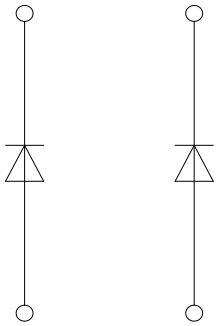
技术信息 / Technical Information

IGBT-模块
IGBT-Module

DD1200S12H4

IHM-B 模块
IHM-B module

初步数据 / Preliminary Data



V_{CES} = 1200V
$I_{C\ nom}$ = 1200A / I_{CRM} = 2400A

典型应用
- 大功率变流器
- 电机传动
- 多电平逆变器
- 风力发电机

Typical Applications
- High power converters
- Motor drives
- Multi level inverter
- Wind turbines

电气特性
- 提高工作结温 $T_{vj\ op}$

Electrical Features
- Extended operating temperature $T_{vj\ op}$

机械特性
- 4 kV 交流　1分钟　绝缘
- 封装的 CTI > 400
- 高功率密度
- IHM B 封装

Mechanical Features
- 4 kV AC 1min insulation
- Package with CTI > 400
- High power density
- IHM B housing

Module Label Code

Barcode Code 128

Sample
00000123456000000000000

DMX - 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

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初步数据
Preliminary Data

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} = 25°C	V_{RRM}	1200	V
连续正向直流电流 Continuous DC forward current		I_F	1200	A
正向重复峰值电流 Repetitive peak forward current	t_P = 1 ms	I_{FRM}	2400	A
I2t-值 I²t - value	V_R = 0 V, t_P = 10 ms, T_{vj} = 125°C V_R = 0 V, t_P = 10 ms, T_{vj} = 150°C	I²t	155 150	kA²s kA²s
最大损耗功率 Maximum power dissipation	T_{vj} = 125°C	P_{RQM}	1200	kW

特征值 / Characteristic Values

			min.	typ.	max.	
正向电压 Forward voltage	I_F = 1200 A, V_{GE} = 0 V I_F = 1200 A, V_{GE} = 0 V I_F = 1200 A, V_{GE} = 0 V	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	V_F		1,80 1,75 1,70	2,35	V V V
反向恢复峰值电流 Peak reverse recovery current	I_F = 1200 A, - di_F/dt = 4950 A/µs (T_{vj}=150°C) V_R = 600 V V_{GE} = -15 V	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	I_{RM}		475 660 720		A A A
恢复电荷 Recovered charge	I_F = 1200 A, - di_F/dt = 4950 A/µs (T_{vj}=150°C) V_R = 600 V V_{GE} = -15 V	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	Q_r		100 195 220		µC µC µC
反向恢复损耗（每脉冲） Reverse recovery energy	I_F = 1200 A, - di_F/dt = 4950 A/µs (T_{vj}=150°C) V_R = 600 V V_{GE} = -15 V	T_{vj} = 25°C T_{vj} = 125°C T_{vj} = 150°C	E_{rec}		45,0 80,0 90,0		mJ mJ mJ
结 - 外壳热阻 Thermal resistance, junction to case	每个二极管 / per diode		R_{thJC}			40,0	K/kW
外壳 - 散热器热阻 Thermal resistance, case to heatsink	每个二极管 / per diode λ_{Paste} = 1 W/(m·K) / λ_{grease} = 1 W/(m·K)		R_{thCH}		22,0		K/kW
在开关状态下温度 Temperature under switching conditions			$T_{vj\,op}$	-40		150	°C

初步数据
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模块 / Module

绝缘测试电压 Isolation test voltage	RMS, f = 50 Hz, t = 1 min.	V_{ISOL}		4,0		kV
模块基板材料 Material of module baseplate				Cu		
内部绝缘 Internal isolation	基本绝缘 (class 1, IEC 61140) basic insulation (class 1, IEC 61140)			Al_2O_3		
爬电距离 Creepage distance	端子至散热器 / terminal to heatsink 端子至端子 / terminal to terminal			32,0 32,0		mm
电气间隙 Clearance	端子至散热器 / terminal to heatsink 端子至端子 / terminal to terminal			19,0 19,0		mm
相对电痕指数 Comperative tracking index		CTI		> 400		
			min.	typ.	max.	
杂散电感,模块 Stray inductance module		L_{sCE}		18		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	$R_{CC'+EE'}$		0,26		mΩ
储存温度 Storage temperature		T_{stg}	-40		150	°C
模块安装的安装扭距 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
端子联接扭距 Terminal connection torque	螺丝 M4 根据相应的应用手册进行安装 Screw M4 - Mounting according to valid application note 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	1,7 8,0	- -	2,1 10	Nm Nm
重量 Weight		G		1300		g

