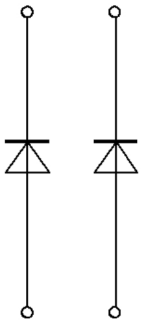
高绝缘等级模块
high insulated module



V_{CES} = 4500V
$I_{C\ nom}$ = 1200A / I_{CRM} = 2400A

潜在应用
- 中压变流器
- 多电平逆变器
- 大功率变流器
- 牵引变流器
- 电机传动
- 风力发电机

Potential Applications
- Medium voltage converters
- Multi level inverter
- High power converters
- Traction drives
- Motor drives
- Wind turbines

电气特性
- 高冲击电流能力
- 高动态坚固性
- 高直流电压稳定性

Electrical Features
- High surge current capability
- High dynamic robustness
- High DC stability

机械特性
- 加强绝缘封装，10.4kV 交流 10第二
- 封装的 CTI > 600
- 碳化硅铝 (AlSiC) 基板提供更高的温度循环能力
- 高爬电距离和电气间隙

Mechanical Features
- Package with enhanced insulation of 10.4kV AC 10s
- Package with CTI > 600
- AlSiC base plate for increased thermal cycling capability
- High creepage and clearance distances

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

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°C T_{vj} = 25°C T_{vj} = -40°C	V_{RRM}		4500 4500 4500	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	I²t		570	kA²s
最大损耗功率 Maximum power dissipation	T_{vj} = 125°C	P_{RQM}		2400	kW
最小开通时间 Minimum turn-on time		$t_{on\ min}$		10,0	µs

特征值 / Characteristic Values

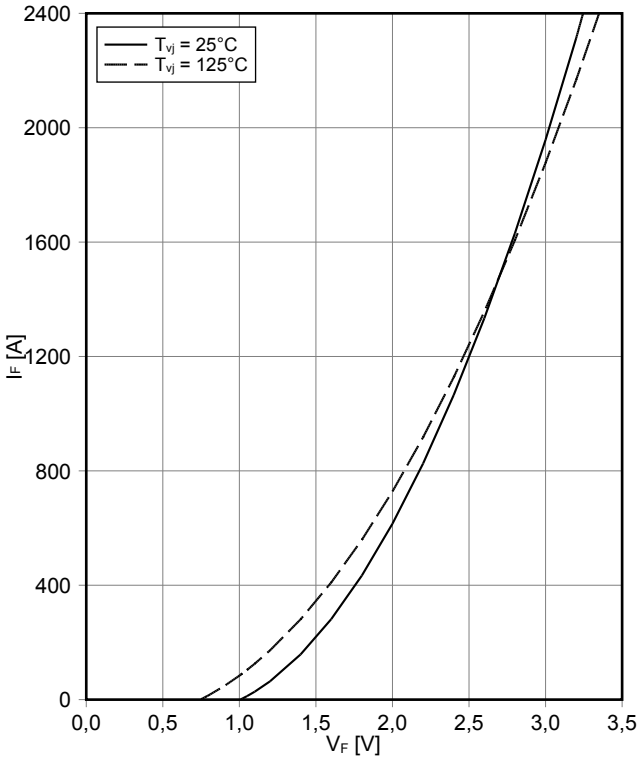
			min.	typ.	max.	
正向电压 Forward voltage	I_F = 1200 A, V_{GE} = 0 V T_{vj} = 25°C I_F = 1200 A, V_{GE} = 0 V T_{vj} = 125°C	V_F		2,50 2,50	3,10 3,00	V V
反向恢复峰值电流 Peak reverse recovery current	I_F = 1200 A, - di_F/dt = 5000 A/µs (T_{vj}=125°C) T_{vj} = 25°C V_R = 2800 V T_{vj} = 125°C V_{GE} = -15 V	I_{RM}		1500 1700		A A
恢复电荷 Recovered charge	I_F = 1200 A, - di_F/dt = 5000 A/µs (T_{vj}=125°C) T_{vj} = 25°C V_R = 2800 V T_{vj} = 125°C V_{GE} = -15 V	Q_r		1150 2100		µC µC
反向恢复损耗（每脉冲） Reverse recovery energy	I_F = 1200 A, - di_F/dt = 5000 A/µs (T_{vj}=125°C) T_{vj} = 25°C V_R = 2800 V T_{vj} = 125°C V_{GE} = -15 V	E_{rec}		1750 3550		mJ mJ
结 - 外壳热阻 Thermal resistance, junction to case	每个二极管 / per diode	R_{thJC}			17,0	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}		16,0		K/kW
在开关状态下温度 Temperature under switching conditions		$T_{vj\ op}$	-50		125	°C

