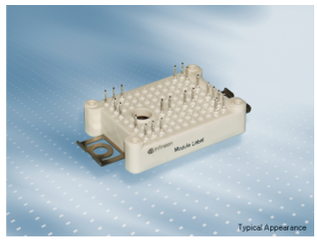
chanhvinh.com

EasyBRIDGE module with CoolSiC™ Schottky diode and PressFIT / NTC

Features



- Electrical features
  - V_{CES} = 1200 V
  - $I_{C\ nom}$ = 40 A / I_{CRM} = 80 A
  - CoolSiC™ Schottky diode gen 5
  - High dynamic robustness
  - $T_{vj\ op}$ = 150 °C
- Mechanical features
  - Compact design
  - Rugged mounting due to integrated mounting clamps
  - PressFIT contact technology
  - Integrated NTC temperature sensor
  - Al_2O_3 substrate with low thermal resistance

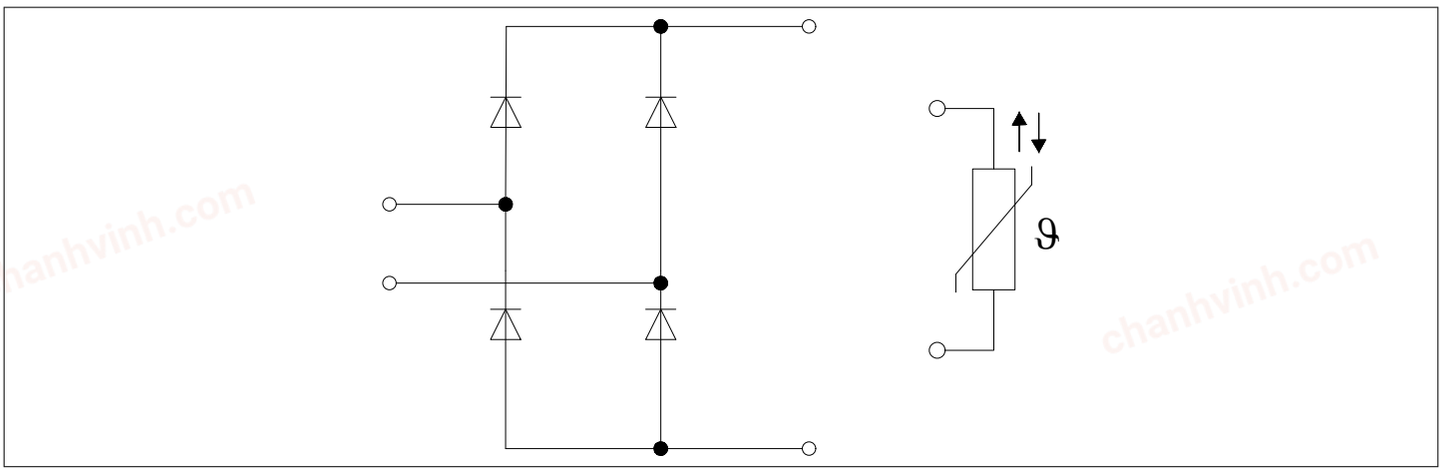
Potential applications

- DC charger for EV

Product validation

- Qualified for industrial applications according to the relevant tests of IEC 60747, 60749 and 60068

Description



chanhvinh.com

Table of contents

Description . . . 1
Features . . . 1
Potential applications . . . 1
Product validation . . . 1
Table of contents . . . 2
1 Package . . . 3
2 Diode, Rectifier . . . 3
3 NTC-Thermistor . . . 4
4 Characteristics diagrams . . . 5
5 Circuit diagram . . . 6
6 Package outlines . . . 7
7 Module label code . . . 8
Disclaimer . . . 9

chanhvinh.com

chanhvinh.com

1 Package

Table 1 Insulation Coordination

Parameter	Symbol	Note or test condition	Values	Unit
Isolation test voltage	V_{ISOL}	RMS, f = 50 Hz, t = 1 min	3.0	kV
Internal Isolation		basic insulation (class 1, IEC 61140)	Al_2O_3	
Creepage distance	d_{Creep}	terminal to heatsink	11.5	mm
Creepage distance	d_{Creep}	terminal to terminal	6.3	mm
Clearance	d_{Clear}	terminal to heatsink	10.0	mm
Clearance	d_{Clear}	terminal to terminal	5.0	mm
Comparative tracking index	*CTI*		> 200	
RTI Elec.	*RTI*	housing	140	°C

