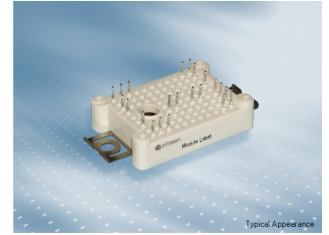


## EasyBRIDGE module with CoolSiC™ Schottky diode and PressFIT / NTC

### Features

- Electrical features
  - $V_{CES} = 1200\text{ V}$
  - $I_{C\text{ nom}} = 20\text{ A} / I_{CRM} = 40\text{ A}$
  - CoolSiC™ Schottky diode gen 5
  - High dynamic robustness
  - $T_{vj\text{ op}} = 150\text{ °C}$
- Mechanical features
  - Compact design
  - Rugged mounting due to integrated mounting clamps
  - PressFIT contact technology
  - Integrated NTC temperature sensor
  - $\text{Al}_2\text{O}_3$  substrate with low thermal resistance



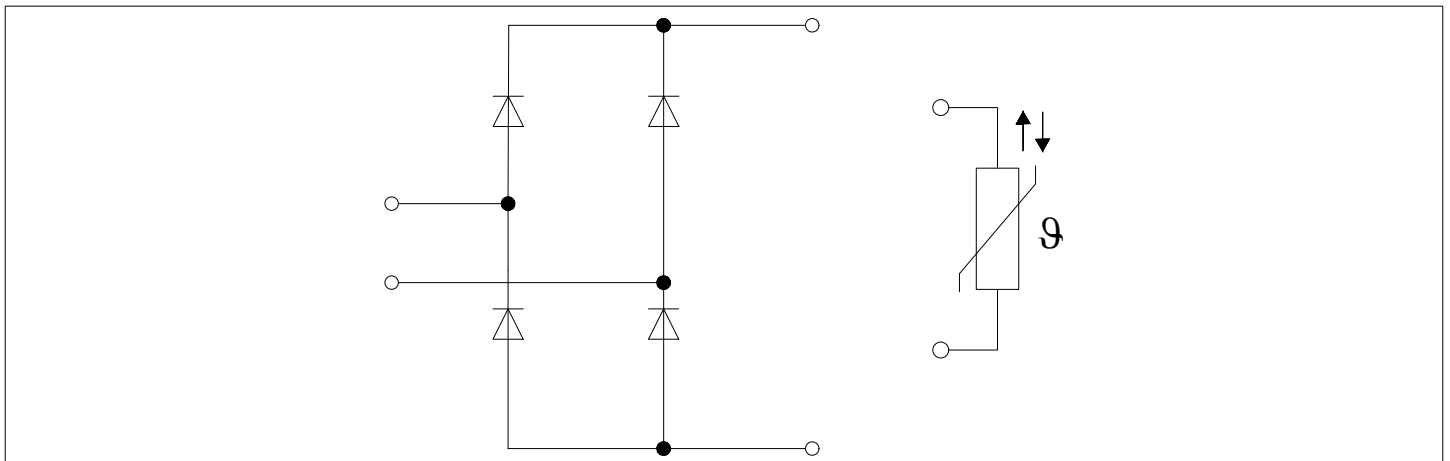
### Potential applications

- DC charger for EV

### Product validation

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

### Description



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## 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	$R_{AA'+CC'}$	$T_H = 25^\circ C$ , per switch		2		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	$V_{RRM}$	$T_{vj} = 25^\circ C$	1200	V
Maximum RMS forward current per chip	$I_{FRMSM}$	$T_H = 70^\circ C$	20	A
Maximum RMS current at rectifier output	$I_{RMSM}$	$T_H = 70^\circ C$	25	A

**Table 3 Maximum Rated Values (continued)**

Parameter	Symbol	Note or test condition	Values	Unit
Surge forward current	$I_{FSM}$	$t_p = 10 \text{ ms}$ $T_{vj} = 25 \text{ }^\circ\text{C}$	150	A
			$T_{vj} = 150 \text{ }^\circ\text{C}$	
$I^2t$ - value	$I^2t$	$t_p = 10 \text{ ms}$ $T_{vj} = 25 \text{ }^\circ\text{C}$	110	$\text{A}^2\text{s}$
			$T_{vj} = 150 \text{ }^\circ\text{C}$	

**Table 4 Characteristic Values**

Parameter	Symbol	Note or test condition	Values			Unit
			Min.	Typ.	Max.	
Forward voltage	$V_F$	$I_F = 20 \text{ A}$ $T_{vj} = 150 \text{ }^\circ\text{C}$		1.85		V
Reverse current	$I_r$	$T_{vj} = 150 \text{ }^\circ\text{C}$ , $V_R = 1200 \text{ V}$		0.058		mA
Thermal resistance, junction to heatsink	$R_{thJH}$	per diode		1.56		K/W
Temperature under switching conditions	$T_{vj, op}$		-40		150	$^\circ\text{C}$

