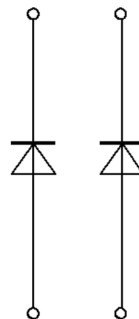


高绝缘等级模块
high insulated module



$V_{CES} = 6500V$
 $I_{C\ nom} = 250A / I_{CRM} = 500A$

典型应用

- 中压变流器
- 牵引变流器

Typical Applications

- Medium Voltage Converters
- Traction Drives

机械特性

- 碳化硅铝 (AlSiC) 基板提供更高的温度循环能力
- 扩大存储温度范围至 $T_{stg} = -55^{\circ}C$
- 封装的 CTI > 600
- 加强绝缘封装, 10.2kV 交流 1分钟
- 高爬电距离和电气间隙

Mechanical Features

- AlSiC Base Plate for increased Thermal Cycling Capability
- Extended Storage Temperature down to $T_{stg} = -55^{\circ}C$
- Package with CTI > 600
- Package with enhanced Insulation of 10.2kV AC 1min
- High Creepage and Clearance Distances

Module Label Code

Barcode Code 128



DMX - Code



Content of the Code

Content of the Code	Digit
Module Serial Number	1 - 5
Module Material Number	6 - 11
Production Order Number	12 - 19
Datecode (Production Year)	20 - 21
Datecode (Production Week)	22 - 23

prepared by: DTH	date of publication: 2014-06-16	
approved by: DTS	revision: 3.0	UL approved (E83335)

二极管, 逆变器 / Diode, Inverter

最大额定值 / Maximum Rated Values

反向重复峰值电压 Repetitive peak reverse voltage	$T_{vj} = 125^{\circ}\text{C}$ $T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = -50^{\circ}\text{C}$	V_{RRM}	6500 6500 5900	V
连续正向直流电流 Continuous DC forward current		I_F	250	A
正向重复峰值电流 Repetitive peak forward current	$t_P = 1 \text{ ms}$	I_{FRM}	500	A
I^2t -值 I^2t - value	$V_R = 0 \text{ V}$, $t_P = 10 \text{ ms}$, $T_{vj} = 125^{\circ}\text{C}$	I^2t	52,0	kA^2s
最大损耗功率 Maximum power dissipation	$T_{vj} = 125^{\circ}\text{C}$	P_{RQM}	1000	kW
最小开通时间 Minimum turn-on time		$t_{on \text{ min}}$	10,0	μs

特征值 / Characteristic Values

			min.	typ.	max.	
正向电压 Forward voltage	$I_F = 250 \text{ A}$, $V_{GE} = 0 \text{ V}$ $I_F = 250 \text{ A}$, $V_{GE} = 0 \text{ V}$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$	V_F		3,00 2,95	3,50 3,50 V
反向恢复峰值电流 Peak reverse recovery current	$I_F = 250 \text{ A}$, $-di_F/dt = 1000 \text{ A}/\mu\text{s}$ ($T_{vj}=125^{\circ}\text{C}$) $V_R = 3600 \text{ V}$ $V_{GE} = -15 \text{ V}$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$	I_{RM}		370 400	A A
恢复电荷 Recovered charge	$I_F = 250 \text{ A}$, $-di_F/dt = 1000 \text{ A}/\mu\text{s}$ ($T_{vj}=125^{\circ}\text{C}$) $V_R = 3600 \text{ V}$ $V_{GE} = -15 \text{ V}$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$	Q_r		290 540	μC μC
反向恢复损耗 (每脉冲) Reverse recovery energy	$I_F = 250 \text{ A}$, $-di_F/dt = 1000 \text{ A}/\mu\text{s}$ ($T_{vj}=125^{\circ}\text{C}$) $V_R = 3600 \text{ V}$ $V_{GE} = -15 \text{ V}$	$T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$	E_{rec}		470 1000	mJ mJ
结 - 外壳热阻 Thermal resistance, junction to case	每个二极管 / per diode		R_{thJC}			56,0 K/kW
外壳 - 散热器热阻 Thermal resistance, case to heatsink	每个二极管 / per diode $\lambda_{\text{Paste}} = 1 \text{ W}/(\text{m}\cdot\text{K})$ / $\lambda_{\text{grease}} = 1 \text{ W}/(\text{m}\cdot\text{K})$		R_{thCH}		42,0	K/kW
在开关状态下温度 Temperature under switching conditions			$T_{vj \text{ op}}$	-50		125 $^{\circ}\text{C}$

