日本インター株式会社

# THYRISTOR

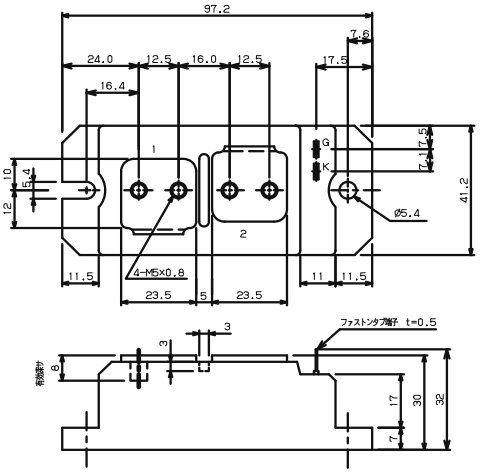
# 250A Avg 1600 Volts

**PHT25016**

## ■回路図 CIRCUIT


## ■外形寸法図 OUTLINE DRAWING

Dimension: [mm]




(注)アノードとカソード間の空間距離は5mm であり、UL1557,400V 系にて使用される場合、十分な空間距離を満足させてください。

The striking distance between the anode and the cathode of this module is 5mm, filing with UL1557, but when used by the system of 400V AC, take an enough striking distance and wire.

## ■最大定格 Maximum Ratings

| 項 目 Parameter | 記号 Symbol | 耐圧クラス Grade PHT25016 | 単位 Unit |
|---|---|---|---|
| くり返しピークオフ電圧 Repetitive Peak Off-State Voltage | $V_{DRM}$ | 1600 | V |
| 非くり返しピークオフ電圧 Non Repetitive Peak Off-State Voltage | $V_{DSM}$ | 1700 | V |
| くり返しピーク逆電圧 Repetitive Peak Reverse Voltage | $V_{RRM}$ | 1600 | V |
| 非くり返しピーク逆電圧 Non Repetitive Peak Reverse Voltage | $V_{RSM}$ | 1700 | V |

| 項 目 Parameter | | 記 号 Symbol | 条 件 Conditions | | 定格値 Max.Rated Value | 単位 Unit |
|---|---|---|---|---|---|---|
| 平均オン電流 Average On-State Current | | $I_{O(AV)}$ | 商用周波数180° 通電 Half Sine Wave | Tc=65℃ | 250 | A |
| 実効オン電流 RMS On-State Current | | $I_{T(RMS)}$ | | | 390 | A |
| サージオン電流 Surge On-State Current | | $I_{TSM}$ | 50Hz 正弦半波, 1ｻｲｸﾙ, 非くり返し Half Sine Wave, 1Pulse, Non-Repetitive | | 4000 | A |
| 電流二乗時間積 I Squared t | | $I^2t$ | 2～10ms | | 80000 | $A^2s$ |
| 臨界オン電流上昇率 Critical Rate of Rise of Turned-On Current | | di/dt | $V_D$=2/3 $V_{DRM}$, $I_{TM}$=2・Io, Tj=125℃ $I_G$=300mA, $di_G/dt$=0.2A/μs | | 100 | A/μs |
| ピークゲート電力損失 Peak Gate Power | | $P_{GM}$ | | | 5 | W |
| 平均ゲート電力損失 Average Gate Power | | $P_{G(AV)}$ | | | 1 | W |
| ピークゲート電流 Peak Gate Current | | $I_{GM}$ | | | 2 | A |
| ピークゲート電圧 Peak Gate Voltage | | $V_{GM}$ | | | 10 | V |
| ピークゲート逆電圧 Peak Gate Reverse Voltage | | $V_{RGM}$ | | | 5 | V |
| 動作接合温度範囲 Operating Junction Temperature Range | | Tjw | | | -40 ～ +125 | ℃ |
| 保存温度範囲 Storage Temperature Range | | Tstg | | | -40 ～ +125 | ℃ |
| 絶縁耐圧 Isolation Voltage | | Viso | 端子―ベース間, AC 1 分間 Terminal to Base, AC 1min. | | 2500 | V |
| 締付トルク Mounting Torque | ベース部 Mounting | F | ｻｰﾏﾙｺﾝﾊﾟｳﾝﾄﾞ塗布 Greased | M5 | 2.4 ～ 2.8 | N・m |
| | 主端子部 Terminal | | | M5 | 2.4 ～ 2.8 | N・m |

