



二极管, 逆变器 / Diode, Inverter
最大额定值 / Maximum Rated Values

初步数据
Preliminary Data

| | | | | |
|---|--|----------------------|--------------|-----------------------|
| 反向重复峰值电压 Repetitive peak reverse voltage | $T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = -25^{\circ}\text{C}$ | V_{RRM} | 3300 3300 | V |
| 连续正向直流电流 Continuous DC forward current | | I_F | 200 | A |
| 正向重复峰值电流 Repetitive peak forward current | $t_P = 1 \text{ ms}$ | I_{FRM} | 400 | 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 | 14,0 | kA^2s |
| 最大损耗功率 Maximum power dissipation | $T_{vj} = 125^{\circ}\text{C}$ | P_{RQM} | 400 | 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 | $I_F = 200 \text{ A}$, $V_{GE} = 0 \text{ V}$ $I_F = 200 \text{ A}$, $V_{GE} = 0 \text{ V}$ | $T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$ | V_F | 2,80 2,80 | 3,50 3,50 | V V |
| 反向恢复峰值电流 Peak reverse recovery current | $I_F = 200 \text{ A}$, $-di_F/dt = 1100 \text{ A}/\mu\text{s}$ ($T_{vj}=125^{\circ}\text{C}$) $V_R = 1800 \text{ V}$ $V_{GE} = -15 \text{ V}$ | $T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$ | I_{RM} | 275 325 | | A A |
| 恢复电荷 Recovered charge | $I_F = 200 \text{ A}$, $-di_F/dt = 1100 \text{ A}/\mu\text{s}$ ($T_{vj}=125^{\circ}\text{C}$) $V_R = 1800 \text{ V}$ $V_{GE} = -15 \text{ V}$ | $T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$ | Q_r | 120 220 | | μC μC |
| 反向恢复损耗 (每脉冲) Reverse recovery energy | $I_F = 200 \text{ A}$, $-di_F/dt = 1100 \text{ A}/\mu\text{s}$ ($T_{vj}=125^{\circ}\text{C}$) $V_R = 1800 \text{ V}$ $V_{GE} = -15 \text{ V}$ | $T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$ | E_{rec} | 125 255 | | mJ mJ |
| 结 - 外壳热阻 Thermal resistance, junction to case | 每个二极管 / per diode | | R_{thJC} | | 108 | 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} | 33,0 | | K/kW |
| 在开关状态下温度 Temperature under switching conditions | | | $T_{vj \text{ op}}$ | -40 | 125 | $^{\circ}\text{C}$ |

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| prepared by: SB | date of publication: 2015-04-13 |
| approved by: DTS | revision: V2.3 |

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模块 / Module

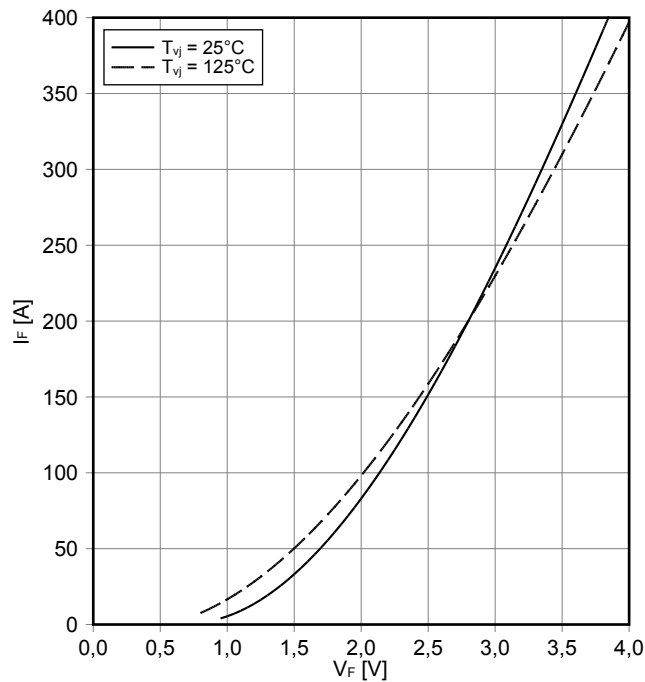
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|---|---|---------------------|--------------|------|------|
| 绝缘测试电压 Isolation test voltage | RMS, f = 50 Hz, t = 1 min. | V _{ISOL} | 6,0 | | kV |
| 局部放电停止电压 Partial discharge extinction voltage | RMS, f = 50 Hz, Q _{PD} ≤ 10 pC (acc. to IEC 1287) | 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 | | | AISiC | | |
| 内部绝缘 Internal isolation | 基本绝缘 (class 1, IEC 61140) basic insulation (class 1, IEC 61140) | | AIN | | |
| 爬电距离 Creepage distance | 端子至散热器 / terminal to heatsink 端子至端子 / terminal to terminal | | 32,2 32,2 | | mm |
| 电气间隙 Clearance | 端子至散热器 / terminal to heatsink 端子至端子 / 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} | 16,0 | | K/kW |
| 杂散电感, 模块 Stray inductance module | | L _{sCE} | 58 | | 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'} | 0,78 | | mΩ |
| 储存温度 Storage temperature | | T _{stg} | -40 | 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 M5 根据相应的应用手册进行安装 Screw M5 - Mounting according to valid application note | M | 3,6 | 4,2 | Nm |
| 重量 Weight | | G | 500 | | g |