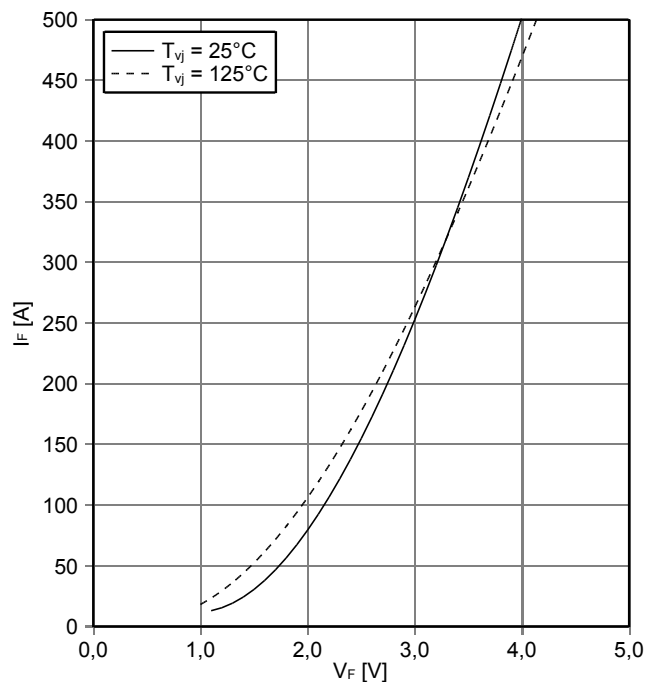
模块 / Module

绝缘测试电压 Isolation test voltage	RMS, f = 50 Hz, t = 1 min.	V _{ISOL}	10,2	kV
局部放电停止电压 Partial discharge extinction voltage	RMS, f = 50 Hz, Q _{PD} typ 10 pC (acc. to IEC 1287)	V _{ISOL}	5,1	kV
DC 稳定性 DC stability	T _{vj} = 25°C, 100 fit	V _{CE D}	3800	V
模块基板材料 Material of module baseplate			AlSiC	
内部绝缘 Internal isolation	基本绝缘 (class 1, IEC 61140) basic insulation (class 1, IEC 61140)		AlN	
爬电距离 Creepage distance	端子至散热器 / terminal to heatsink 端子至端子 / terminal to terminal		56,0 56,0	mm
电气间隙 Clearance	端子至散热器 / terminal to heatsink 端子至端子 / terminal to terminal		26,0 26,0	mm
相对电痕指数 Comperative tracking index		CTI	> 600	
杂散电感,模块 Stray inductance module		L _{sCE}	min. 25	typ. max. nH
模块引线电阻,端子-芯片 Module lead resistance, terminals - chip	T _c = 25°C, 每个开关 / per switch	R _{CC'+EE'} R _{AA'+CC'}	0,36 0,36	mΩ
储存温度 Storage temperature		T _{stg}	-55	125 °C
模块安装的安装扭矩 Mounting torque for modul mounting	螺丝 M6 根据相应的应用手册进行安装 Screw M6 - Mounting according to valid application note	M	4,25	- 5,75 Nm
端子联接扭矩 Terminal connection torque	螺丝 M8 根据相应的应用手册进行安装 Screw M8 - Mounting according to valid application note	M	8,0	- 10 Nm
重量 Weight		G	500	g