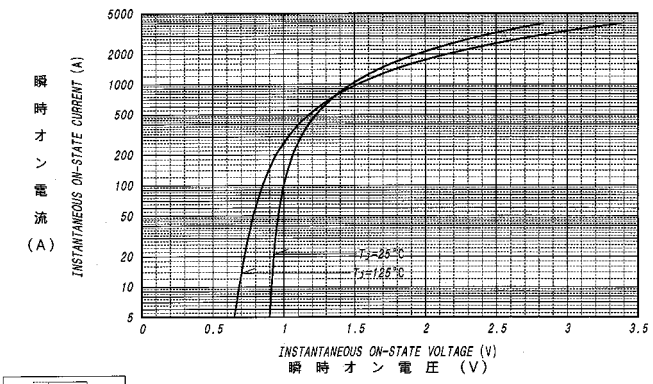
## ■電気的特性　Electrical Characteristics

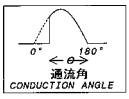
| 項　目<br>Parameter | 記号<br>Symbol | 条　件<br>Conditions | | 特性値（最大）Maximum Value<br>最小 Min. | 標準 Typ. | 最大 Max. | 単位<br>Unit |
|---|---|---|---|---|---|---|---|
| ピークオフ電流<br>Peak Off-State Current | $I_{DM}$ | $T_j$=125℃，$V_{DM}$=$V_{DRM}$ | | | | 80 | mA |
| ピーク逆電流<br>Peak Reverse Current | $I_{RM}$ | $T_j$=125℃，$V_{RM}$=$V_{RRM}$ | | | | 80 | mA |
| ピークオン電圧<br>Peak On-State Voltage | $V_{TM}$ | $T_j$=25℃，$I_{TM}$=800A | | | | 1.38 | V |
| トリガゲート電流<br>Gate Current to Trigger | $I_{GT}$ | $V_D$=6V，$I_T$=1A | $T_j$=－40℃ | | | 300 | mA |
| | | | $T_j$= 25℃ | | | 150 | mA |
| | | | $T_j$= 125℃ | | | 80 | mA |
| トリガゲート電圧<br>Gate Voltage to Trigger | $V_{GT}$ | $V_D$=6V，$I_T$=1A | $T_j$=－40℃ | | | 5 | V |
| | | | $T_j$= 25℃ | | | 3 | V |
| | | | $T_j$= 125℃ | | | 2 | V |
| 非トリガゲート電圧<br>Gate Non-Trigger Voltage | $V_{GD}$ | $T_j$=125℃，$V_D$=2/3$V_{DRM}$ | | 0.25 | | | V |
| 臨界オフ電圧上昇率<br>Critical Rate of Rise of Off-State Voltage | dv/dt | $T_j$=125℃，$V_D$=2/3$V_{DRM}$ | | 500 | | | V/μs |
| ターンオフ時間<br>Turn-Off Time | $t_q$ | $T_j$=125℃，$I_{TM}$=$I_O$，$V_D$=2/3$V_{DRM}$<br>dv/dt=20V/μs，$V_R$=100V，－di/dt=20A/μs | | | 200 | | μs |
| ターンオン時間<br>Turn-On Time | $t_{gt}$ | $T_j$=25℃，$V_D$=2/3$V_{DRM}$<br>$I_G$=300mA，$di_G$/dt=0.2A/μs | | | 6 | | μs |
| 遅れ時間<br>Delay Time | $t_d$ | | | | 2 | | μs |
| 立上がり時間<br>Rise Time | $t_r$ | | | | 4 | | μs |
| ラッチング電流<br>Latching Current | $I_L$ | $T_j$=25℃ | | | 150 | | mA |
| 保持電流<br>Holding Current | $I_H$ | $T_j$=25℃ | | | 100 | | mA |
| 熱抵抗<br>Thermal Resistance | $R_{th(j-c)}$ | 接合部－ケース間<br>Junction to Case | | | | 0.18 | ℃/W |
| 接触熱抵抗<br>Thermal Resistance | $R_{th(c-f)}$ | ケース－フィン間，サーマルコンパウンド塗布<br>Case to Fin, Greased | | | | 0.1 | ℃/W |

