 6 V / 2,2 A | 6V/2,2 A | ≥ 8 mm | x | - | 094980 |
| 27W | 85-265 VAC | 797 µH ± 10% | 12 V / 1,1 A | 12V/1,1 A | ≥ 8 mm | x | - | 094981 |



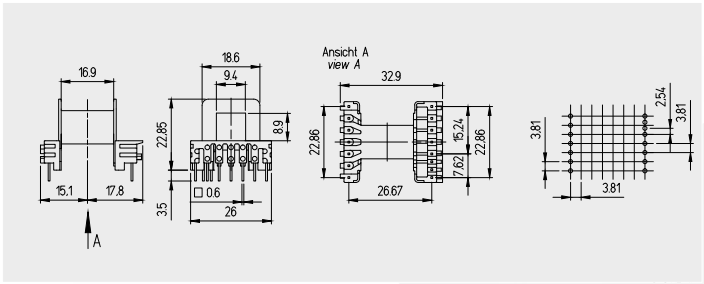

## E 25/7 Platform

| Power** | Inputvoltage | Primary Inductance | Output 1 | Output2 | Creepage | AUX | Shield | Part Number |
|---|---|---|---|---|---|---|---|---|
| 28 W | 85-265 VAC | 1,28 mH ± 10% | 13,8 V / 1 A | 13,8 V / 1 A | ≥ 8 mm | x | - | 095931 |
| 34 W | 85-265 VAC | 504 µH ± 10% | 5 V / 2.5 A | 12 V / 1.8 A | ≥ 8 mm | x | - | 095954 |
| 34 W | 85-265 VAC | 504 µH ± 10% | 5 V / 2 A | 24 V / 1.0 A | ≥ 8 mm | x | - | 095953 |
| 38 W | 85-265 VAC | 504 µH ± 10% | 15 V / 1,3 A | 15 V / 1,3 A | ≥ 8 mm | x | - | 095952 |
| 45 W | 85-265 VAC | 504 µH ± 10% | 30 V / 0.75 A | 30 V / 0.75 A | ≥ 8 mm | x | - | 095951 |
| 45 W | 85-265 VAC | 504 µH ± 10% | 12 V / 1,9 A | 12 V / 1,9 A | ≥ 8 mm | x | - | 095956 |



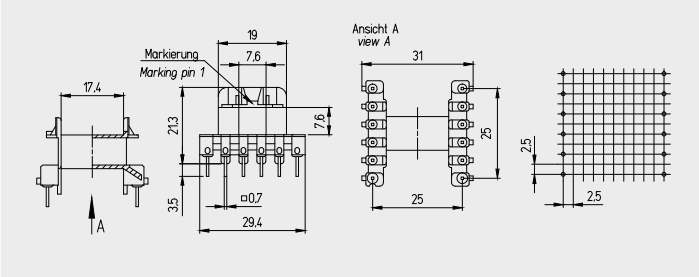

## EFS 25/13 Platform

| Power** | Inputvoltage | Primary Inductance | Output 1 | Output2 | Creepage | AUX | Shield | Part Number |
|---|---|---|---|---|---|---|---|---|
| 55 W | 85-265 VAC | 350 µH ± 10% | 15 V / 1,8 A | 15 V / 1,8 A | ≥ 8 mm | x | - | 195951 |
| 55 W | 85-265 VAC | 350 µH ± 10% | 24 V / 1,8 A | 6 V / 1,8 A | ≥ 8 mm | x | - | 195952 |