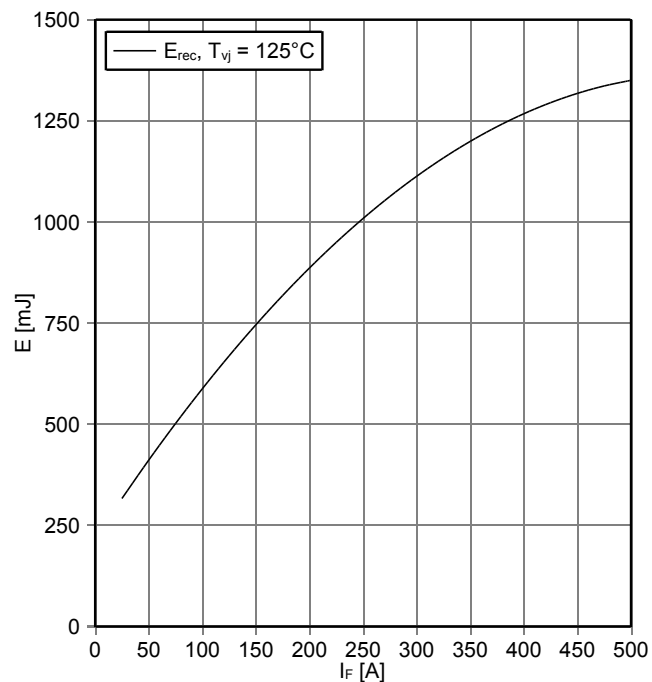
Dynamische Daten gelten in Verbindung mit FZ250R65KE3 Modul
Dynamic data valid in conjunction with FZ250R65KE3 module

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approved by: DTS	revision: 3.0

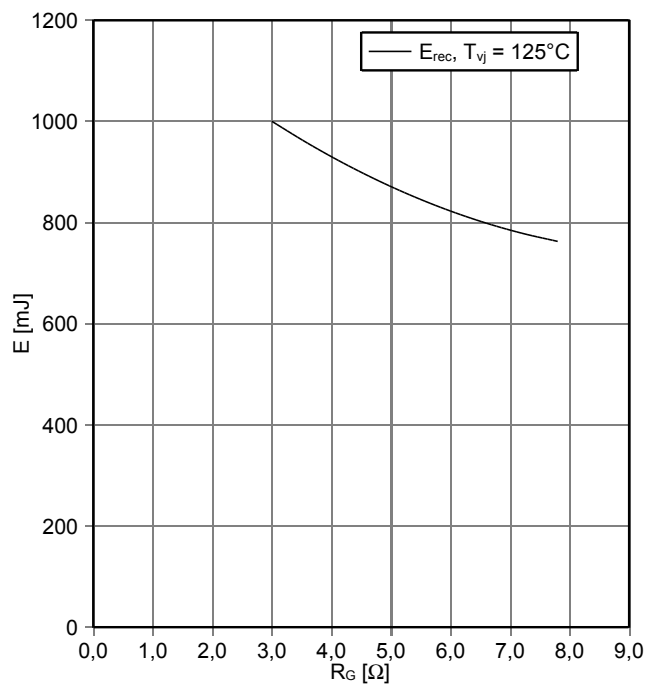
正向偏压特性 二极管,逆变器 (典型)
forward characteristic of Diode, Inverter (typical)
 $I_F = f(V_F)$