質量…約250g
Approximate Weight

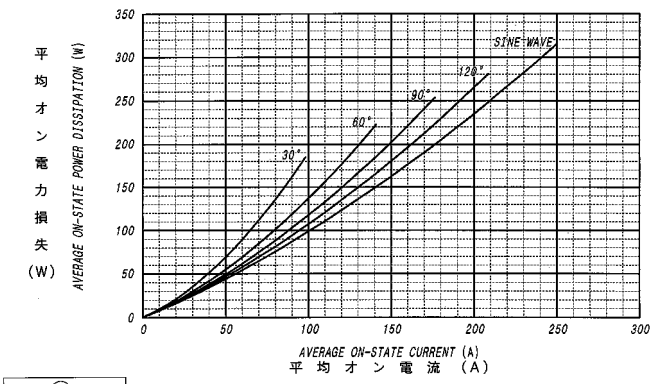
## ■定格・特性曲線

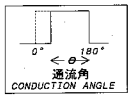
オン電圧特性
ON-STATE CURRENT VS. VOLTAGE



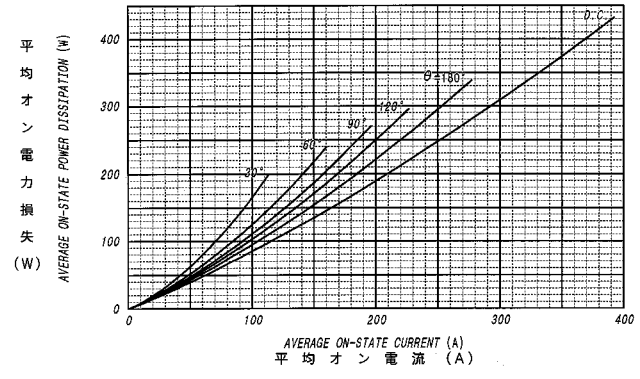



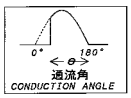

平均オン電力損失特性
AVERAGE ON-STATE POWER DISSIPATION
for SINUSOIDAL CURRENT WAVEFORM



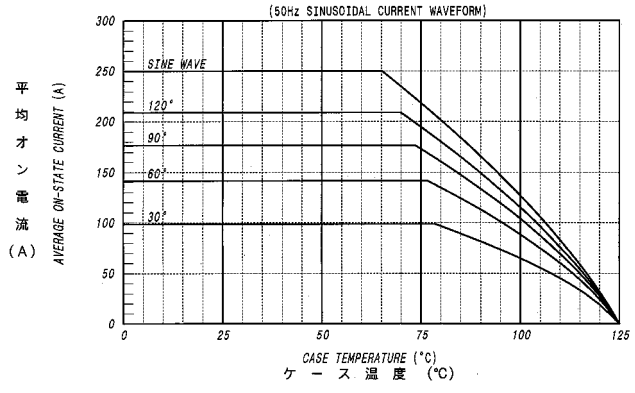



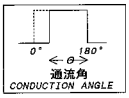

平均オン電力損失特性
