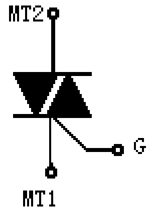
# CP210N3B

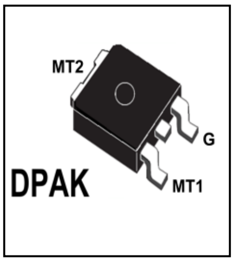
## 主要参数 MAIN CHARACTERISTICS

| | |
|---|---|
| $I_{T(RMS)}$ | 2A |
| $V_{DRM}$ | 800V |
| $I_{GT\ (1,2,3)}$ | <10mA |

## 封装 Package



| 引线名称<br>Description | |
|---|---|
| 主电极 1 | MT1 |
| 门极 | G |
| 主电极 2 | MT2 |



| 用途 | APPLICATIONS |
|---|---|
| 交流开关 | AC switching |
| 相位控制 | Phase control |

| 产品特性 | FEATURES |
|---|---|
| 平面芯片，高可靠性和一致性 | Planar passivated chip for high reliability and uniform |
| 低通态电流和高浪涌电流能力 | Low on-state voltage and High $I_{TSM}$ |
| 环保 RoHS 产品 | RoHS products |

## 订货信息 ORDER MESSAGES

| 订货型号 **Order codes** | | 印记 **Marking** | 封装 **Package** |
|---|---|---|---|
| 有卤-编带 | 无卤-编带 | CP210N3B | DPAK |
| Halogen-Reel | Halogen-Free-Reel | | |
| CP210N3B-R-A | CP210N3B-R-AR | | |

## 绝对最大额定值　ABSOLUTE RATINGS ($T_C$=25℃)

| 项　目 Parameter | 符　号 Symbol | 试 验 条 件 Condition | 数 值 Value | 单位 Unit |
|---|---|---|---|---|
| 重复峰值断态电压<br>Repetitive peak off-state voltage | $V_{DRM}$ |  | ±800 | V |
| 通态方均根电流 On-state RMS current | $I_{T(RMS)}$ | full sine wave | 2 | A |
| 非重复浪涌峰值通态电流 Non - repetitive surge peak on-state current | $I_{TSM}$ | full sine wave ,t=20ms | 18 | A |
|  |  | full sine wave ,t=16.7ms | 20 | A |
|  | $I^2t$ | t=10ms | 1.6 | $A^2s$ |
| 通态电流临界上升率 Repetitive rate of rise of on-state current after triggering | dI/dt | $I_G$ = 20 mA | 100 | A/μs |
| 峰值门极功率　Peak gate power | $P_{GM}$ |  | 5 | W |
| 平均门极功率　Average gate power | $P_{G(AV)}$ |  | 0.5 | W |
| 峰值门极电流　Peak gate current | $I_{GM}$ |  | 2 | A |
| 存储温度　Storage temperature | $T_{stg}$ |  | -40~150 | ℃ |
| 操作结温 Operation junction temperature | $T_{VJ}$ |  | -40~150 | ℃ |

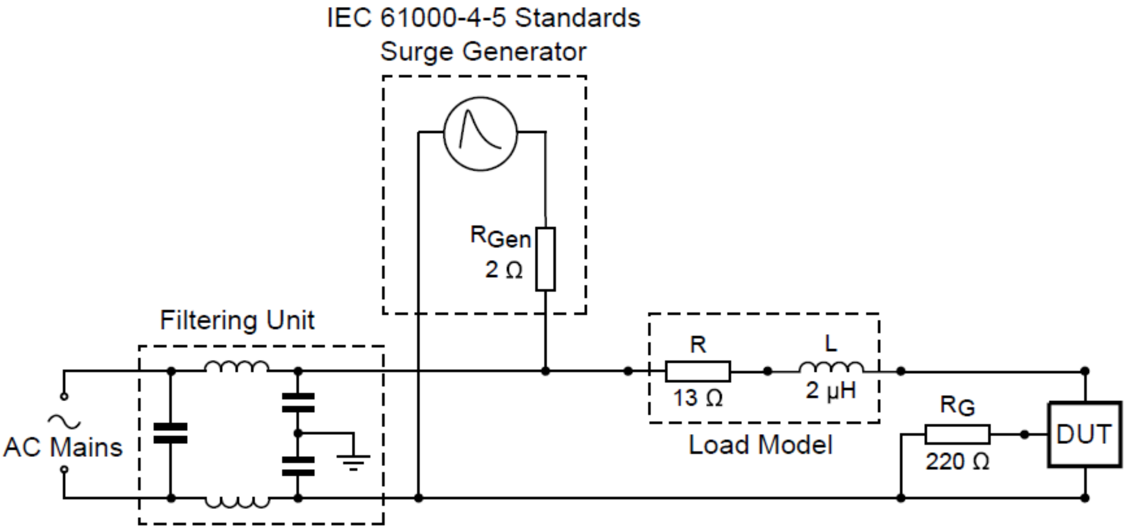
## 电特性 ELECTRICAL CHARACTERISTIC ($T_C$=25℃)