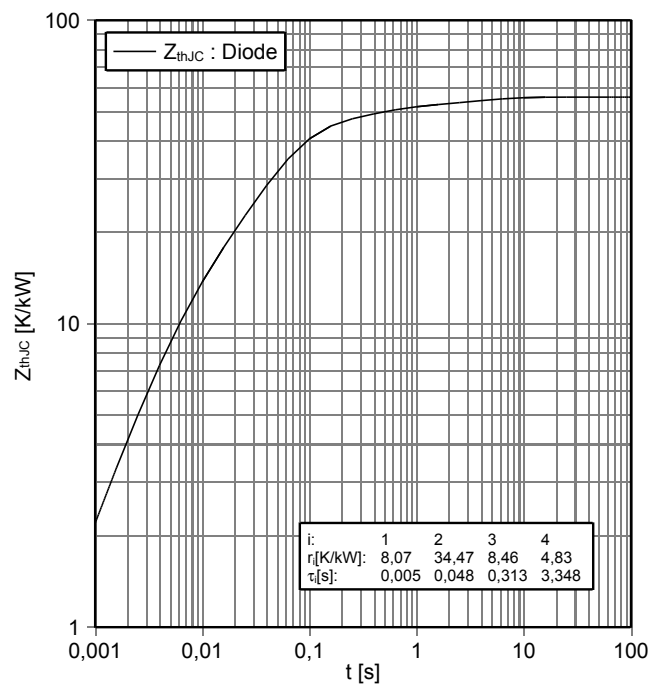
开关损耗 二极管,逆变器 (典型)
switching losses Diode, Inverter (typical)
 $E_{rec} = f(I_F)$
 $R_{Gon} = \Omega, V_{CE} = 3600 V$



开关损耗 二极管,逆变器 (典型)
switching losses Diode, Inverter (typical)
 $E_{rec} = f(R_G)$
 $I_F = 250 A, V_{CE} = 3600 V$

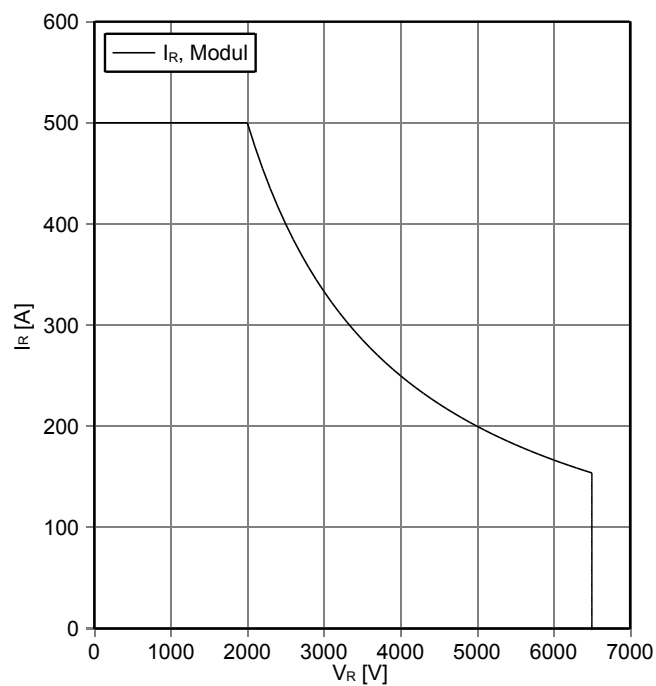


瞬态热阻抗 二极管,逆变器
transient thermal impedance Diode, Inverter
 $Z_{thJC} = f(t)$



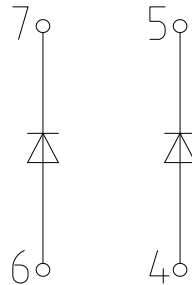
安全工作区 二极管, 逆变器 (SOA)
safe operation area Diode, Inverter (SOA)