Dynamische Daten gehen in Verbindung mit FZ2400R12HP4_B9 und RGon=1,5Ohm
Dynamic data valid in conjunction with FZ2400R12HP4_B9 and RGon=1,5Ohm

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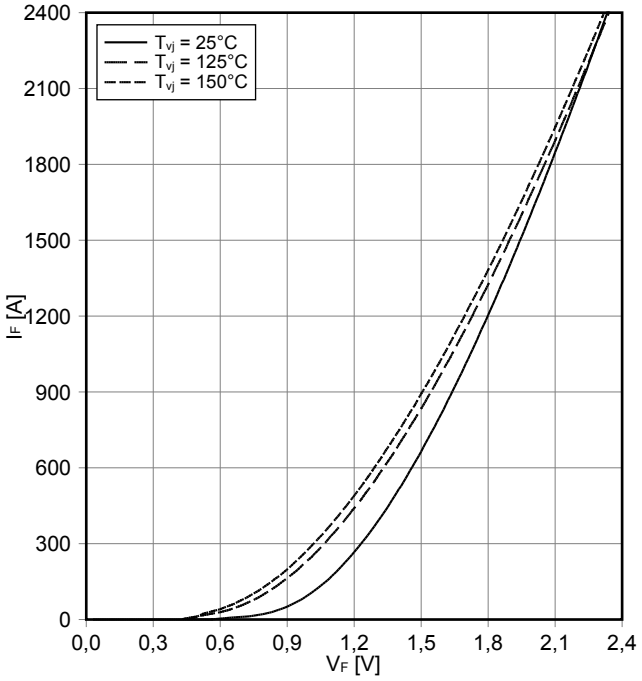
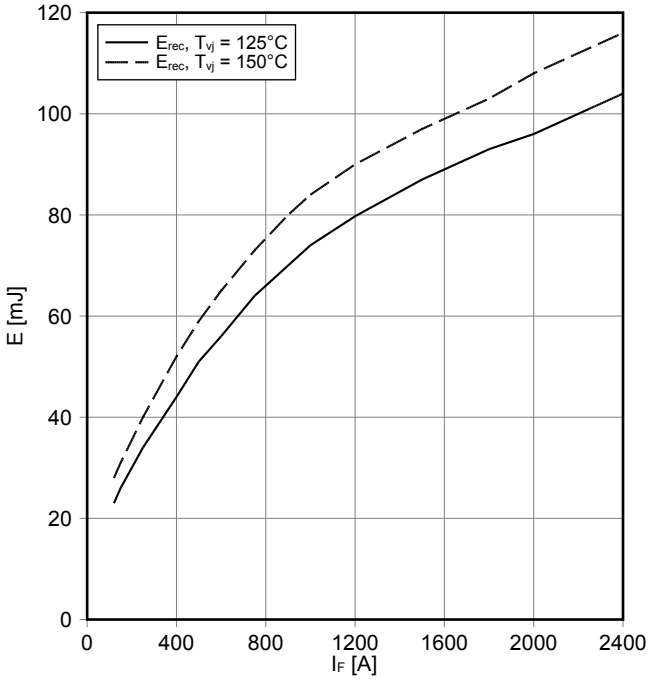
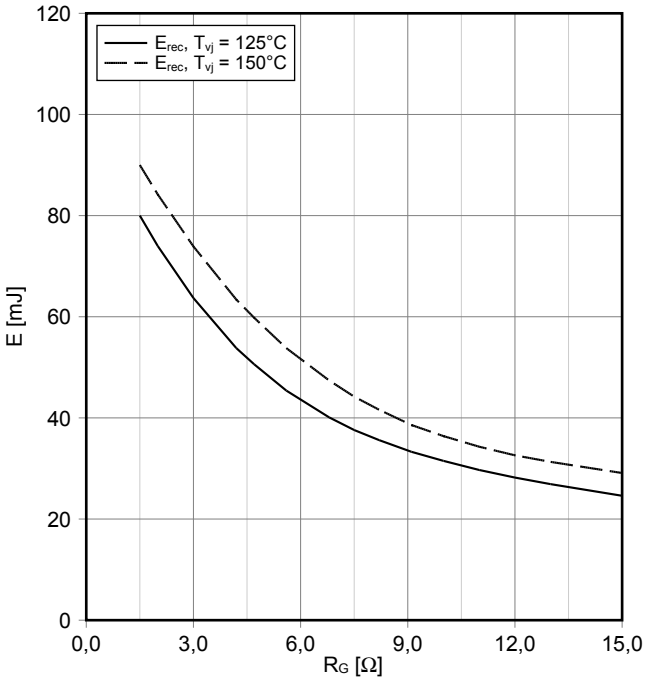
正向偏压特性 二极管,逆变器 (典型)
forward characteristic of Diode, Inverter (typical)
$I_F = f(V_F)$