模块 / Module

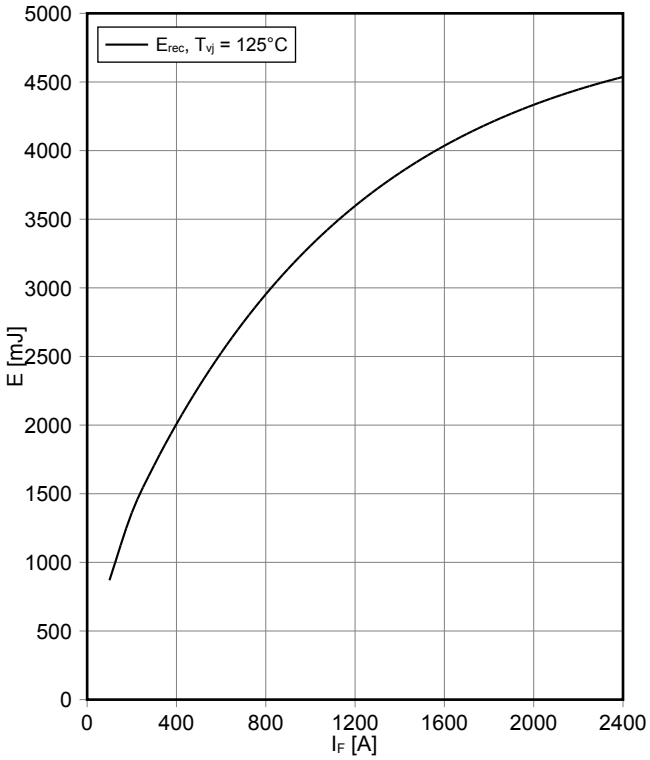
绝缘测试电压 Isolation test voltage	RMS, f = 50 Hz, t = 10 s	V_{ISOL}		10,4		kV
局部放电停止电压 Partial discharge extinction voltage	RMS, f = 50 Hz, $Q_{PD} \leq$ 10 pC	V_{ISOL}		3,5		kV
DC 稳定性 DC stability	T_{vj} = 25°C, 100 fit	$V_{CE\ D}$		3000		V
模块基板材料 Material of module baseplate				AlSiC		
内部绝缘 Internal isolation	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		
			min.	typ.	max.	
杂散电感,模块 Stray inductance module		L_{sCE}		25		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	$R_{AA'+CC'}$		0,37		mΩ
储存温度 Storage temperature		T_{stg}	-55		125	°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 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		1000		g

Dynamische Daten gelten in Verbindung mit FZ1200R45KL3_B5 Modul
Dynamic Data valid in conjunction with FZ1200R45KL3_B5 module

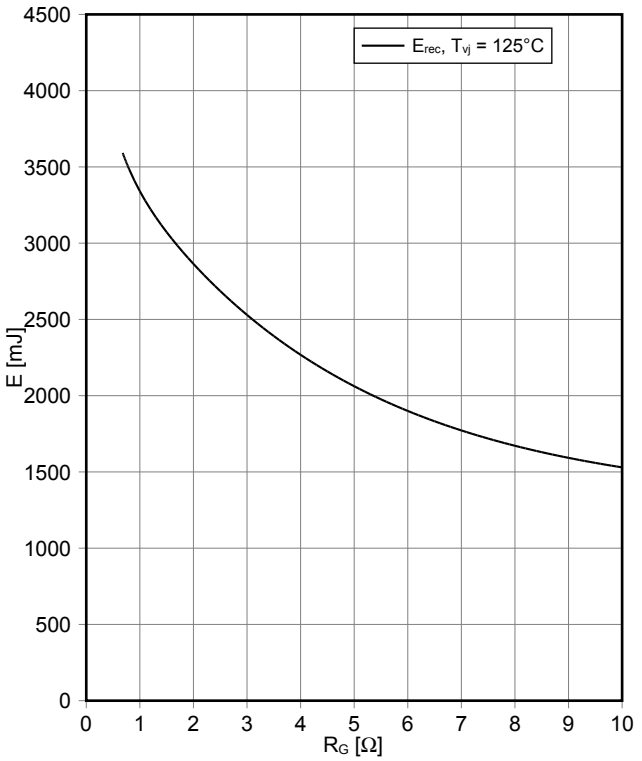
正向偏压特性 二极管,逆变器 （典型)
forward characteristic of Diode, Inverter (typical)
$I_F = f(V_F)$