| 项　目<br>Parameter | 符　号<br>Symbol | 测 试 条 件<br>Condition | 最小<br>Min | 典型<br>Typ | 最大<br>Max | 单位<br>Unit |
|---|---|---|---|---|---|---|
| 峰值重复断态电流<br>Peak Repetitive Blocking Current | $I_{DRM}$ | $V_{DM}$=$V_{DRM}$, Tj=150℃, gate open | - | - | 1.5 | mA |
| 峰值通态电压<br>Peak on-state voltage | $V_{TM}$ | $I_{TM}$=3.0A | - | - | 2.0 | V |
| 门极触发电压<br>Gate trigger voltage | $V_{GT}$ | $V_{DM}$=12V,$R_L$=100Ω | - | - | 1.5 | V |
| 门极触发电流<br>Gate trigger current | $I_{GT1}$ | $V_{DM}$=12V ,MT1(-),MT2(+),G(+) | - | - | 10 | mA |
|  | $I_{GT2}$ | $V_{DM}$=12V ,MT1(-),MT2(+),G(-) | - | - | 10 | mA |
|  | $I_{GT3}$ | $V_{DM}$=12V ,MT1(+),MT2(-),G(-) | - | - | 10 | mA |
| 维持电流<br>Holding current | $I_H$ | $V_{DM}$=12V, $I_T$=0.1A | - | - | 15 | mA |
| 擎住电流<br>Latching current | $I_L$ | $V_{DM}$=12V, $I_T$=0.1A | - | - | 35 | mA |
| 断态临界电压上升率<br>Rise of off- state voltage | dV/dt | $V_{DM}$=540V,Tj=125℃, gate open | 500 | - | - | V/μs |
|  |  | $V_{DM}$=540V,Tj=150℃, gate open | 200 | - | - | V/μs |
| 峰值脉冲电压<br>Peak pulse voltage | $V_{PP}$ | Tj = 25 °C; non-repetitive, off-state;Page 4. | - | - | 2 | KV |
| 钳位电压<br>Clamping voltage | $V_{CL}$ | $I_{CL}$ = 0.1 mA; tp = 1 ms; Tj = 25 °C | 850 |  |  | V |

## 热特性THERMAL CHARACTERISTIC

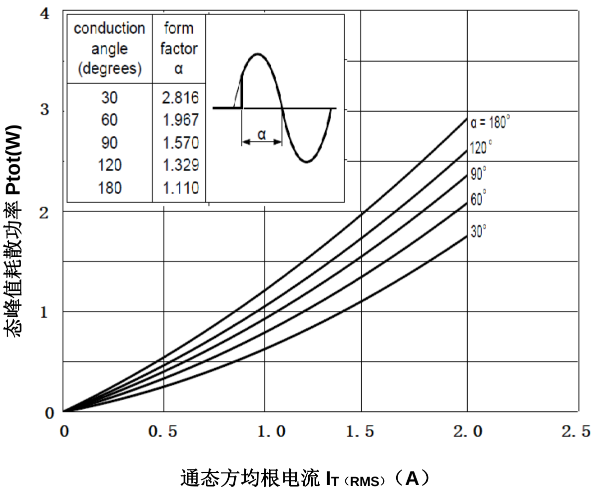
| 项　目<br>Parameter | 符　号<br>Symbol | 条　件<br>Condition | 最小<br>Min | 典型<br>Typ | 最大<br>Max | 单位<br>Unit |
|---|---|---|---|---|---|---|
| 结到焊点的热阻<br>Thermal resistance from junction to mounting base | $R_{th(j\text{-}mb)}$ |  | - | - | 3.0 | ℃/W |
| 结到环境的热阻<br>Thermal resistance from junction to ambient free air | $R_{th(j\text{-}a)}$ | in free air | - | 75 | - | ℃/W |

