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 T_{vj} = -25°C	V_{RRM}	3300 3300	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	500	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 I_F = 1200 A, V_{GE} = 0 V	V_F		2,80 2,80	3,50 3,50	V V
反向恢复峰值电流 Peak reverse recovery current	I_F = 1200 A, - di_F/dt = 6800 A/µs (T_{vj}=125°C) V_R = 1800 V V_{GE} = -15 V	I_{RM}		1700 2000		A A
恢复电荷 Recovered charge	I_F = 1200 A, - di_F/dt = 6800 A/µs (T_{vj}=125°C) V_R = 1800 V V_{GE} = -15 V	Q_r		710 1300		µC µC
反向恢复损耗（每脉冲） Reverse recovery energy	I_F = 1200 A, - di_F/dt = 6800 A/µs (T_{vj}=125°C) V_R = 1800 V V_{GE} = -15 V	E_{rec}		735 1550		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}		12,0		K/kW
在开关状态下温度 Temperature under switching conditions		$T_{vj\ op}$	-40		125	°C

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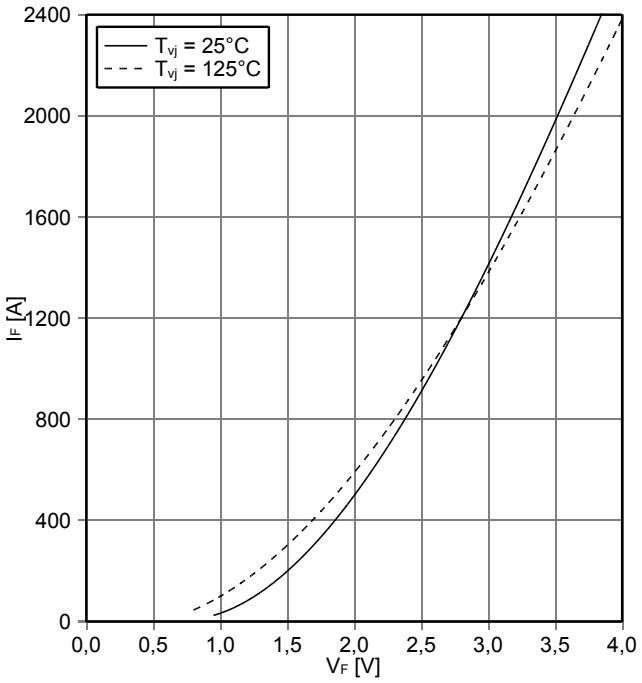
模块 / Module

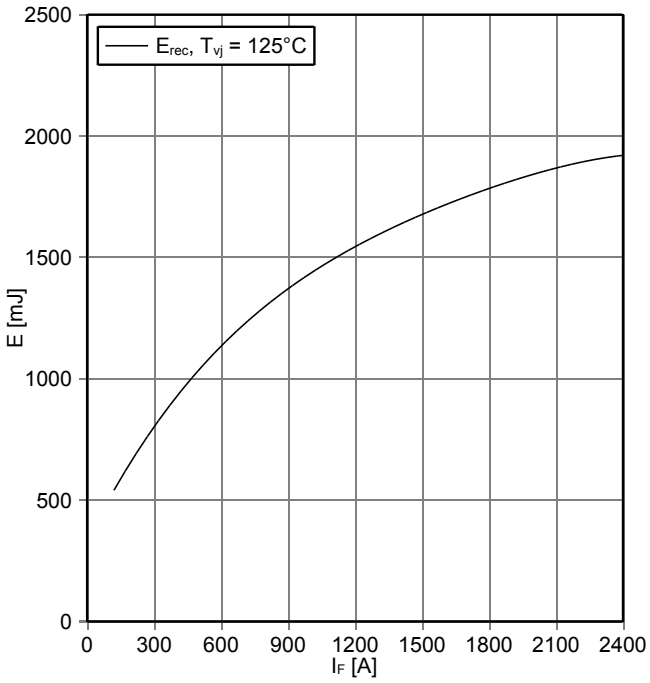
绝缘测试电压 Isolation test voltage	RMS, f = 50 Hz, t = 1 min	V_{ISOL}		6,0		kV
局部放电停止电压 Partial discharge extinction voltage	RMS, f = 50 Hz, Q_{PD} ≥ 10 pC (acc. to IEC 1287)	V_{ISOL}		2,6		kV
DC 稳定性 DC stability	T_{vj} = 25°C, 100 fit	$V_{CE\ D}$		1800		V
模块基板材料 Material of module baseplate				AlSiC		
内部绝缘 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- 散热片 / terminal to heatsink 端子- 端子 / terminal to terminal			32,2 32,2		mm
电气间隙 Clearance	端子- 散热片 / terminal to heatsink 端子- 端子 / terminal to terminal			19,1 19,1		mm
相对电痕指数 Comperative tracking index		CTI		> 400		
			min.	typ.	max.	
外壳 - 散热器热阻 Thermal resistance, case to heatsink	每个模块 / per module λ_{Paste} = 1 W/(m·K) / λ_{grease} = 1 W/(m·K)	R_{thCH}		6,00		K/kW
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	$R_{CC'+EE'}$		0,32		mΩ
储存温度 Storage temperature		T_{stg}	-40		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 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	1,8 8,0	- -	2,1 10	Nm Nm
重量 Weight		G		1000		g