Dynamische Daten gelten in Verbindung mit FF200R33KF2C Modul.
Dynamic data valid in conjunction with FF200R33KF2C module.

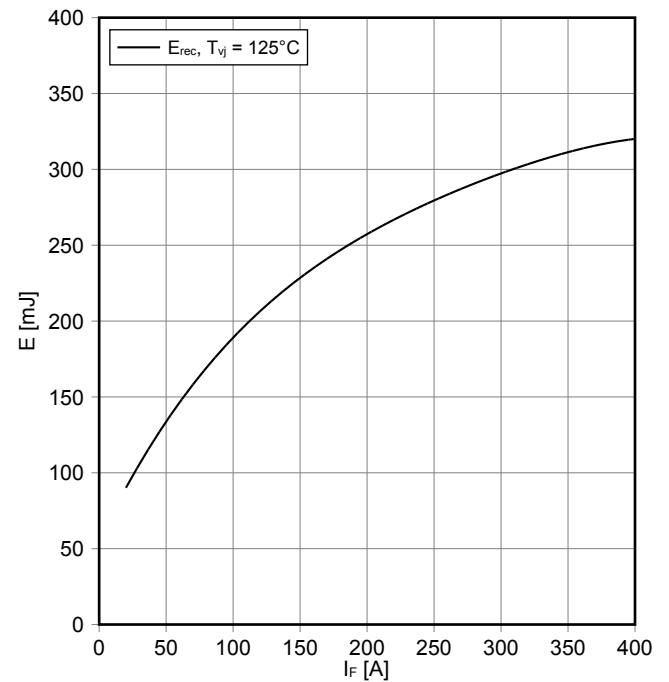
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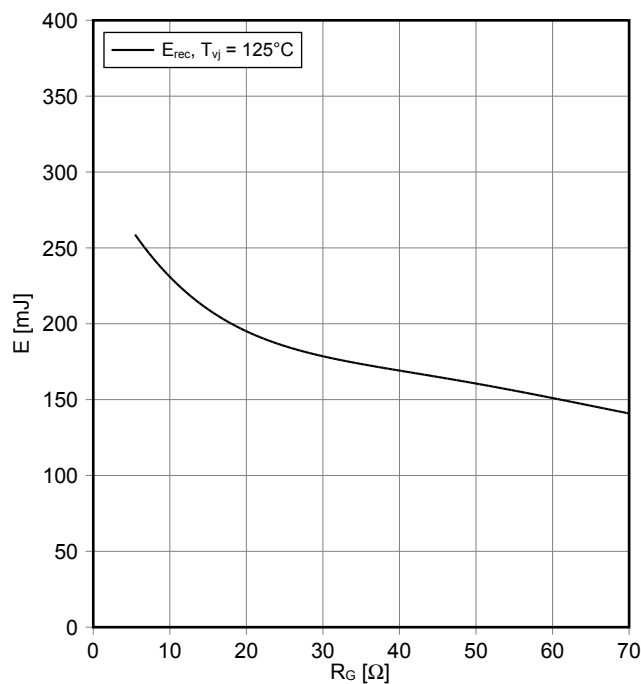
正向偏压特性 二极管,逆变器 (典型)
forward characteristic of Diode, Inverter (typical)
 $I_F = f(V_F)$