### 3 NTC-Thermistor

**Table 5 Characteristic Values**

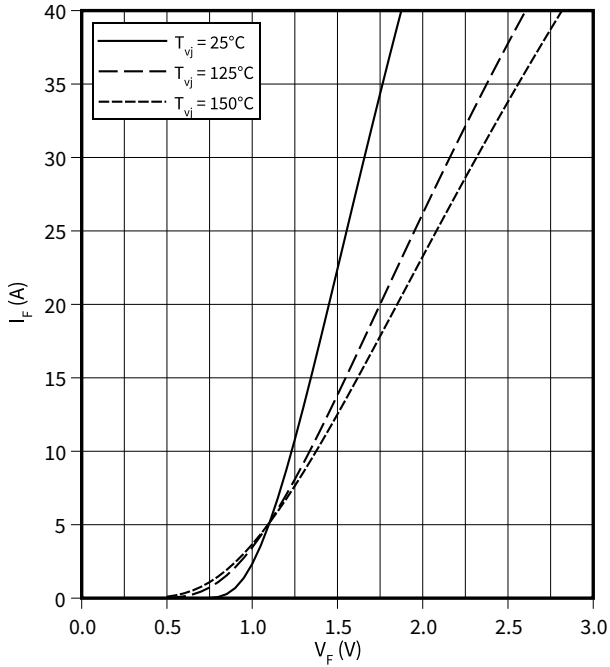
Parameter	Symbol	Note or test condition	Values			Unit
			Min.	Typ.	Max.	
Rated resistance	$R_{25}$	$T_{NTC} = 25 \text{ }^\circ\text{C}$		5		$\text{k}\Omega$
Deviation of $R_{100}$	$\Delta R/R$	$T_{NTC} = 100 \text{ }^\circ\text{C}$ , $R_{100} = 493 \text{ }\Omega$	-5		5	%
Power dissipation	$P_{25}$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

Note: Specification according to the valid application note.

## 4 Characteristics diagrams

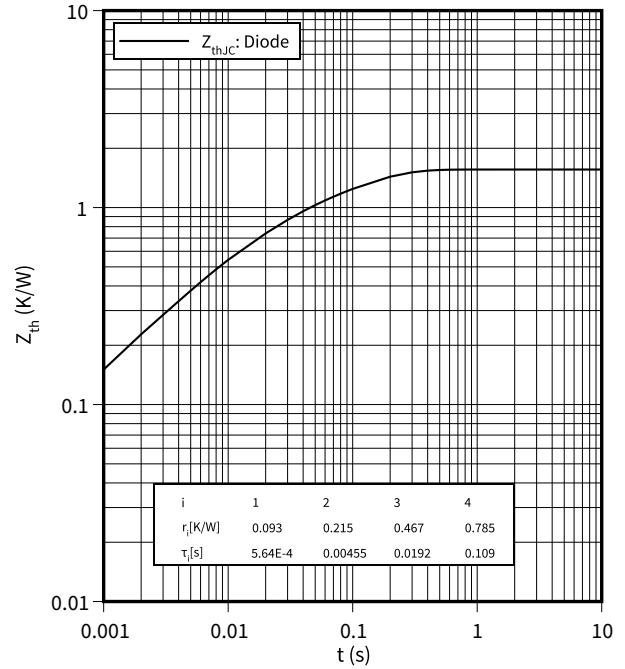
**forward characteristic (typical), Diode, Rectifier**

$$I_F = f(V_F)$$



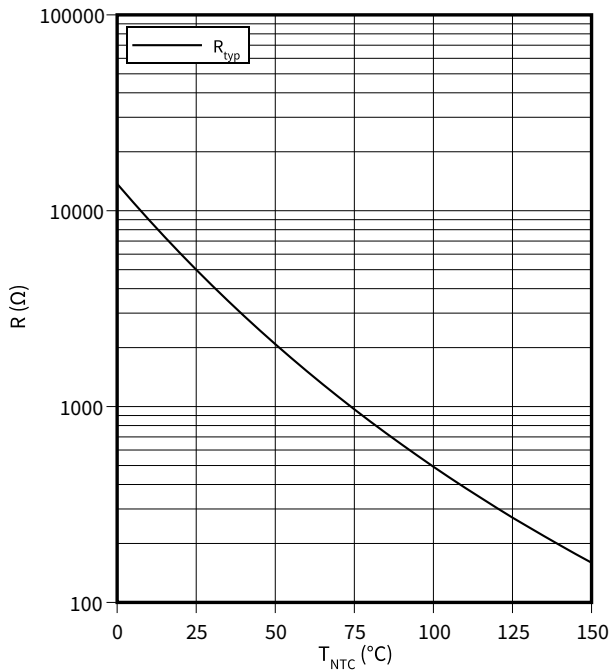
**transient thermal impedance, Diode, Rectifier**

