## 34mm Module

$V_{CES}$ =1200V， $I_{C\ nom}$ =200A

## 二极管，逆变器 / Diode, Inverter

### 最大额定值 / Maximum Ratings

| Parameter | Conditions | Symbol | Value | Unit |
|---|---|---|---|---|
| 重复峰值额定电压<br>Repetitive peak normal voltage | $T_{vj}$=25°C | $V_{Fnorm}$ | 1200 | V |
| 反向重复峰值电压<br>Repetitive peak reverse voltage | $T_{vj}$=25°C | $V_{RRM}$ | 1350 | V |
| 连续正向直流电流<br>Continuous DC forward current | | $I_F$ | 200 | A |
| 正向重复峰值电流<br>Repetitive peak forward current | $t_p$=1ms | $I_{FRM}$ | 400 | A |
| 正向非重复峰值浪涌电流<br>Surge Non-repetitive forward current | $t_p$=10ms，sin180°，$T_j$=25°C | $I_{FSM}$ | 1600 | A |
| $I^2t$ 值<br>$I^2t$-value | $t_p$=10ms，sin180°，$T_j$=25°C | $I^2t$ | 13000 | $A^2S$ |

### 特征值 / Characteristic Values

| Parameter | Conditions | | Symbol | Value | | | Unit |
|---|---|---|---|---|---|---|---|
| | | | | Min. | Typ. | Max. | |
| 正向电压<br>Forward voltage | $I_F$=200A<br>$I_F$=200A<br>$I_F$=200A | $T_{vj}$=25°C<br>$T_{vj}$=125°C<br>$T_{vj}$=150°C | $V_F$ | | 2.07<br>2.28<br>2.24 | 2.50<br>2.80<br>2.80 | V |
| 反向漏电流<br>Reverse Leakage Current | $V_{RRM}$=1200V | $T_{vj}$=25°C | $I_R$ | | | 1.0 | mA |
| 反向恢复峰值电流<br>Peak reverse recovery current | $I_F$=200A,<br>-di$_F$/dt=1700A/μs($T_{vj}$=150°C)<br>$V_R$=600V, $R_g$=3.3 Ω | $T_{vj}$=25°C<br>$T_{vj}$=125°C<br>$T_{vj}$=150°C | $I_{RM}$ | | 96<br>122<br>125 | | A |
| 恢复电荷<br>Recovered charge | $I_F$=200A,<br>-di$_F$/dt=1700A/μs($T_{vj}$=150°C)<br>$V_R$=600V, $R_g$=3.3 Ω | $T_{vj}$=25°C<br>$T_{vj}$=125°C<br>$T_{vj}$=150°C | $Q_r$ | | 21.64<br>41.26<br>44.24 | | μC |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 反向恢复损耗（每脉冲）<br>Reverse recovered energy | $I_F$=200A,<br>-di$_F$/dt=1700A/μs($T_{vj}$=150°C)<br>$V_R$=600V, $R_g$=3.3 Ω | $T_{vj}$=25°C<br>$T_{vj}$=125°C<br>$T_{vj}$=150°C | $E_{rec}$ | | 8.97<br>18.72<br>19.26 | | mJ |
| 反向恢复时间<br>Reverse recovered time | $I_F$=200A,<br>-di$_F$/dt=1700A/μs($T_{vj}$=150°C)<br>$V_R$=600V, $R_g$=3.3 Ω | $T_{vj}$=25°C<br>$T_{vj}$=125°C<br>$T_{vj}$=150°C | $T_{rr}$ | | 659<br>922<br>971 | | ns |
| 软度系数<br>Soft factor | $I_F$=200A,<br>-di$_F$/dt=1700A/μs($T_{vj}$=150°C)<br>$V_R$=600V, $R_g$=3.3 Ω | $T_{vj}$=25°C<br>$T_{vj}$=125°C<br>$T_{vj}$=150°C | Soft | | 6.5<br>7.5<br>8.0 | | |
| 结-外壳热阻<br>Thermal resistance, junction to case | 每个二极管 / per diode | | $R_{thJC}$ | | | 0.19 | K/W |
| 外壳-散热器热阻<br>Thermal resistance, case to heat sink | 每个二极管 / per FRD λgrease = 1.09 W/(m·K) | | $R_{thCH}$ | | 0.12 | | K/W |
| 在开关状态下温度<br>Temperature under switching conditions | | | $T_{vj\ op}$ | -40 | | 150 | °C |

