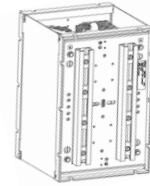


# Data Sheet



Infineon Technologies Bipolar  
GmbH & Co. KG

## D4810N28T-KE01/1-E01



1 Diode  
Assembly for  
Natural Air Cooling

Sales Type 1D4810NKE01U34210  
Order Number SP000966662  
Material Number 34210

### Electrical Properties

|                                     |   |                   |      |    |
|-------------------------------------|---|-------------------|------|----|
| Nominal B6 AC current per phase     | $T_A = 45^\circ\text{C}$                                  | $I_{\text{RMS}}$  | 2075 | A  |
| Nominal B6 DC current (6 blocks)    | $T_A = 45^\circ\text{C}$                                  | $I_{\text{DC}}$   | 2541 | A  |
| Nominal AC voltage                  | +/-10%  | $V_{\text{RMS}}$  | 850  | V  |
| Nominal B6 DC voltage               | +/-10%  | $V_{\text{DC}}$   | 1150 | V  |
| Nominal B6 power losses (per block) | $T_A = 45^\circ\text{C}$                                  | $P_{\text{Loss}}$ | 0,8  | kW |
| Nominal B6 AC current per Phase     | $T_A = 35^\circ\text{C}; V_{\text{cool}} = 190\text{l/s}$ | $I_{\text{RMS}}$  | 5143 | A  |
| Nominal B6 DC current (6 blocks)    | $T_A = 35^\circ\text{C}; V_{\text{cool}} = 190\text{l/s}$ | $I_{\text{DC}}$   | 6299 | A  |
| Nominal B6 power losses (per block) | $T_A = 35^\circ\text{C}; V_{\text{cool}} = 190\text{l/s}$ | $P_{\text{Loss}}$ | 2,6  | kW |

### Mechanical Properties

|  |                     |   |             |    |
|--|---------------------|---|-------------|----|
| Total width                            | on mounting plane   | W | 225         | mm |
| Total height                           | on mounting plane   | H | 380         | mm |
| Total depth                            | over mounting plane | D | 301         | mm |
| Weight                                 |                     |   | 19,5        | kg |
| Mounting torque frame (M8 with washer) | +10%                |   | 15          | Nm |
| Assembly torque terminals (M8)         | +10%                |   | 12          | Nm |
| Control terminals                      | acc. DIN 46244      |   | A 6,3 x 0,8 | mm |
| Protection                             | acc. IEC 60529      |   | IP00        |    |

### Environmental Properties

|   |                  |       |      |                  |
|---|------------------|-------|------|------------------|
| Maximum operation altitude without derating |                  |       | 1000 | m                |
| Maximum ambient temperature                 |                  | $T_A$ | 80   | $^\circ\text{C}$ |
| Pollution degree                            | acc. IEC 60664-1 |       | 2    |                  |
| Climatic conditions                         | acc. IEC 60721-3 |       | 3K3  |                  |
| Vibration resistance                        | f = 50 Hz        |       | 50   | m/s <sup>2</sup> |

### semiconductor properties

|                  |  |                          |     |           |  |
|------------------|--|--------------------------|-----|-----------|--|
| type designation |  | see according data sheet | 1 x | D4810N28T |  |
|------------------|--|--------------------------|-----|-----------|--|



Product not for End Consumer  
See General Instructions on last page !!!

|              |     |                      |              |
|--------------|-----|----------------------|--------------|
| prepared by: | JPa | Date of Publication: | 07. Dec 2015 |
| approved by: | ML  | Revision:            | 3.1          |