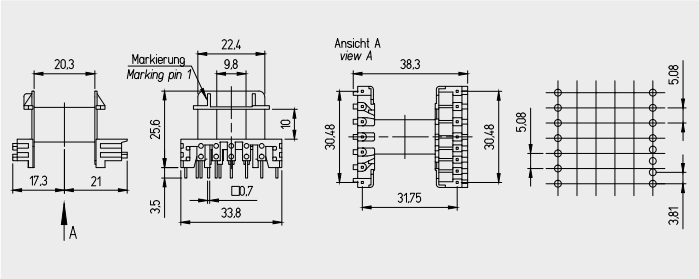
## E 30/7 Platform

| Power** | Inputvoltage | Primary Inductance | Output 1 | Output2 | Creepage | AUX | Shield | Part Number |
|---|---|---|---|---|---|---|---|---|
| 48W | 85-265 VAC | 930 µH ± 10% | 13,8V / 3,5 A | - | ≥ 6 mm | x | - | 066932 |
| 42 W | 85-265 VAC | 346 µH ± 10% | 14V / 3 A | - | ≥ 6 mm | x | - | 066929 |
| 50 W | 85-265 VAC | 320 µH ± 10% | 24V / 2 A | - | ≥ 6 mm | x | - | 066930 |
| 56 W | 85-265 VAC | 290 µH ± 10% | 28V / 2 A | - | ≥ 6 mm | x | - | 066931 |



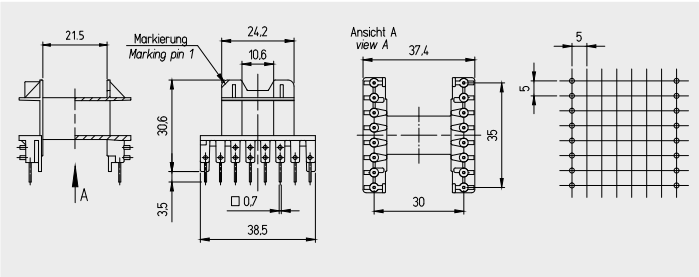

## E 32/9 Platform

| Power** | Inputvoltage | Primary Inductance | Output 1 | Output2 | Creepage | AUX | Shield | Part Number |
|---|---|---|---|---|---|---|---|---|
| 70W | 85-265 VAC | 281 µH ± 10% | 12V / 2,8 A | 12V / 2,8 A | ≥ 8 mm | x | - | 149950 |
| 70W | 85-265 VAC | 281 µH ± 10% | 24V / 2,5 A | 6V / 1,5 A | ≥ 8 mm | x | - | 149951 |




## E 36/11 Platform

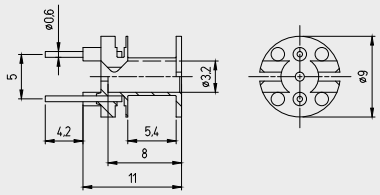
| Power** | Inputvoltage | Primary Inductance | Output 1 | Output2 | Creepage | AUX | Shield | Part Number |
|---|---|---|---|---|---|---|---|---|
| 68 W | 85-265 VAC | 530 µH ± 10% | 15V / 4.5 A | | ≥ 8 mm | x | - | 067043 |
| 96 W | 85-265 VAC | 178 µH ± 10% | 30V / 1,6 A | 30V / 1,6 A | ≥ 8 mm | x | - | 067039 |
| 96 W | 85-265 VAC | 134 µH ± 10% | 24V / 4 A | | ≥ 8 mm | x | - | 067050 |




* Multiple outputs can be connected in series or in parallel as long as the maximum power of the transformer is not exceeded. Please see web site or data sheets for possible configurations.
** The "Power" shown is the nominal power of the supply. It may vary depending on the design of the circuit.

