

Data Sheet

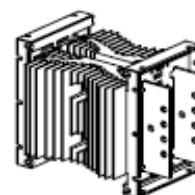


Infineon Technologies Bipolar
 GmbH & Co. KG

D1800N48T-K0.2.7S/1-E01

1 Diode
 Assembly for
 Air Cooling

Sales Type 1D1800NK02SU29205
 Order Number SP000249064
 Material Number 29205



Electrical Properties

Nominal B6U AC current per phase	$T_A = 45^\circ\text{C}$	I_{RMS}	1158	A
Nominal B6U DC current (6 blocks)	$T_A = 45^\circ\text{C}$	I_{DC}	1419	A
DC Current	$T_A = 45^\circ\text{C}$	I_{DC}	580	A
Nominal AC voltage	+/-10%	V_{RMS}	1500	V
Nominal B6U DC voltage	+/-10%	V_{DC}	2030	V
Nominal B6U power losses (per block)	$T_A = 45^\circ\text{C}$	P_{Loss}	0,58	kW

Mechanical Properties

Total width	on mounting plane	W	221	mm
Total height	on mounting plane	H	253	mm
Total depth	over mounting plane	D	295	mm
Weight			8,8	kg
Mounting torque frame (M6/M8 with washer)	+/-15%		8 / 24	Nm
Assembly torque terminals (M10 with washer)	+/-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			2000	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 ²

semiconductor properties

type designation		see according data sheet	1 x	D1800N48T
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Product not for End Consumer
 See General Instructions on last page !!!

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Data Sheet



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Ambient Temperature vs. Losses and Current in DC 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	695	695	149	680	680	680	680	0,1782	no
30	665	665	149	655	655	655	655	0,1794	no
35	636	636	150	630	630	630	630	0,1806	no
40	607	607	150	605	605	605	605	0,1817	no
45	578	578	151	580	580	580	580	0,1829	no
50	550	550	151	555	555	555	555	0,1840	no
55	522	522	152	530	530	530	530	0,1851	no
60	494	494	152	505	505	505	505	0,1864	no
65	466	466	153	479	479	479	479	0,1881	no
70	437	437	153	453	453	453	453	0,1898	no
75	410	410	153	428	428	428	428	0,1914	no
80	382	382	154	401	401	401	401	0,1935	no
Device	D1800N		Circuit	DC		Cooling mode	natural air cooling		
Heatsink	K0,2.7		Number of arms	1					
Line voltage [V]	1500		Number of heatsinks	1					
R. peak voltage [V]	4800		DC circuit voltage [V]	2030					

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	687	4121	148	544	942	1332	1632	0,1785	no
30	657	3945	148	526	911	1289	1579	0,1797	no
35	628	3771	149	509	881	1246	1526	0,1809	no
40	600	3599	149	491	850	1202	1472	0,1820	no
45	572	3430	150	473	819	1158	1419	0,1831	no
50	544	3263	150	455	788	1114	1365	0,1843	no
55	516	3098	151	437	757	1070	1311	0,1854	no
60	488	2931	151	418	725	1025	1255	0,1867	no
65	460	2761	152	399	691	978	1198	0,1884	no
70	433	2595	152	380	658	931	1140	0,1901	no
75	405	2432	153	361	625	884	1082	0,1917	no
80	378	2266	153	341	590	835	1022	0,1938	no
Device	D1800N		Circuit	B6U, B6C		Cooling mode	natural air cooling		
Heatsink	K0,2.7		Number of arms	6					
Line voltage [V]	1500		Number of heatsinks	6					
R. peak voltage [V]	4800		DC circuit voltage [V]	2030					

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.

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.eupec.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.