# Data Sheet



Infineon Technologies Bipolar  
GmbH & Co. KG

## D4810N28T-KE01/1-E01

### Ambient Temperature vs. Losses and Current in B6U Configuration with natural Air Cooling

*all calculations without switching losses*

| $T_A$ [°C]                 | $P_{AV}$ [W] per arm | $P_D$ [W] total | $T_C$ [°C] device             | $I_{AV}$ [A] per arm | $I_{RMS}$ [A] per arm | $I_{RMS}$ [A] phase | $I_D / I_{RMS}$ [A] circuit      | $R_{thCA}$ [°C/W] | $I_{RMS}$ limitation |
|----------------------------|----------------------|-----------------|-------------------------------|----------------------|-----------------------|---------------------|----------------------------------|-------------------|----------------------|
| 25                         | 1024                 | 6142            | 151                           | 1006                 | 1743                  | 2465                | <b>3019</b>                      | 0,1233            | no                   |
| 30                         | 975                  | 5850            | 152                           | 966                  | 1673                  | 2365                | <b>2897</b>                      | 0,1248            | no                   |
| 35                         | 927                  | 5564            | 152                           | 925                  | 1603                  | 2267                | <b>2776</b>                      | 0,1262            | no                   |
| 40                         | 881                  | 5288            | 152                           | 886                  | 1535                  | 2170                | <b>2658</b>                      | 0,1276            | no                   |
| 45                         | 836                  | 5018            | 153                           | 847                  | 1467                  | 2075                | <b>2541</b>                      | 0,1289            | no                   |
| 50                         | 792                  | 4750            | 153                           | 808                  | 1399                  | 1978                | <b>2423</b>                      | 0,1304            | no                   |
| 55                         | 745                  | 4470            | 154                           | 766                  | 1327                  | 1877                | <b>2298</b>                      | 0,1323            | no                   |
| 60                         | 700                  | 4200            | 154                           | 725                  | 1256                  | 1777                | <b>2176</b>                      | 0,1343            | no                   |
| 65                         | 657                  | 3939            | 154                           | 686                  | 1188                  | 1680                | <b>2057</b>                      | 0,1361            | no                   |
| 70                         | 614                  | 3686            | 155                           | 647                  | 1120                  | 1584                | <b>1940</b>                      | 0,1379            | no                   |
| 75                         | 570                  | 3422            | 155                           | 605                  | 1048                  | 1482                | <b>1816</b>                      | 0,1404            | no                   |
| 80                         | 527                  | 3161            | 155                           | 564                  | 976                   | 1380                | <b>1691</b>                      | 0,1433            | no                   |
| <i>Device</i>              | D4810N               |                 | <i>Circuit</i>                |                      |                       | B6U, B6C            | <i>Cooling mode</i>              |                   | natural air cooling  |
| <i>Heatsink</i>            | KE01                 |                 | <i>Number of arms</i>         |                      |                       | 6                   | <i>Cooling volume / heatsink</i> |                   | 0                    |
| <i>Line voltage [V]</i>    | 850                  |                 | <i>Number of heatsinks</i>    |                      |                       | 6                   | <i>Total cooling volume</i>      |                   |                      |
| <i>R. peak voltage [V]</i> | 2800                 |                 | <i>DC circuit voltage [V]</i> |                      |                       | 1150                |                                  |                   |                      |

### Ambient Temperature vs. Losses and Current in B6U Configuration with forced Air Cooling

| $T_A$ [°C]                 | $P_{AV}$ [W] per arm | $P_D$ [W] total | $T_C$ [°C]                    | $I_{AV}$ [A] | $I_{RMS}$ [A] per arm | $I_{RMS}$ [A] | $I_D / I_{RMS}$ [A]                  | $R_{thCA}$ [°C/W] | $I_{RMS}$          |
|----------------------------|----------------------|-----------------|-------------------------------|--------------|-----------------------|---------------|--------------------------------------|-------------------|--------------------|
| 25                         | 2768                 | 16605           | 136                           | 2225         | 3854                  | 5450          | <b>6675</b>                          | 0,0402            | no                 |
| 30                         | 2665                 | 15990           | 137                           | 2163         | 3746                  | 5298          | <b>6488</b>                          | 0,0402            | no                 |
| 35                         | 2563                 | 15375           | 138                           | 2100         | 3637                  | 5143          | <b>6299</b>                          | 0,0402            | no                 |
| 40                         | 2460                 | 14760           | 139                           | 2035         | 3525                  | 4986          | <b>6106</b>                          | 0,0402            | no                 |
| 45                         | 2358                 | 14145           | 140                           | 1970         | 3413                  | 4826          | <b>5911</b>                          | 0,0402            | no                 |
| 50                         | 2255                 | 13530           | 141                           | 1904         | 3298                  | 4664          | <b>5713</b>                          | 0,0402            | no                 |
| 55                         | 2153                 | 12915           | 142                           | 1837         | 3182                  | 4500          | <b>5511</b>                          | 0,0402            | no                 |
| 60                         | 2050                 | 12300           | 142                           | 1769         | 3064                  | 4333          | <b>5306</b>                          | 0,0402            | no                 |
| 65                         | 1948                 | 11685           | 143                           | 1699         | 2943                  | 4162          | <b>5098</b>                          | 0,0402            | no                 |
| 70                         | 1845                 | 11070           | 144                           | 1629         | 2821                  | 3989          | <b>4886</b>                          | 0,0402            | no                 |
| 75                         | 1743                 | 10455           | 145                           | 1557         | 2696                  | 3813          | <b>4670</b>                          | 0,0402            | no                 |
| 80                         | 1640                 | 9840            | 146                           | 1483         | 2569                  | 3633          | <b>4449</b>                          | 0,0402            | no                 |
| <i>Device</i>              | D4810N               |                 | <i>Circuit</i>                |              |                       | B6U, B6C      | <i>Cooling mode</i>                  |                   | forced air cooling |
| <i>Heatsink</i>            | KE01 190 l/s         |                 | <i>Number of arms</i>         |              |                       | 6             | <i>Cooling volume / heatsink</i>     |                   | 190 l/s            |
| <i>Line voltage [V]</i>    | 850                  |                 | <i>Number of heatsinks</i>    |              |                       | 6             | <i>Total cooling volume</i> 1140 l/s |                   |                    |
| <i>R. peak voltage [V]</i> | 2800                 |                 | <i>DC circuit voltage [V]</i> |              |                       | 1150          |                                      |                   |                    |