Table 2 Characteristic Values

Parameter	Symbol	Note or test condition	Values			Unit
			Min.	Typ.	Max.	
Stray inductance module	L_{sCE}			10		nH
Module lead resistance, terminals - chip	$R_{AA'+CC'}$	T_H=25°C, per switch		1.9		mΩ
Storage temperature	T_{stg}		-40		125	°C
Mounting force per clamp	*F*		20		50	N
Weight	*G*			22		g

Note: The current under continuous operation is limited to 25 A rms per connector pin.
Designed for storage conditions according to Infineon TR14 (Application Note “Storage of Products Supplied by Infineon Technologies) .
Designed for climate conditions without condensation or precipitation.

2 Diode, Rectifier

Table 3 Maximum Rated Values

Parameter	Symbol	Note or test condition	Values	Unit
Repetitive peak reverse voltage	V_{RRM}	T_{vj} = 25 °C	1200	V
Maximum RMS forward current per chip	I_{FRMSM}	T_H = 55 °C	40	A
Maximum RMS current at rectifier output	I_{RMSM}	T_H = 55 °C	55	A

chanhvinh.com

Table 3 Maximum Rated Values (continued)

Parameter	Symbol	Note or test condition		Values	Unit
Surge forward current	I_{FSM}	t_P = 10 ms	T_{vj} = 25 °C	295	A
			T_{vj} = 150 °C	240	
I^2t - value	I^2t	t_P = 10 ms	T_{vj} = 25 °C	435	A^2s
			T_{vj} = 150 °C	285	

Table 4 Characteristic Values

Parameter	Symbol	Note or test condition		Values			Unit
				Min.	Typ.	Max.	
Forward voltage	V_F	I_F = 40 A	T_{vj} = 150 °C		1.85		V
Reverse current	I_r	T_{vj} = 150 °C, V_R = 1200 V			0.116		mA
Thermal resistance, junction to heatsink	R_{thJH}	per diode			0.960		K/W
Temperature under switching conditions	$T_{vj, op}$			-40		150	°C

3 NTC-Thermistor

Table 5 Characteristic Values

Parameter	Symbol	Note or test condition	Values			Unit
			Min.	Typ.	Max.	
Rated resistance	R_{25}	T_{NTC} = 25 °C		5		kΩ
Deviation of R_{100}	$\Delta R/R$	T_{NTC} = 100 °C, R_{100} = 493 Ω	-5		5	%
Power dissipation	P_{25}	T_{NTC} = 25 °C			20	mW
B-value	$B_{25/50}$	$R_2 = R_{25} \exp[B_{25/50}(1/T_2\text{-}1/(298{,}15\ K))]$		3375		K
B-value	$B_{25/80}$	$R_2 = R_{25} \exp[B_{25/80}(1/T_2\text{-}1/(298{,}15\ K))]$		3411		K
B-value	$B_{25/100}$	$R_2 = R_{25} \exp[B_{25/100}(1/T_2\text{-}1/(298{,}15\ K))]$		3433		K

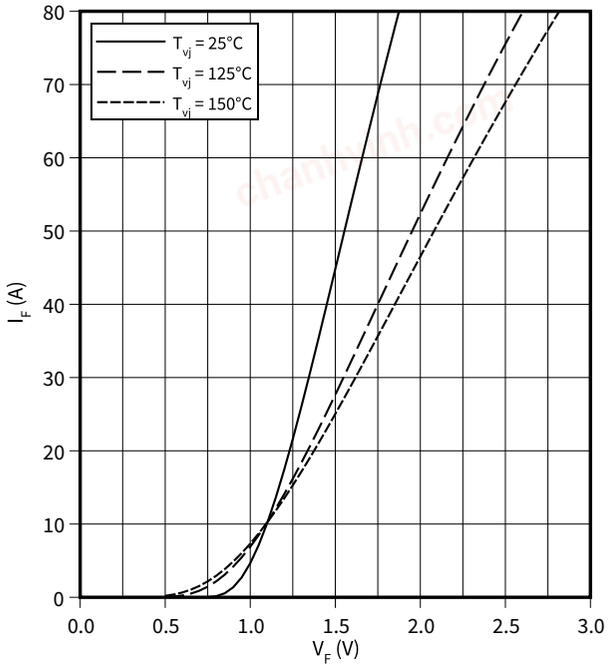
Note: Specification according to the valid application note.