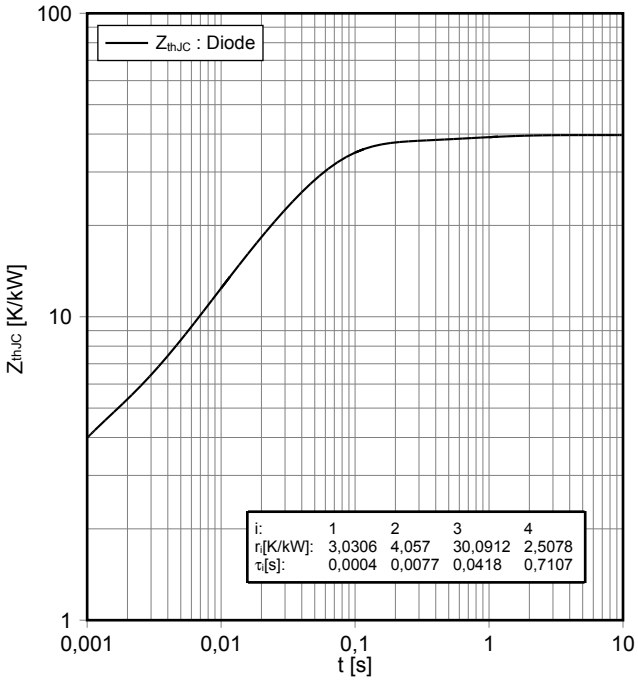
开关损耗 二极管,逆变器 (典型)
switching losses Diode, Inverter (typical)
$E_{rec} = f(I_F)$
R_{Gon} = Ω, V_{CE} = 600 V



开关损耗 二极管,逆变器 (典型)
switching losses Diode, Inverter (typical)
$E_{rec} = f(R_G)$
I_F = 1200 A, V_{CE} = 600 V



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



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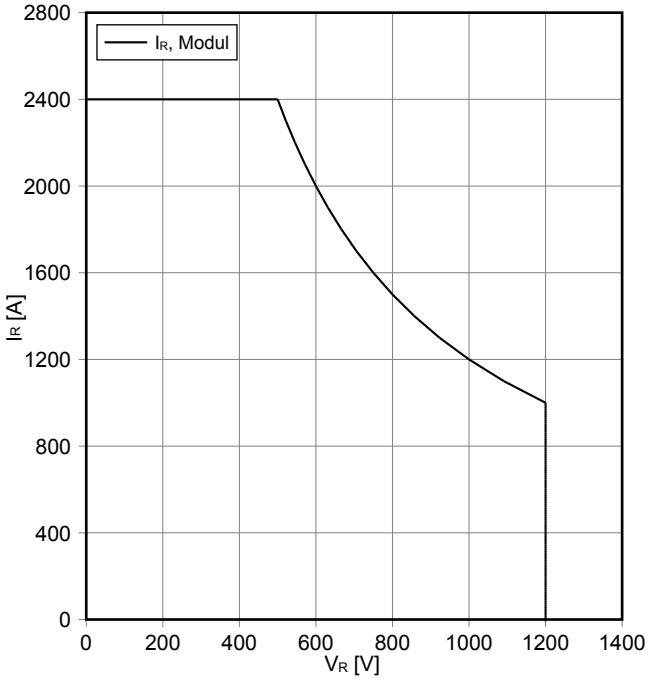
安全工作区 二极管,逆变器 (SOA)
safe operation area Diode, Inverter (SOA)
$I_R = f(V_R)$
$T_{vj} = 150°C$