Test circuit for inductive and resistive loads with conditions equivalent to IEC 61000-4-5

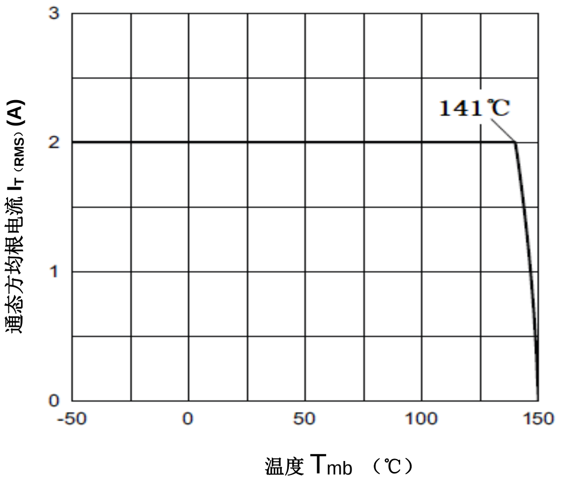


## 特征曲线　ELECTRICAL CHARACTERISTICS (curves)

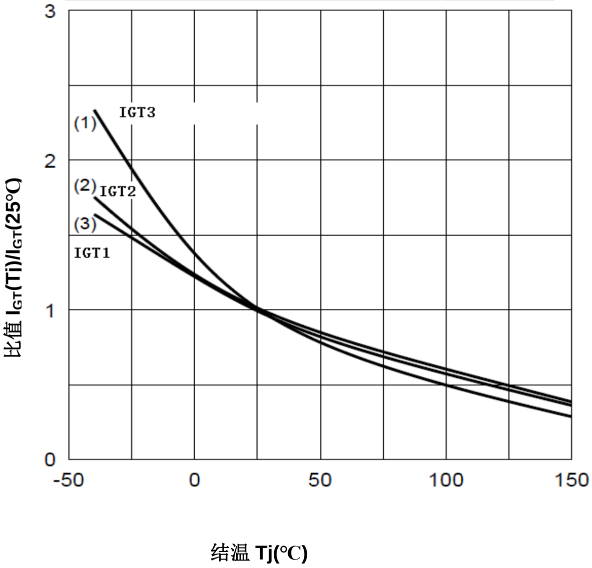
**$P_{tot}$- $I_{T(RMS)}$**



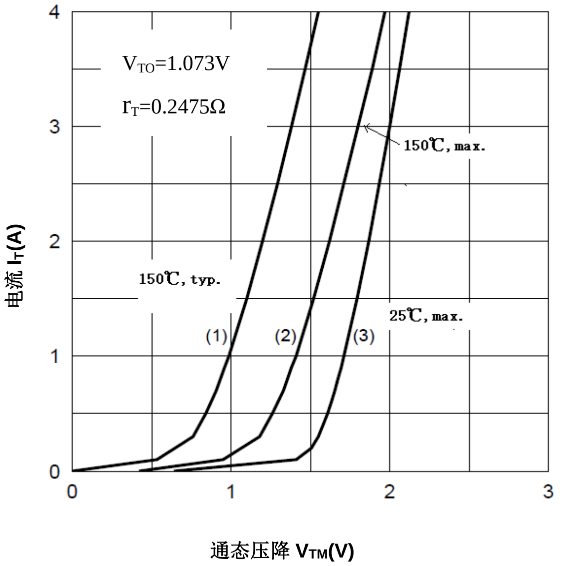
**$I_{T(RMS)}$ – $T_{mb}$**



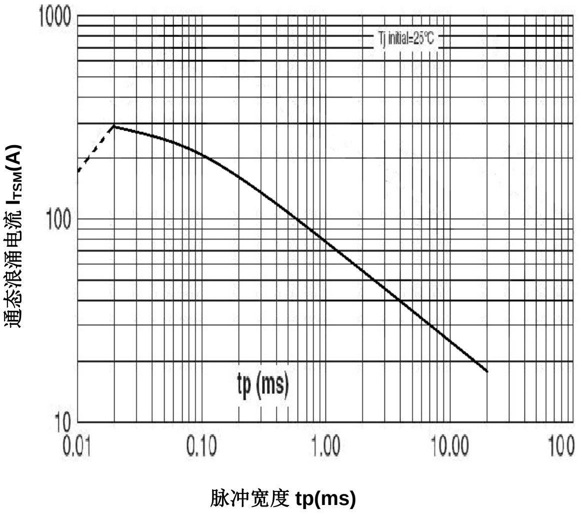
**$I_{GT}$(Tj)/$I_{GT}$(25℃) - Tj**



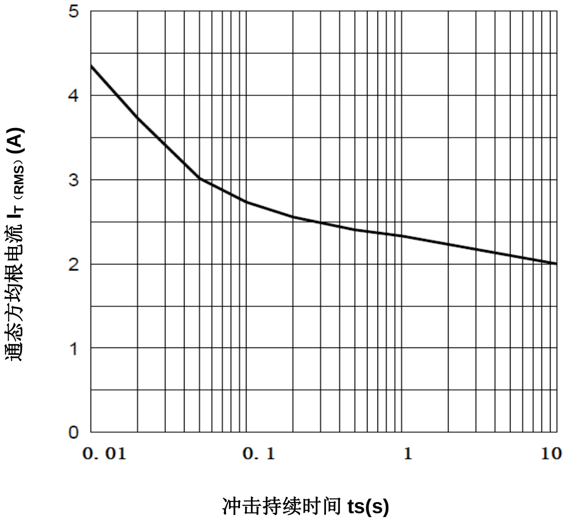
**$I_T$ – VTM**



**$I_{TSM}$ - tp**

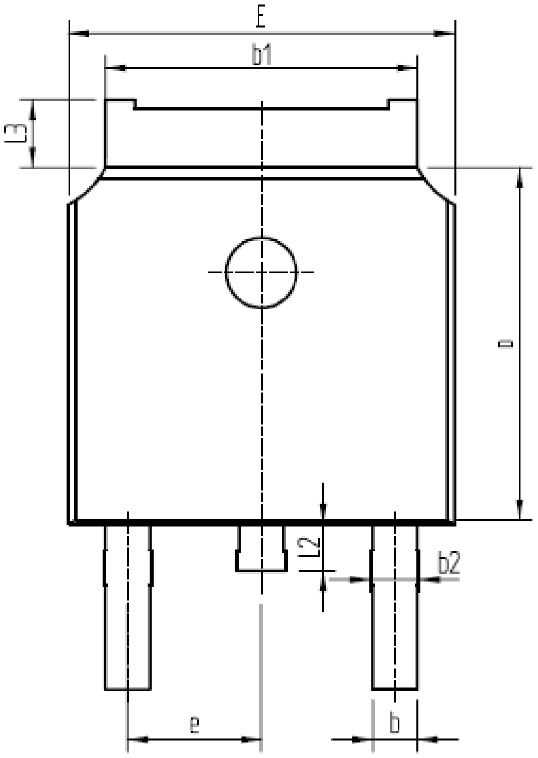