chanhvinh.com

4 Characteristics diagrams

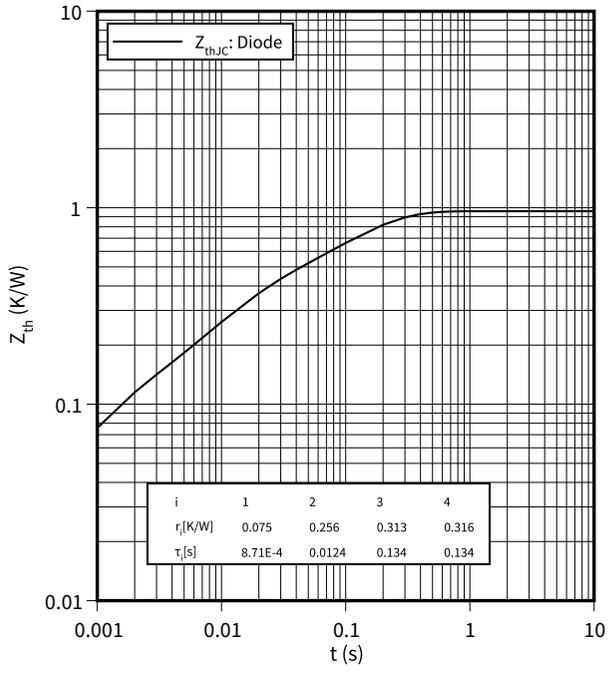
forward characteristic (typical), Diode, Rectifier

$I_F = f(V_F)$



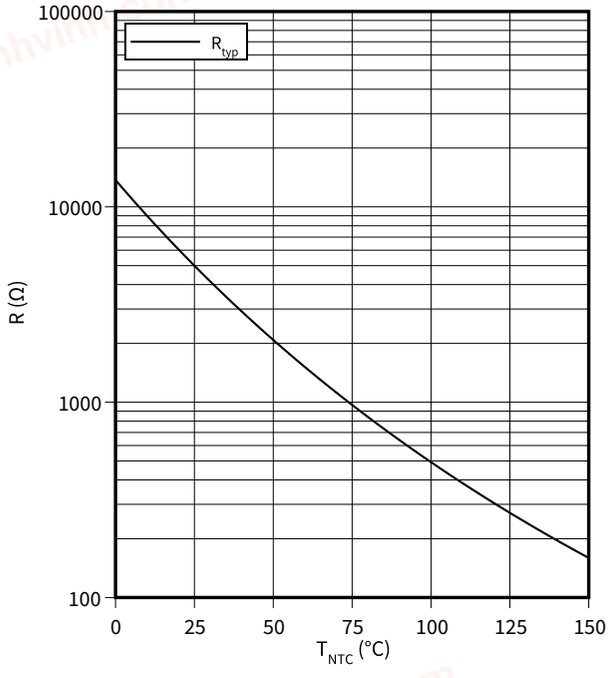
transient thermal impedance, Diode, Rectifier