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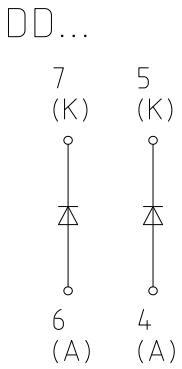
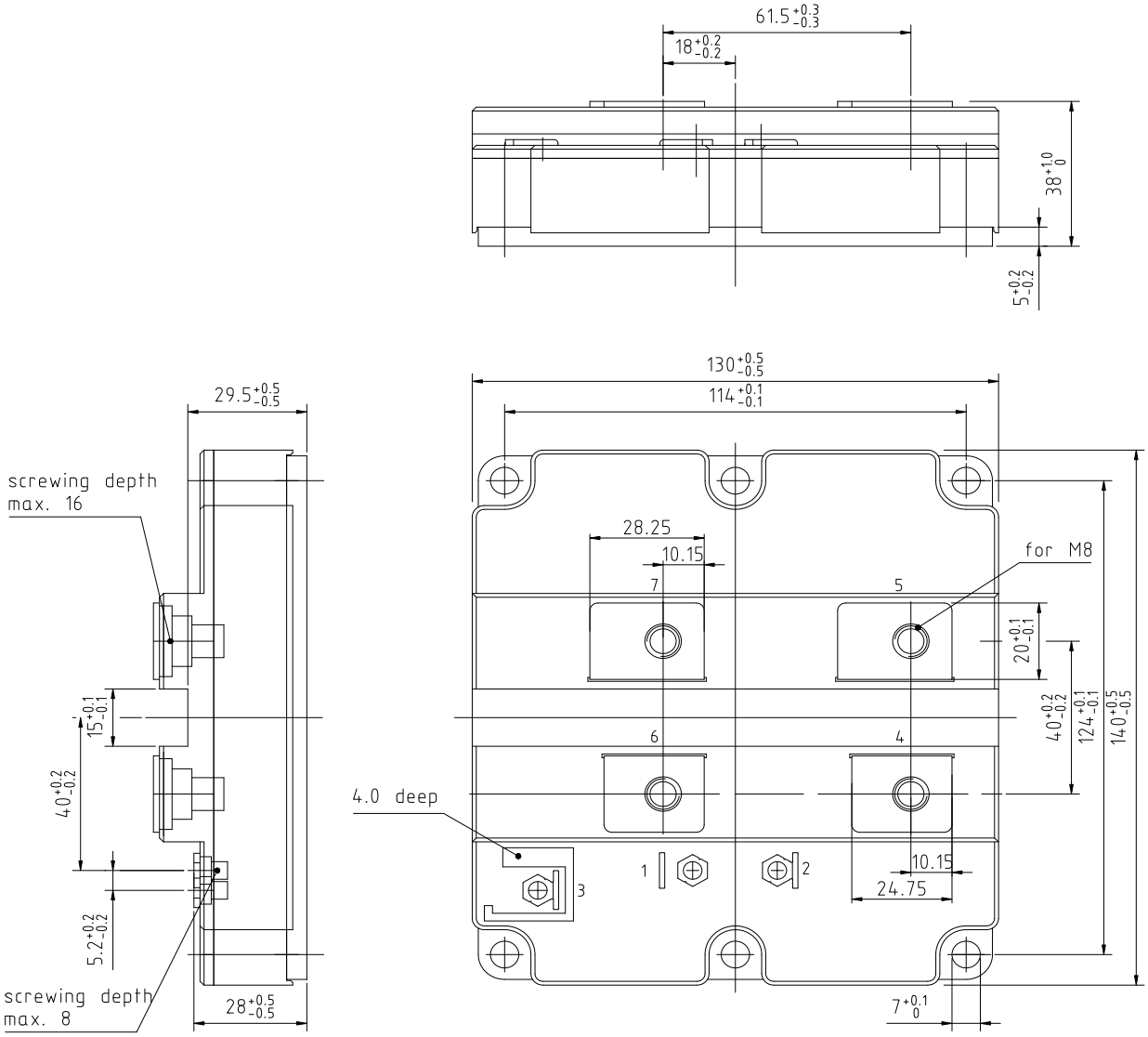
接线图 / Circuit diagram



封装尺寸 / Package outlines



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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
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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.

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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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