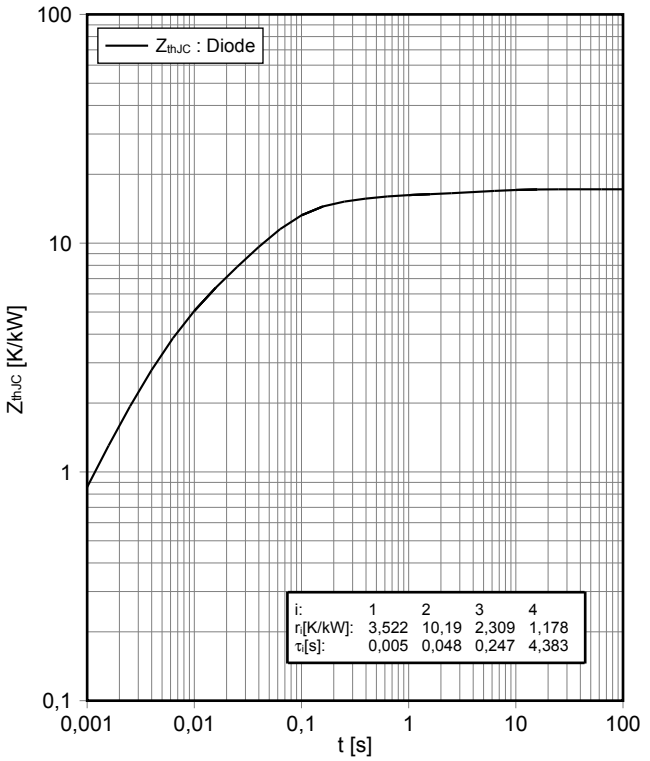
开关损耗 二极管,逆变器 （典型)
switching losses Diode, Inverter (typical)
$E_{rec} = f(I_F)$
$- di_F/dt = 5000A/\mu s$, $V_{CE} = 2800$ V



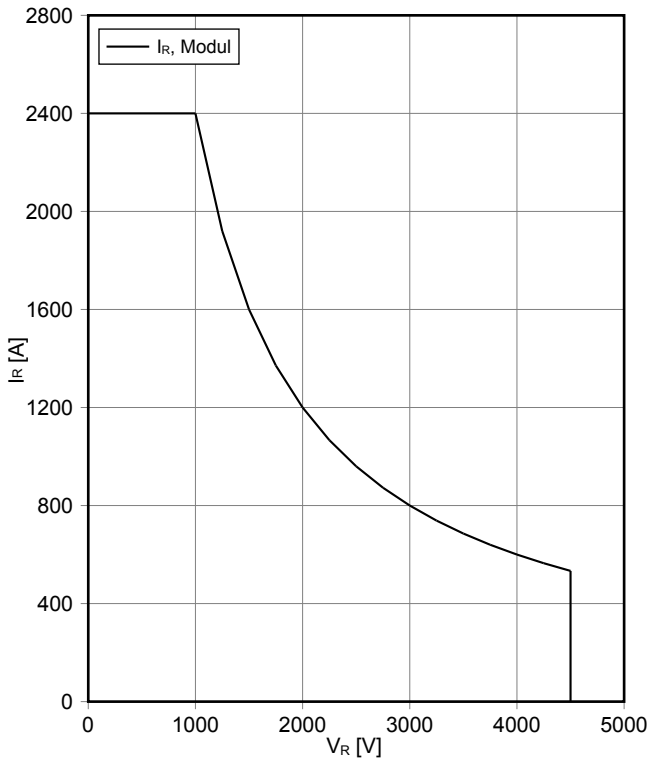
开关损耗 二极管,逆变器 （典型)
switching losses Diode, Inverter (typical)
$E_{rec} = f(R_G)$
$I_F = 1200$ A, $V_{CE} = 2800$ V