$I_R = f(V_R)$
 $T_{vj} = 125^\circ\text{C}$

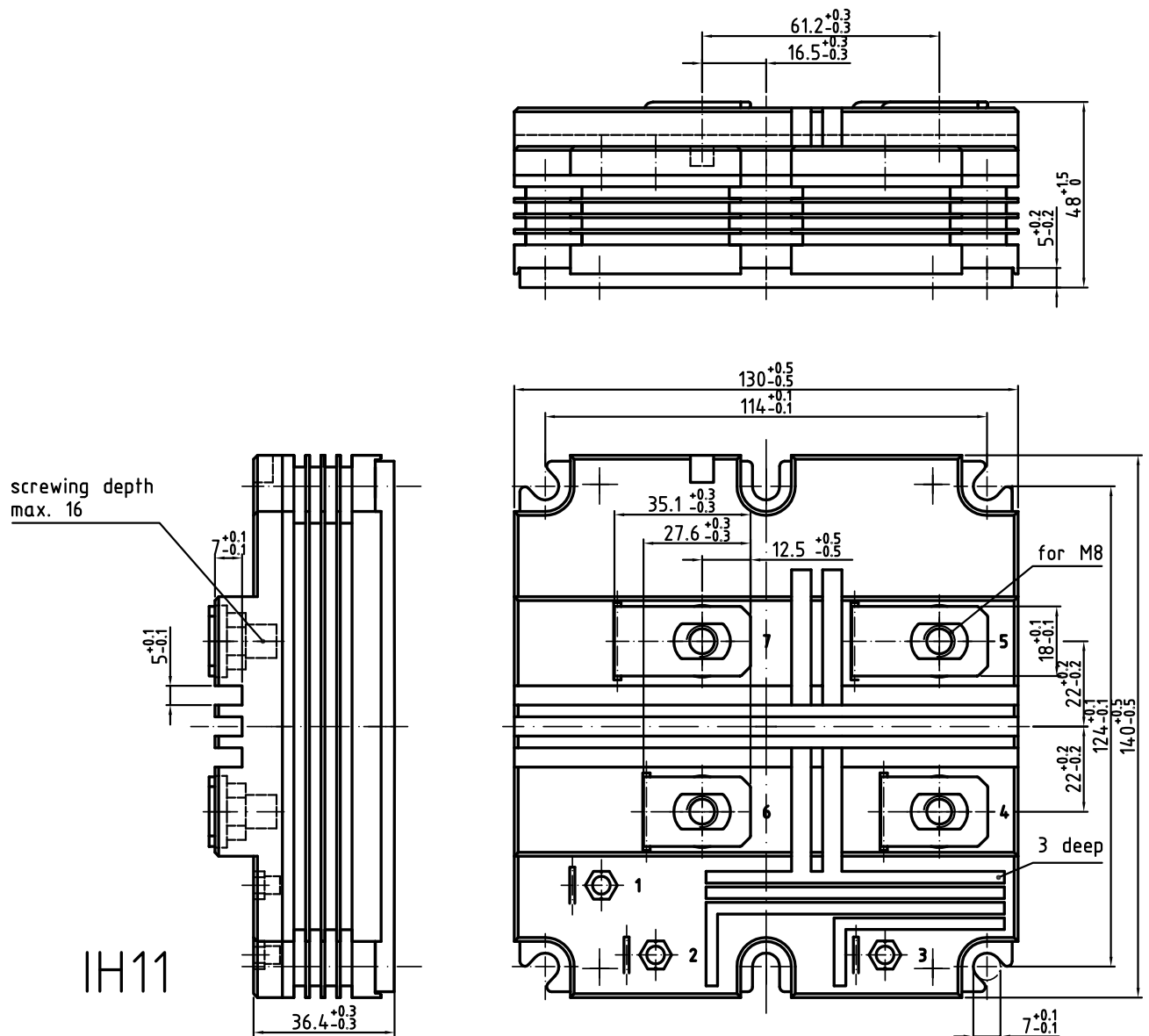


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接线图 / circuit_diagram_headline



封装尺寸 / package outlines



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使用条件和条款

使用条件和条款

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- 得到质量协议的结论

- 建立联合的测试和出厂产品检查，我们可以根据测试的实际情况供货

如果有必要，请根据实际需要类似的说明给你的客户

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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. The information in the valid application- and assembly notes of the module must be considered.

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). 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 realization of any such measures.

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prepared by: DTH	date of publication: 2014-06-16
approved by: DTS	revision: 3.0