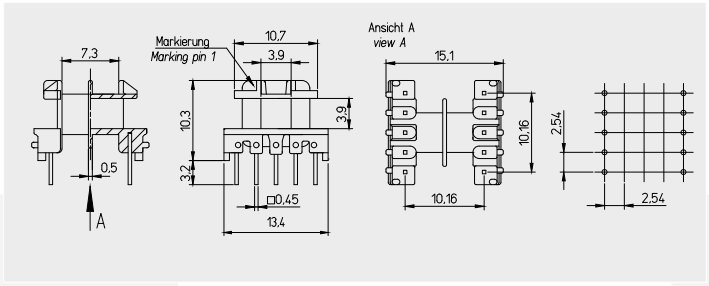
## Inductance for Buck-Converter

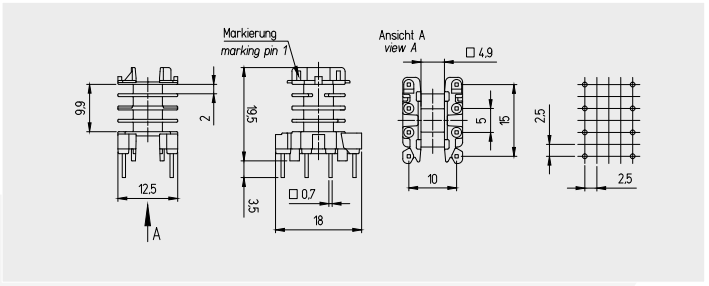
| Power** | Inputvoltage | Primary Inductance | Output 1 | Part Number |
|---|---|---|---|---|
| 4 W | 85-265 VAC | 0,68 mH | 5-15 V / 410 mA | 037262 |
| 4 W | 85-265 VAC | 1,0 mH | 5-15 V / 300 mA | 037259 |
| 4 W | 85-265 VAC | 1,5 mH | 5-15 V / 270 mA | 037256 |

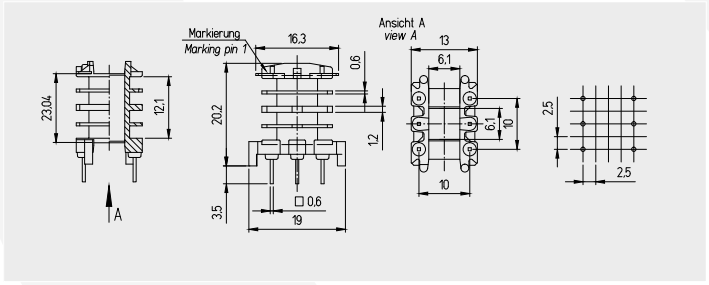


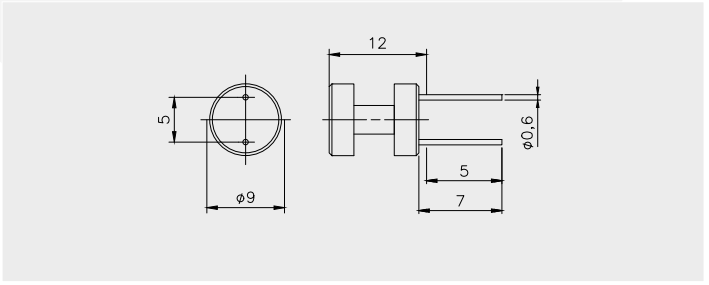

## EMC Filter

| Power** | Inputvoltage | Primary Inductance | Platforms | Part Number |
|---|---|---|---|---|
| 0,24 A | 85-265 VAC | 33 mH | E13/4 | 071925 |
| 0,26 A | 85-265 VAC | 27 mH | E13/4 | 071924 |
| 0,28 A | 85-265 VAC | 22 mH | E13/4 | 071923 |
| 0,54 A | 85-265 VAC | 12 mH | E13/4 | 071921 |
| VDE 0,35 A | 85-265 VAC | 47 mH | E16 | 093657 |
| VDE 0,4 A | 85-265 VAC | 39 mH | E16 | 093551 |
| VDE 0,5 A | 85-265 VAC | 27 mH | E16 | 093267 |
| VDE 0,625 A | 85-265 VAC | 15 mH | E16 | 093259 |
| VDE 0,9 A | 85-265 VAC | 8,75 mH | E16 | 093216 |
| 0,8 A | 85-265 VAC | 22,5 mH | E20 | 094916 |
| 1,05 A | 85-265 VAC | 220 uH | 8 mm Drum | 036617 |
| 1,7 A | 85-265 VAC | 100 uH | 8 mm Drum | 036613 |
| 3,7 A | 0-60 V DC | 6.8 uH | 8 mm Drum | 036230 |
| 4,3 A | 0-60 V DC | 4.7 uH | 8 mm Drum | 036238 |
| 5,5 A | 0-60 V DC | 3.3 uH | 8 mm Drum | 036242 |
| 5,6 A | 0-60 V DC | 10 uH | 8 mm Drum | 036601 |

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All information given without liability. If you require further information about our products, do not hesitate to contact our representatives, or visit our website, *www.kaschke.de*.

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kaschke.de

Kaschke Components GmbH

05/2013