$Z_{th} = f(t)$



temperature characteristic (typical), NTC-Thermistor

$R = f(T_{NTC})$



chanhvinh.com

5 Circuit diagram

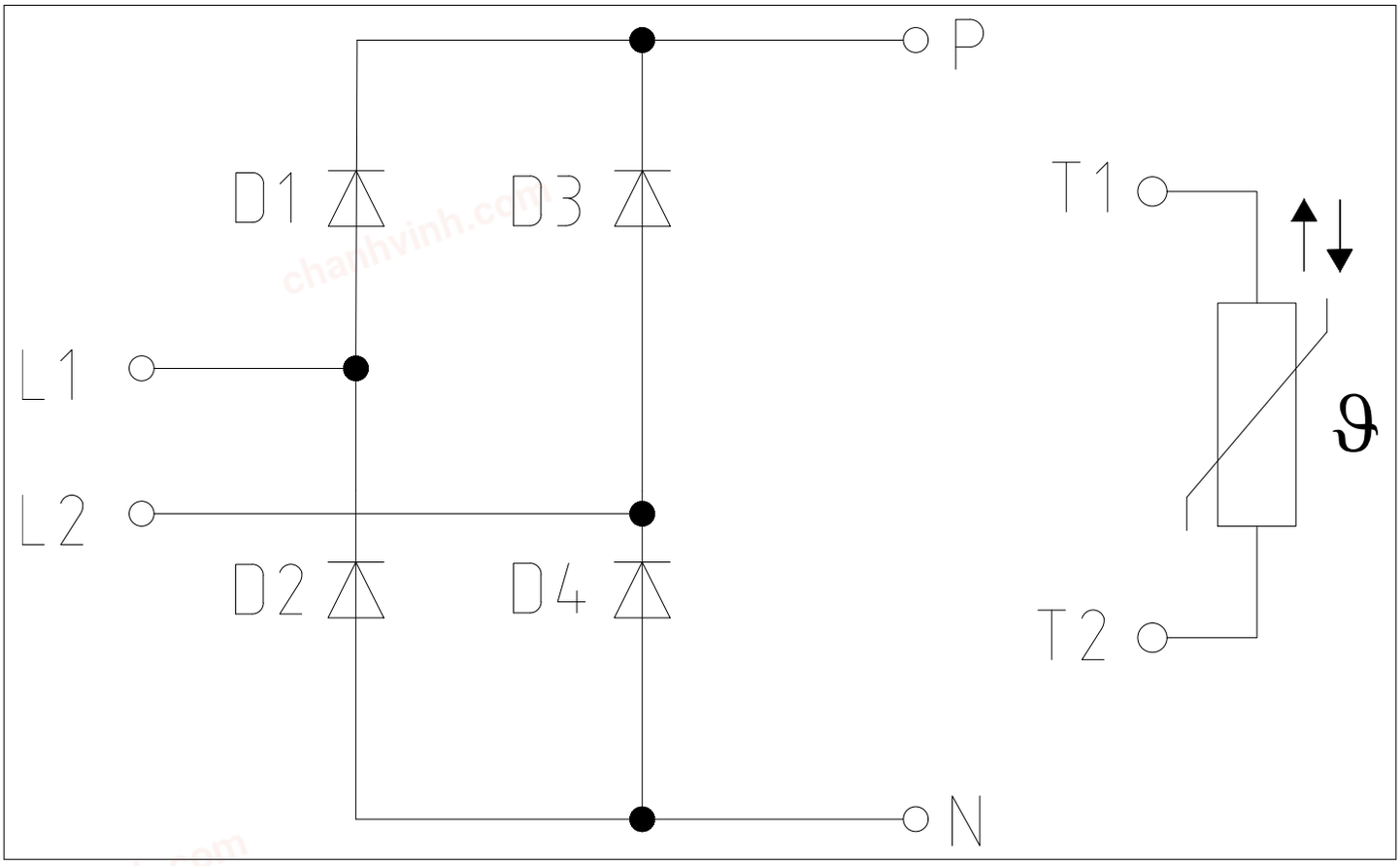


Figure 2

chanhvinh.com

6 Package outlines

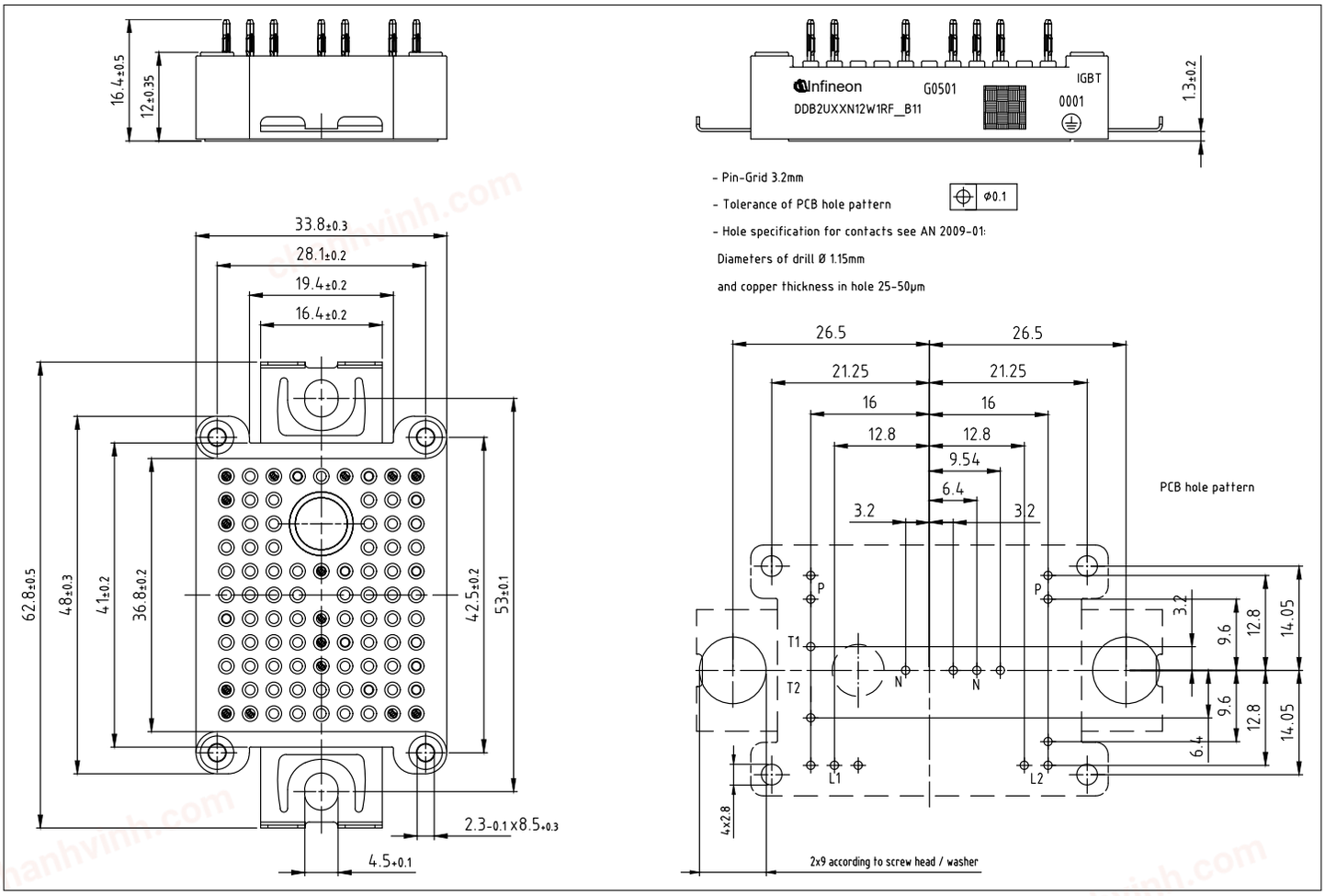


Figure 3

chanhvinh.com

7 Module label code

Module label code			
Code format	Data Matrix		Barcode Code128
Encoding	ASCII text		Code Set A
Symbol size	16x16		23 digits
Standard	IEC24720 and IEC16022		IEC8859-1
Code content	*Content* Module serial number Module material number Production order number Date code (production year) Date code (production week)	*Digit* 1 – 5 6 - 11 12 - 19 20 – 21 22 – 23	*Example* 71549 142846 55054991 15 30
Example	 715491428465505499115 30		 715491428465505499115 30

Figure 4

chanhvinh.com

Trademarks

All referenced product or service names and trademarks are the property of their respective owners.

Edition 2021-02-10

Published by

Infineon Technologies AG

81726 Munich, Germany

© 2021 Infineon Technologies AG

All Rights Reserved.

Do you have a question about any aspect of this document?

Email: erratum@infineon.com

Document reference
IFX-

IMPORTANT NOTICE

The information given in this document shall in no event be regarded as a guarantee of conditions or characteristics (“Beschaffenheitsgarantie”) .

With respect to any examples, hints or any typical values stated herein and/or any information regarding the application of the product, Infineon Technologies hereby disclaims any and all warranties and liabilities of any kind, including without limitation warranties of non-infringement of intellectual property rights of any third party.

In addition, any information given in this document is subject to customer’s compliance with its obligations stated in this document and any applicable legal requirements, norms and standards concerning customer’s products and any use of the product of Infineon Technologies in customer’s applications.

The data contained in this document is exclusively intended for technically trained staff. It is the responsibility of customer’s technical departments to evaluate the suitability of the product for the intended application and the completeness of the product information given in this document with respect to such application.

Please note that this product is not qualified according to the AEC Q100 or AEC Q101 documents of the Automotive Electronics Council.

WARNINGS

Due to technical requirements products may contain dangerous substances. For information on the types in question please contact your nearest Infineon Technologies office.

Except as otherwise explicitly approved by Infineon Technologies in a written document signed by authorized representatives of Infineon Technologies, Infineon Technologies’ products may not be used in any applications where a failure of the product or any consequences of the use thereof can reasonably be expected to result in personal injury.