$$Z_{th} = f(t)$$



**temperature characteristic (typical), NTC-Thermistor**

$$R = f(T_{NTC})$$



## 5 Circuit diagram

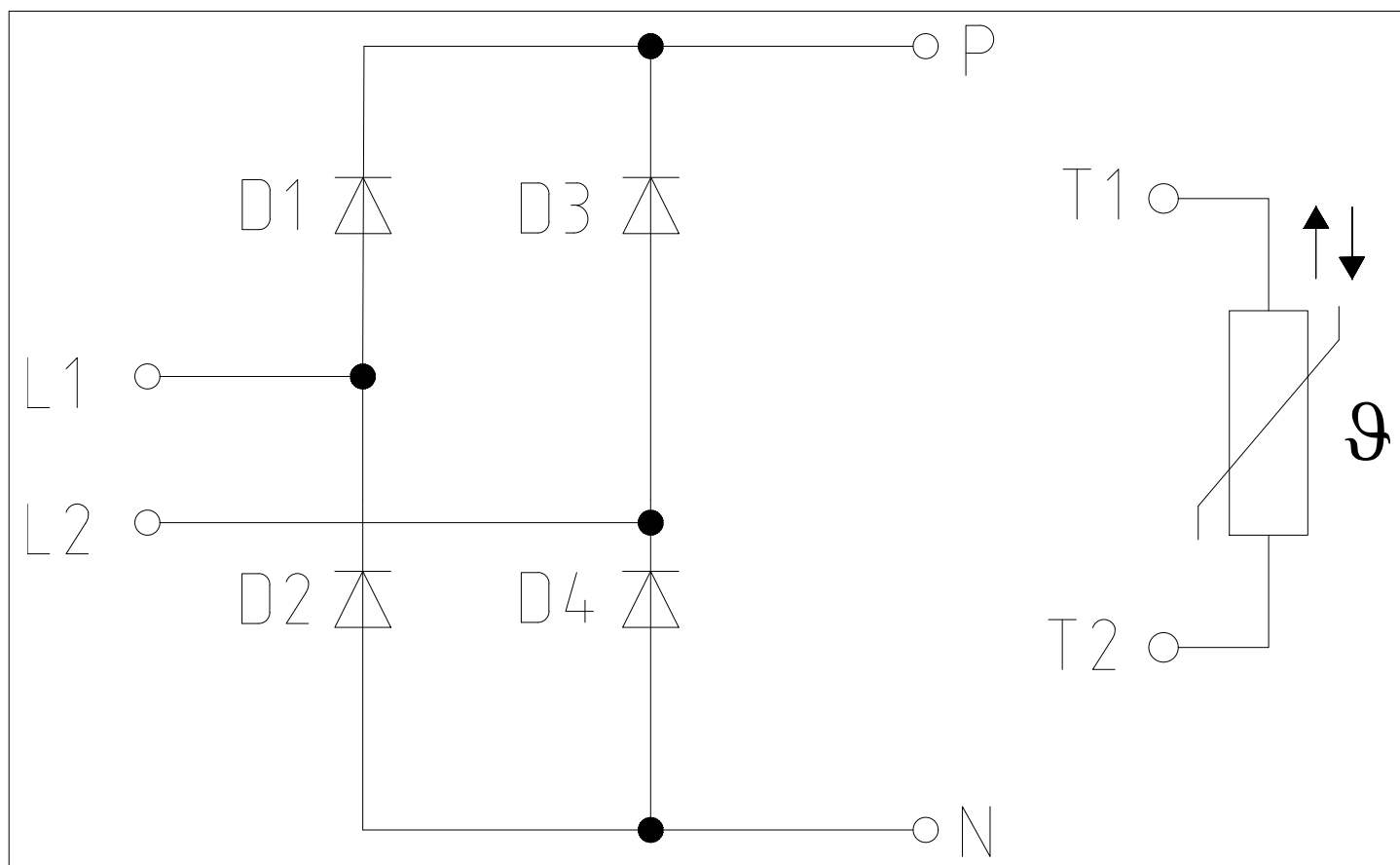


Figure 2

6 Package outlines

6 Package outlines

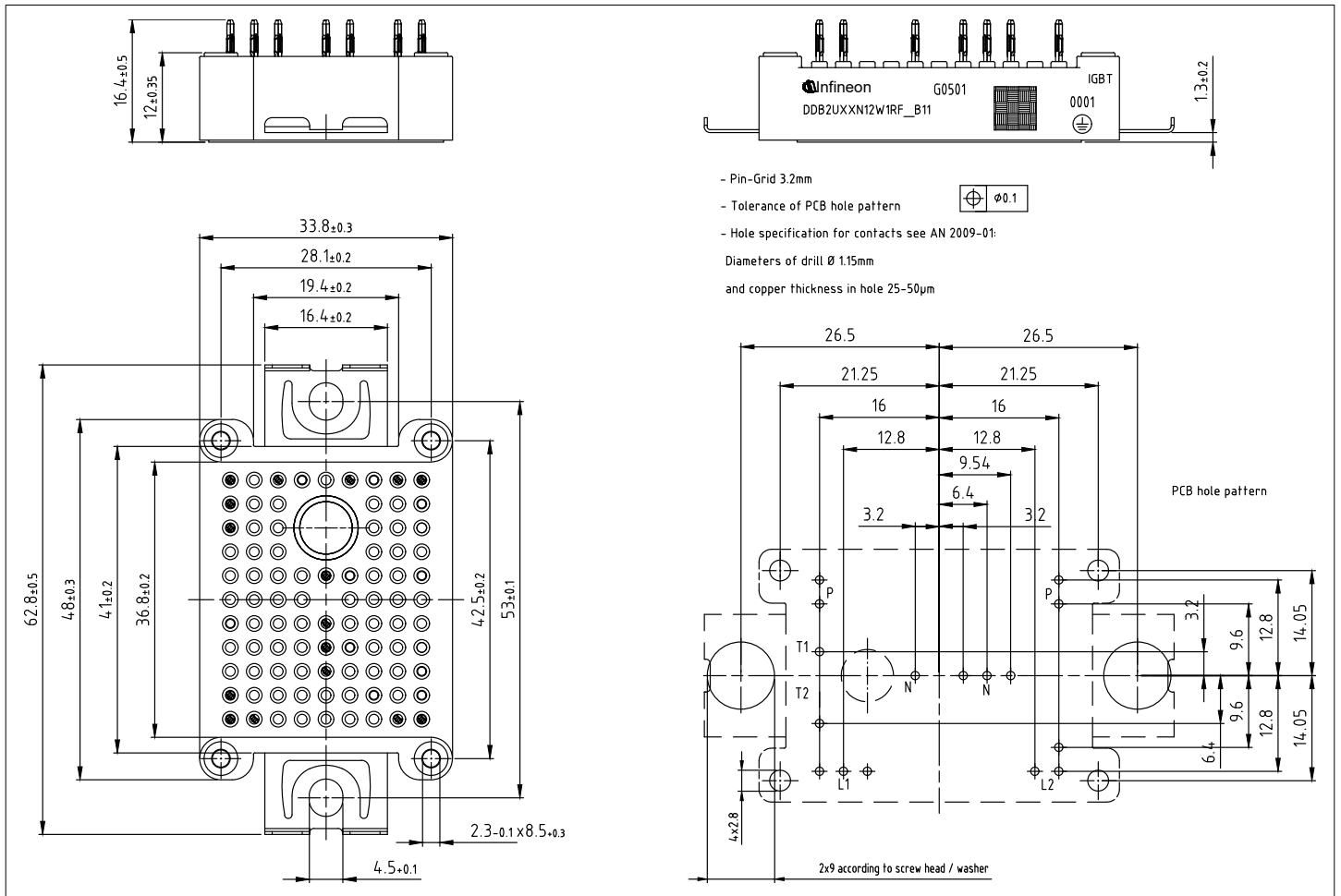

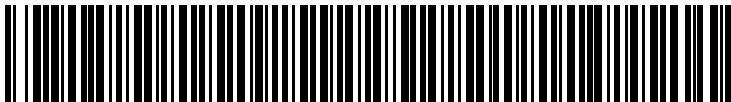


Figure 3

## 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	<i>Content</i>	<i>Digit</i>	<i>Example</i>
	Module serial number	1 - 5	71549
	Module material number	6 - 11	142846
	Production order number	12 - 19	55054991
	Date code (production year)	20 - 21	15
	Date code (production week)	22 - 23	30
Example	 		
	71549142846550549911530		71549142846550549911530

**Figure 4**