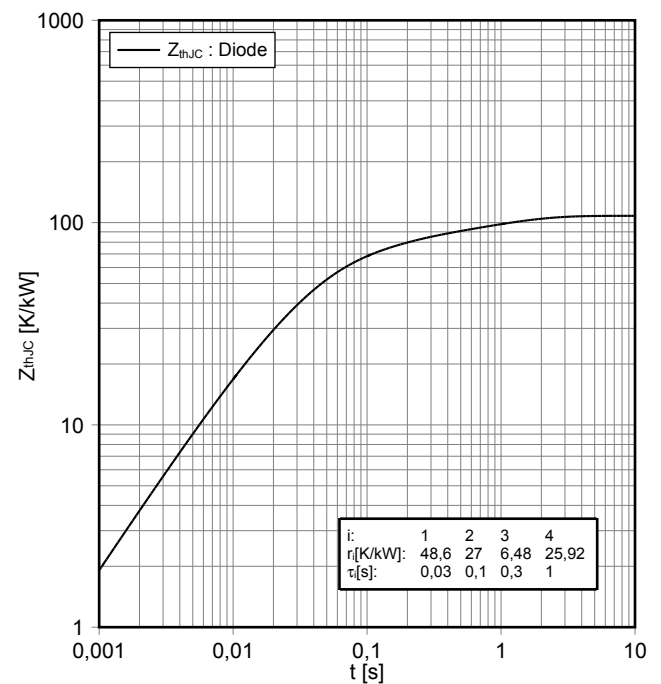
开关损耗 二极管,逆变器 (典型)
switching losses Diode, Inverter (typical)
 $E_{rec} = f(I_F)$
 $R_{Gon} = \Omega, V_{CE} = 1800 V$



开关损耗 二极管,逆变器 (典型)
switching losses Diode, Inverter (typical)
 $E_{rec} = f(R_G)$
 $I_F = 200 A, V_{CE} = 1800 V$



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



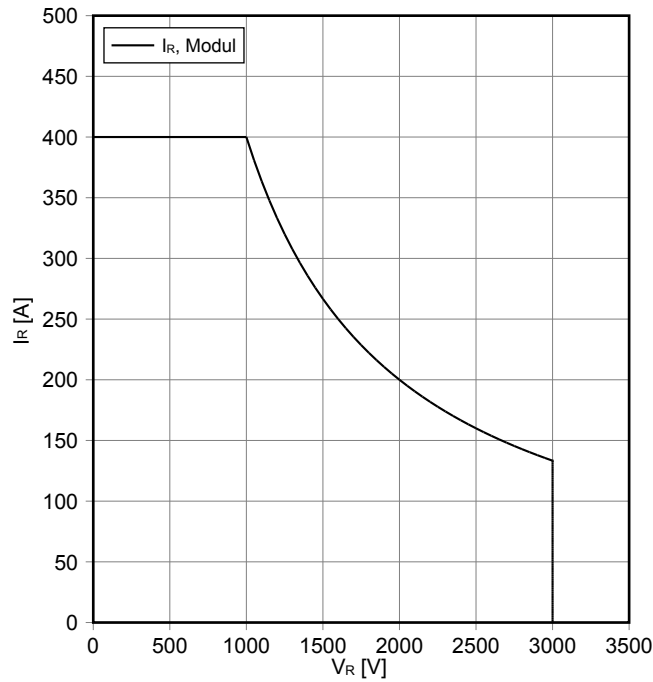
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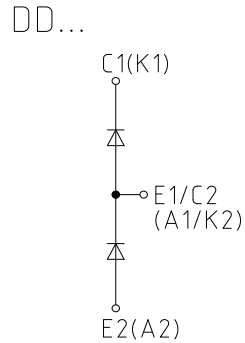
安全工作区 二极管, 逆变器 (SOA)
safe operation area Diode, Inverter (SOA)