#### Disclaimer

The intention of this calculation is to receive a quick pre-selection of infineon thyristors and diodes. The calculated datas are based on values given in the respective thyristor/diode device's data sheet. The product datas as well as the datas used in the calculations may be subject to changes, improvements or corrections without prior notice. Calculations are based on linear approximations, e.g. for the device's forward characteristics ( $v_{T0}$  and  $r_T$ ). All calculations are disregarding switching losses unless pointed out separately. Operating conditions may differ from calculation assumptions in several aspects. Therefore deviations of parameters and assumptions used for the calculations and the real application may exist. For these reasons infineon cannot take any responsibility or liability for the exactness or validity of the calculated results. The program cannot replace a detailed reflection of the customers application with all of its operating conditions.

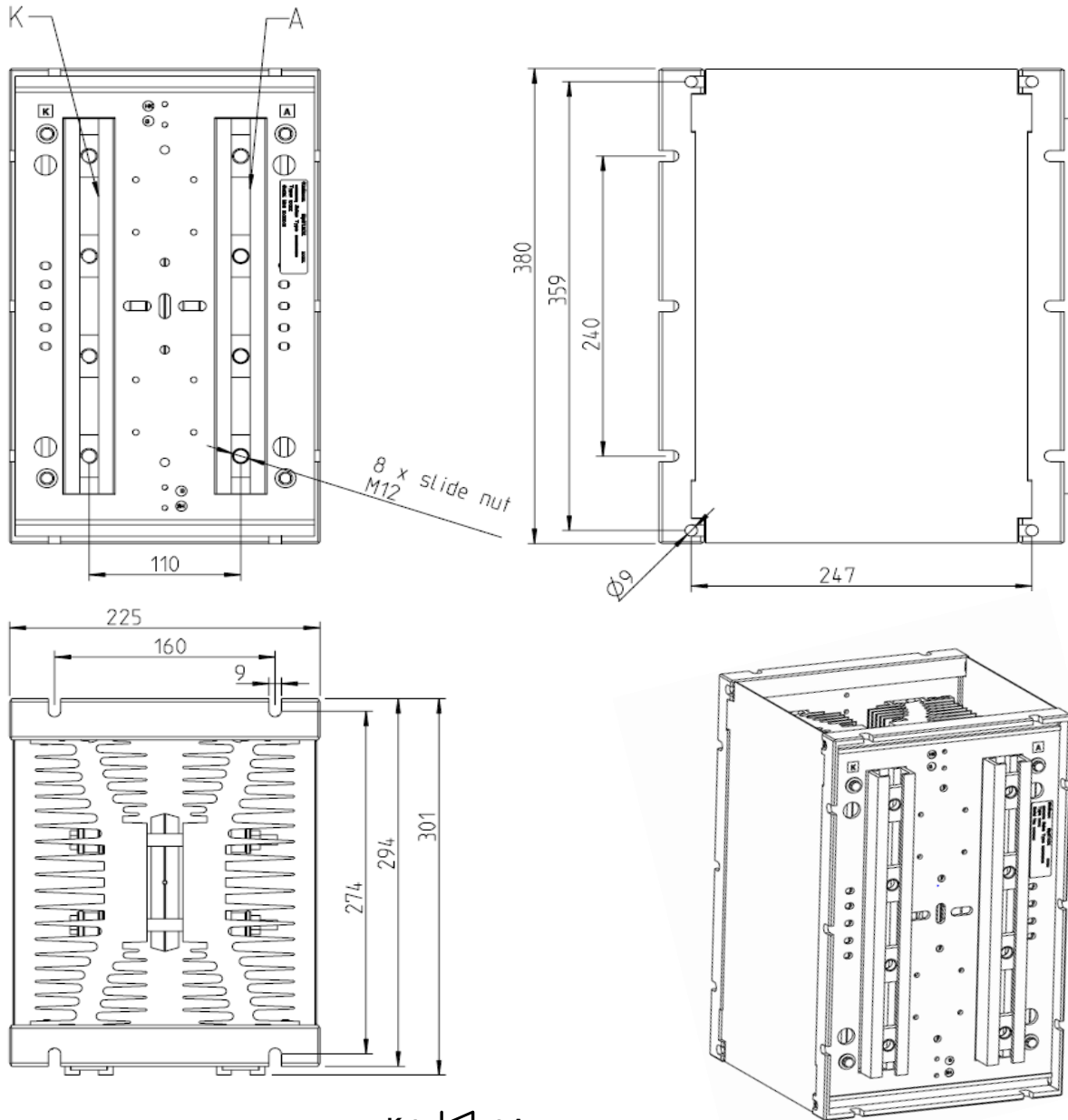
# Data Sheet

D4810N28T-KE01/1-E01



Infineon Technologies Bipolar  
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## Dimensional Drawing



### Terms & Conditions of usage

The data contained in this product data sheet is exclusively intended for technically trained staff. You and your technical departments will have to evaluate the suitability of the product for the intended application and the completeness of the product data with respect to such application.

This product data sheet is describing the characteristics of this product for which a warranty is granted. Any such warranty is granted exclusively pursuant the terms and conditions of the supply agreement. There will be no guarantee of any kind for the product and its characteristics. Should you require product information in excess of the data given in this product data sheet or which concerns the specific

application of our product, please contact the sales office, which is responsible for you (see [www.infineon.com](http://www.infineon.com), sales&contact). For those that are specifically interested we may provide application notes. Due to technical requirements our product may contain dangerous substances. For information on the types in question please contact the sales office, which is responsible for you.

Should you intend to use the Product in aviation applications, in health or live endangering or life support applications, please notify.