Dauergleichstrom: chipbezogener Wert; Terminalwert pro Zweig: <1000A
DC forward current: chip related value; terminal value per arm: <1000A
Dynamische Daten gelten in Verbindung mit FZ1200R33KF2C Modul.
Dynamic data valid in conjunction with FZ1200R33KF2C module.

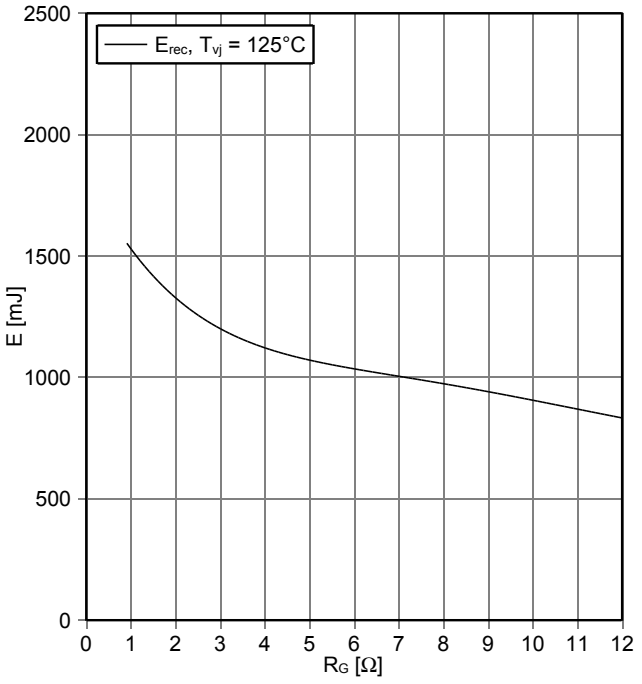
正向偏压特性 二极管,逆变器 (典型)
forward characteristic of Diode, Inverter (typical)
$I_F = f(V_F)$



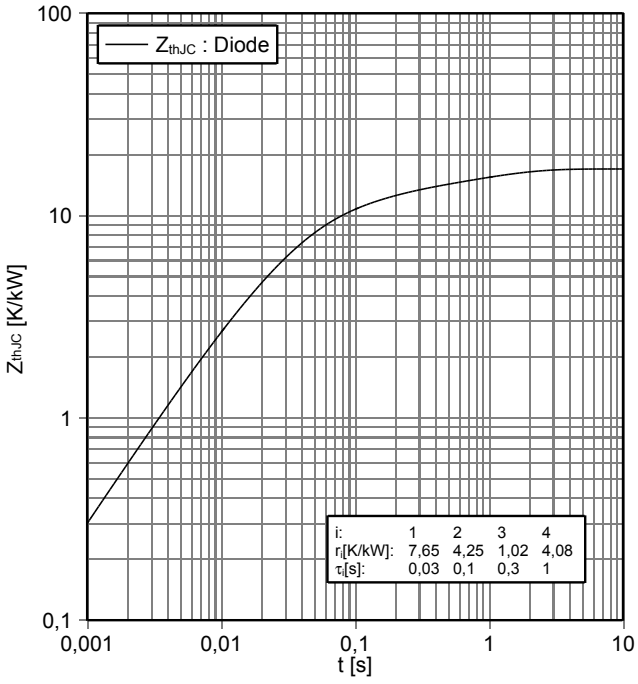
开关损耗 二极管,逆变器 (典型)
switching losses Diode, Inverter (typical)
$E_{rec} = f(I_F)$
R_{Gon} = Ω, V_{CE} = 1800 V



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} = 1800 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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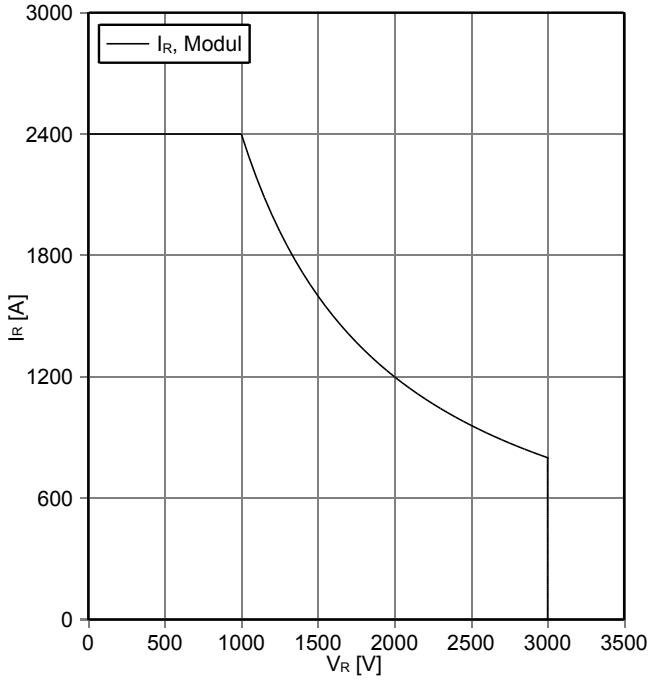
安全工作区 二极管,逆变器 (SOA)
safe operation area Diode, Inverter (SOA)
$I_R = f(V_R)$
$T_{vj} = 125°C$