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

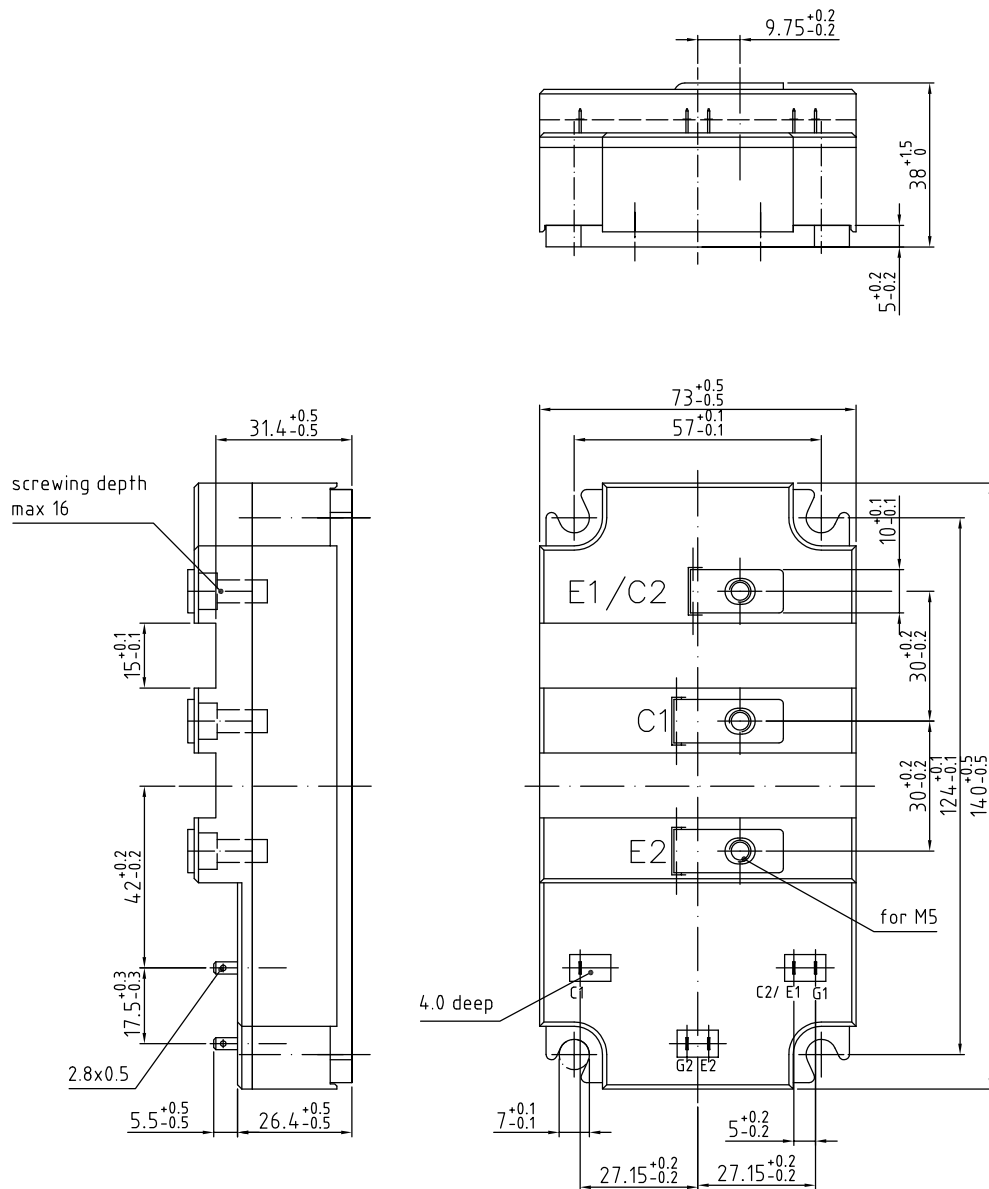


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接线图 / Circuit diagram



封装尺寸 / Package outlines



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使用条件和条款

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- 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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