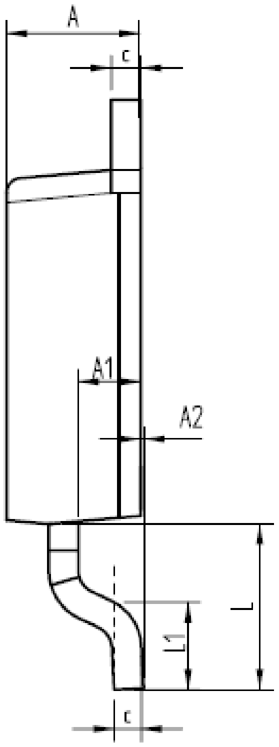
**$I_{T(RMS)}$- ts**

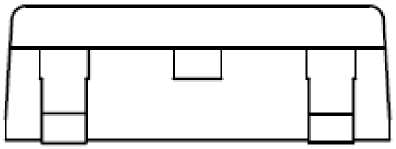


## 外形尺寸 PACKAGE MECHANICAL DATA

**DPAK** 单位 Unit ： mm







| SYMBOL | mm | |
|---|---|---|
| | MIN | MAX |
| A | 2.16 | 2.41 |
| A1 | 0.97 | 1.17 |
| A2 | 0.00 | 0.15 |
| b | 0.63 | 0.93 |
| b1 | 5.13 | 5.53 |
| b2 | 0.66 | 0.96 |
| c | 0.40 | 0.60 |
| D | 5.80 | 6.40 |
| E | 6.30 | 6.90 |
| e | 2.286BSC | |
| L | 2.50 | 3.30 |
| L1 | 1.20 | 1.80 |
| L2 | 0.60 | 1.00 |
| L3 | 0.85 | 1.30 |

## 注意事项

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