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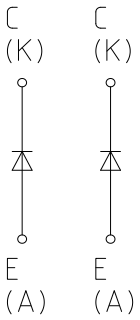
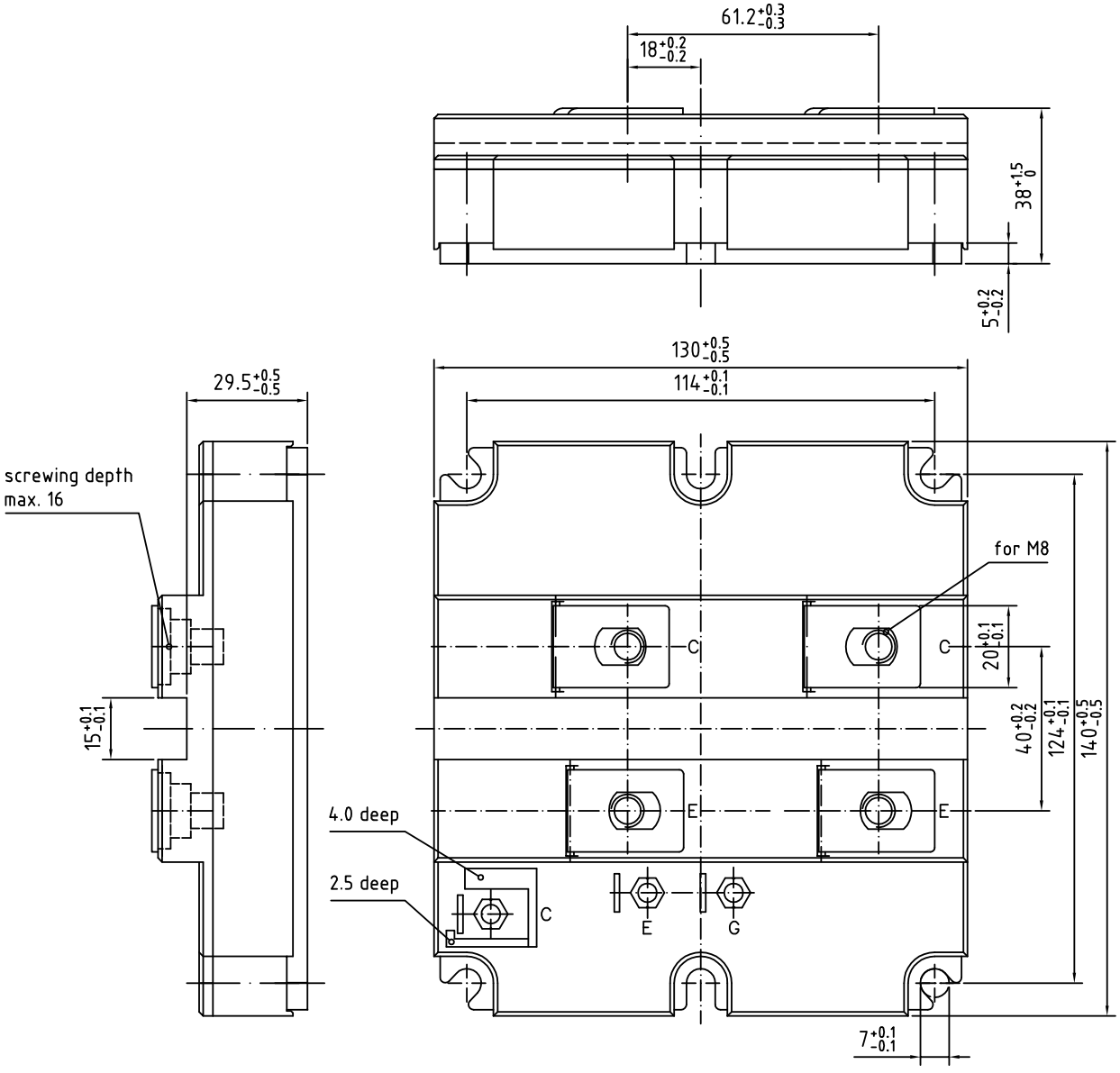
接线图 / circuit_diagram_headline



封装尺寸 / package outlines



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