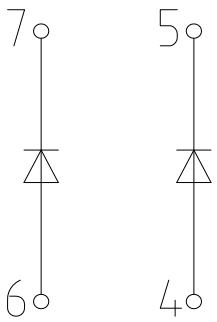
瞬态热阻抗 二极管,逆变器
transient thermal impedance Diode, Inverter
$Z_{thJC} = f(t)$



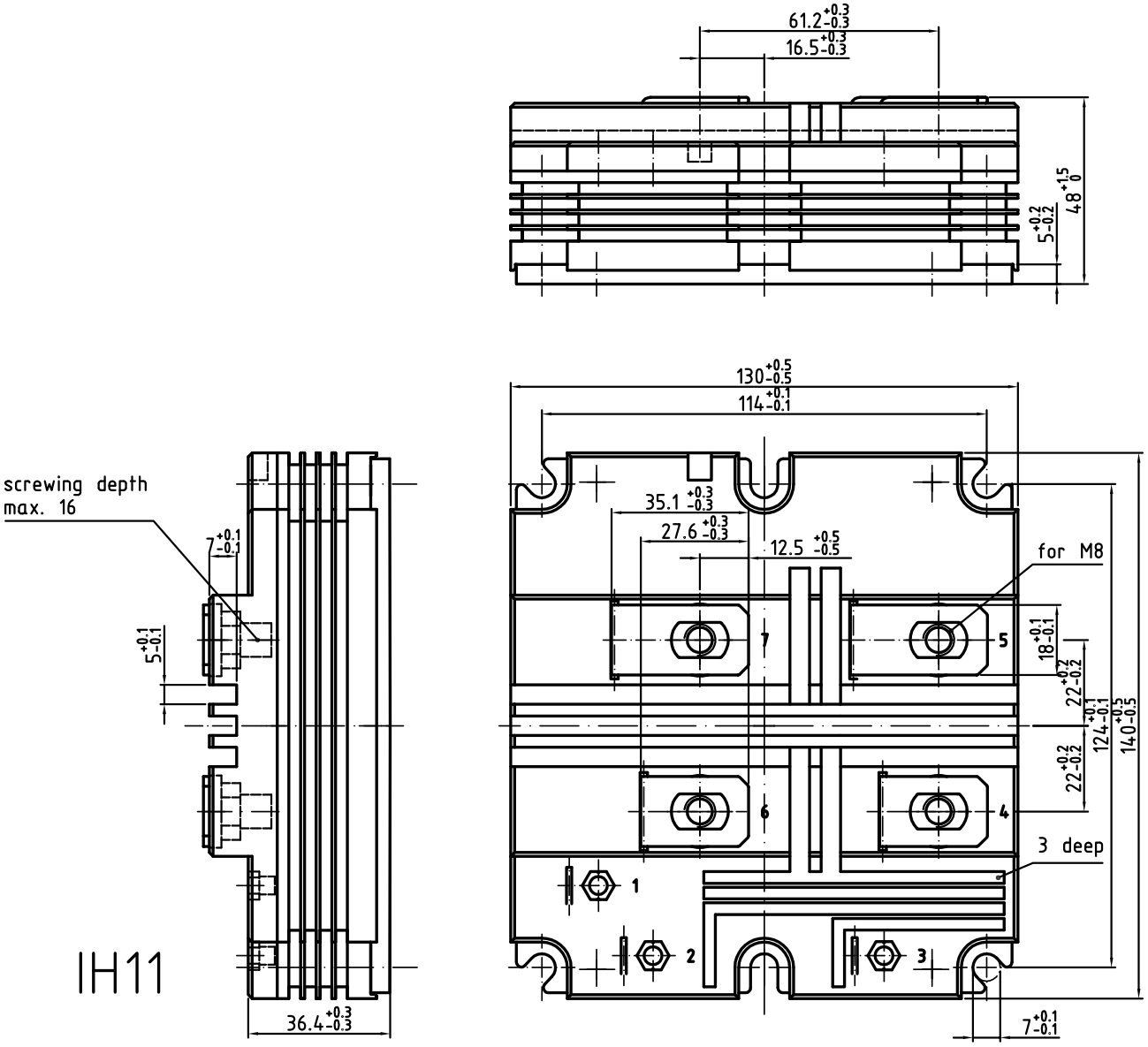
安全工作区 二极管,逆变器 (SOA)
safe operation area Diode, Inverter (SOA)
$I_R = f(V_R)$
$T_{vj} = 125°C$



接线图 / Circuit diagram



封装尺寸 / Package outlines



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