Please note, that for any such applications we urgently recommend

- to perform joint Risk and Quality Assessments;
- the conclusion of Quality Agreements;
- to establish joint measures of an ongoing product survey,

and that we may make delivery depended on the realisation of any such measures.

If and to the extent necessary, please forward equivalent notices to your customers.

Changes of this product data sheet are reserved.

### General Instructions, Prohibitions and Warnings



**Instruction:** Comply with these instructions and ensure that these instructions are forwarded to end customer, operating and maintenance personnel



**Instruction:** Product is not designed for use by end consumers. Involve technical experts for evaluating the suitability of the product for the intended application.



**Prohibition:** Stop using the product once damaged. Contact seller or manufacturer



**Prohibition:** Avoid any direct, indirect contact during operation and maintenance; Product may be use only in enclosed compartment.



**Warning:** All external load terminal connections like busbars or insulated wiring have to be installed according to newest standards for electrical installation and safety.



**Warning:** A safe isolation between load potential and all other potentials has to be ensured.



**Warning:** Control circuitry like thyristor control terminals or thermal/fuse switches have to be installed according to newest standards for electrical installation and safety.



**Warning:** A safe electrical isolation between all secondary circuits and load potential has to be ensured.



**Warning:** The customer has to ensure a suitable thermo management to avoid any thermal overload during operation under any specified condition.



**Warning:** No excess of the specified mechanical forces is neither allowed during assembly of the frame and the load terminals, nor during transport and operation.



**Warning:** In case of bolt connection no force may be applied to the load terminals during the assembly process (Use second wrench to block bolt head during tightening).



**Warning:** Depending on application a safe connection of the stack frame and the terminals to external components must be ensured to avoid any loosening or corrosion.



**Warning:** The customer must avoid any blocking of the airflow at the inlet and outlet of the heatsink or fan.



**Warning:** A minimum distance of 200mm has to be kept to inflammable materials.