

HB1S015R33IHM

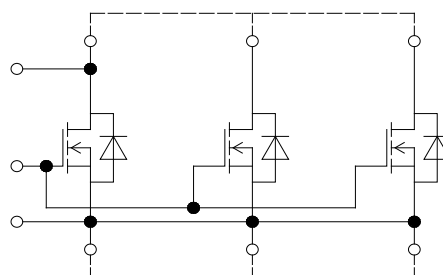
3300V N-Channel Silicon Carbide Power MOSFET

Applications

High-power converters
Medium-voltage converters
Power transmission and distribution

Features

$V_{DSS} = 3300\text{ V}$
High dynamic robustness
High short-circuit capability
Low $R_{DS(on)}$
Low Switching Losses
Low Q_g and C_{rss}
AlN Substrate with Low Thermal Resistance
 $T_{vj\text{ op}} = 150^{\circ}\text{C}$
3.0 KV AC 1 min insulation



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1. MOSFET

Maximum rated values

Table 1

Parameter	Symbol	Condition	T _{vj}	Values	Unit
Drain-Source Voltage	V _{DSS}	V _{GS} = 0 V, I _D = 1mA	25 °C	3300	V
DC drain current *1	I _D	T _C = 100 °C	150 °C	1200	A
Pulsed drain current *2	I _D pulse		150 °C	2400	A
Gate-source voltage	V _{GS}			-10/+25	V

*1 Specified by design, not tested in production.

*2 Verified by design, Pulse width limited by T_{vj max}=150 °C

Characteristic values

Table 2

Parameter	Symbol	Condition	T _{vj}	Values			Unit
				Min.	Typ.	Max.	
Drain-source on-state resistance	R _{DS(on)}	I _D = 480 A, V _{GS} = 18 V	25 °C		1.5	2	mΩ
Gate threshold voltage	V _{GS,th}	I _D = 360 mA, V _{DS} = V _{GS}	25 °C	2	2.9	4	V
Zero gate voltage drain current	I _{DSS}	V _{GS} = 0 V, V _{DSS} = 3300 V				500	μA
Gate-source leakage current	I _{GSS+}	V _{GS} = 22 V, V _{DS} = 0 V				6	μA
	I _{GSS-}	V _{GS} = -5 V, V _{DS} = 0 V				-2.4	μA

2. Body diode

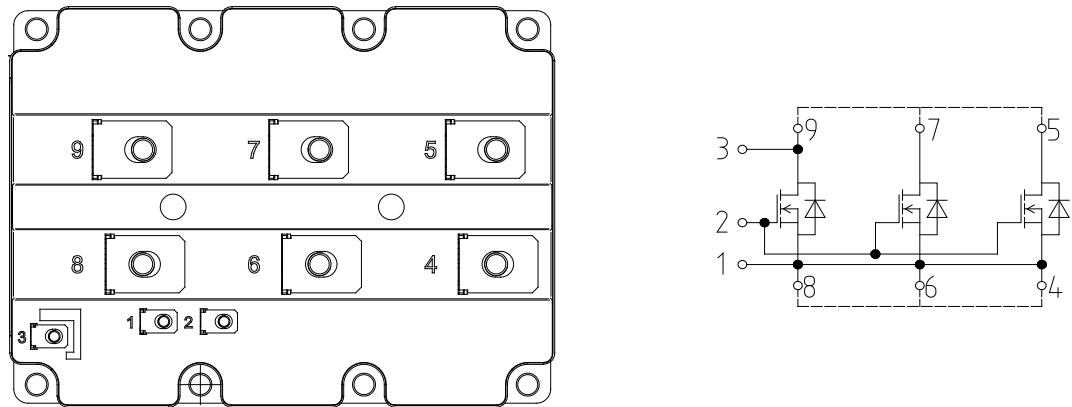
Characteristic values

Table 3

Parameter	Symbol	Condition	T _{vj}	Values			Unit
				Min.	Typ.	Max.	
Forward voltage	V _{F,SD}	I _{F,S} = 240 A, V _{GS} = -3 V	25 °C		3.3		V

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3. Schematic and Pin Out



4. Package outlines