## 模块 / Module

| Parameter | Conditions | Symbol | Value | | | Unit |
|---|---|---|---|---|---|---|
| 绝缘测试电压<br>Isolation test voltage | RMS, f=50Hz, t=1min | $V_{ISOL}$ | 4000 | | | V |
| 内部绝缘<br>Internal isolation | | | $Al_2O_3$ | | | |
| 储存温度<br>Storage temperature | | $T_{stg}$ | -40 | | 125 | °C |
| 模块安装的扭矩<br>Mounting torque for modul mounting | M6，螺丝 | M | 3.0 | | 5.0 | Nm |
| 端子连接扭矩<br>Terminal Connection Torque | M5，螺丝 | M | 2.5 | | 5.0 | Nm |
| 重量<br>Weight | | W | | 145 | | g |

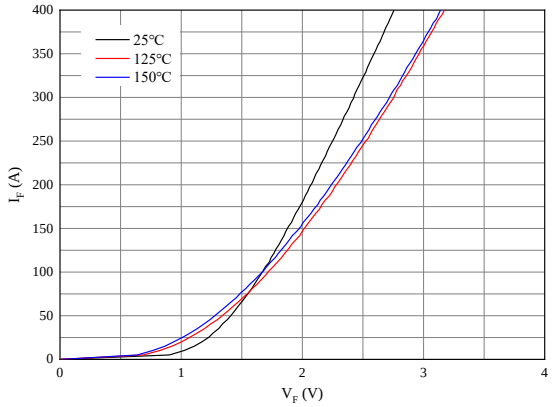



图 1. 正向偏压特性 二极管

Figure1: Forward characteristic of Diode

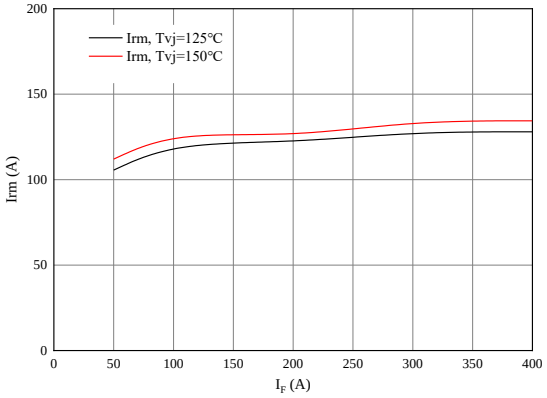



图 2. 反向恢复峰值电流

Figure2: Peak reverse recovery current

VCE=600V，Rg=3.3 Ω

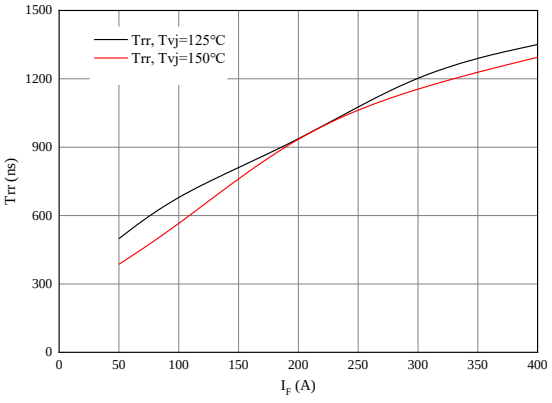



图 3. 反向恢复时间

Figure3: Reverse recovered time

VCE=600V，Rg=3.3 Ω

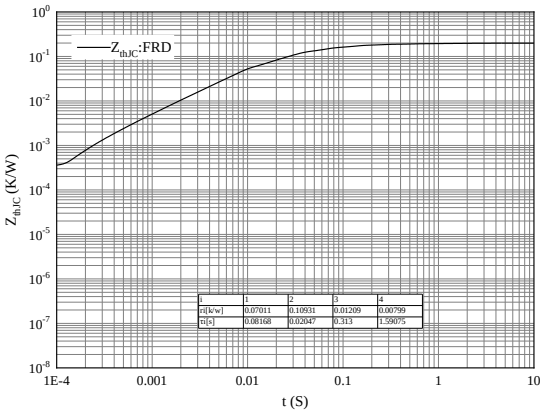
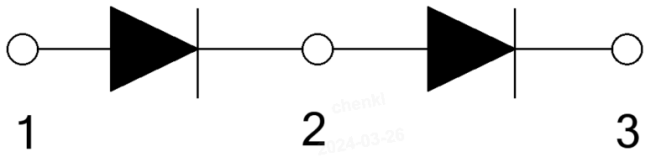



图 4. 瞬态热阻抗 FRD 逆变器

Figure11. Transient thermal impedance FRD ,Inverter

$Z_{thJC}=f(t)$

**接线图 / Circuit diagram**




**封装尺寸 / Package outlines**