AVERAGE ON-STATE POWER DISSIPATION
for RECTANGULAR CURRENT WAVEFORM



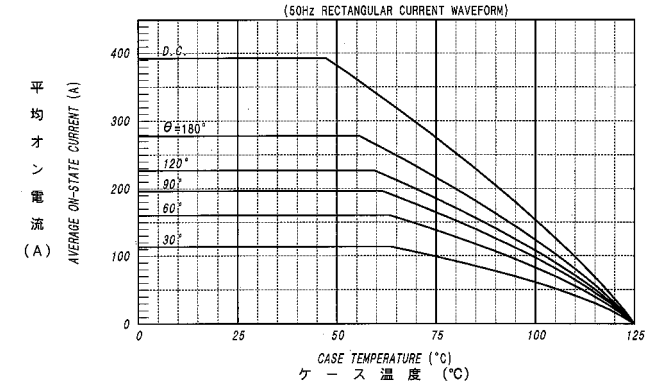




平均オン電流－ケース温度定格
AVERAGE ON-STATE CURRENT VS. CASE TEMPERATURE
(50Hz SINUSOIDAL CURRENT WAVEFORM)

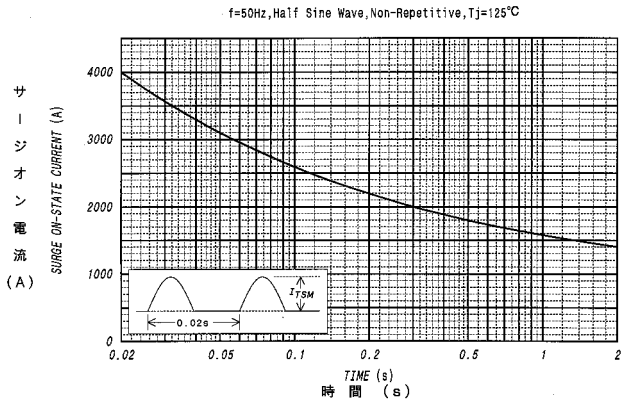




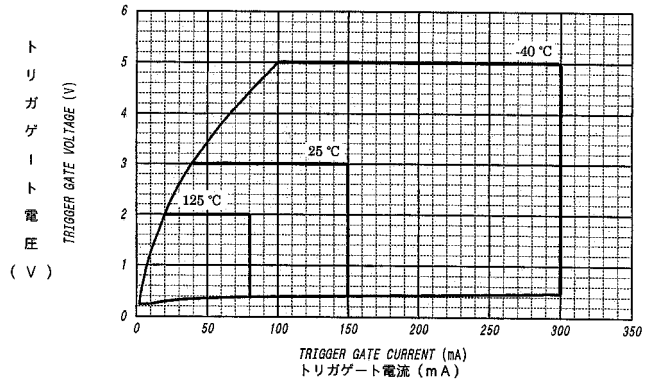

## 平均オン電流－ケース温度定格
*AVERAGE ON-STATE CURRENT VS. CASE TEMPERATURE*



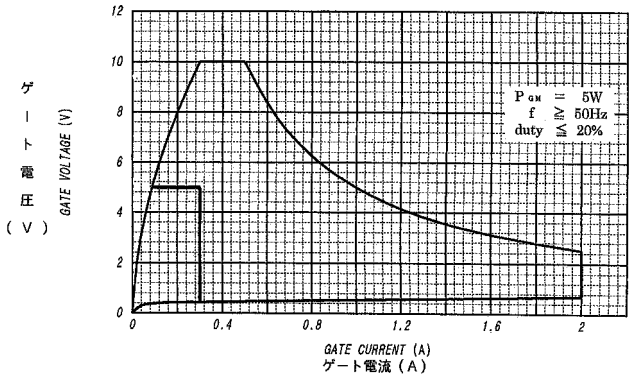

## サージオン電流定格
*SURGE CURRENT RATINGS*




## ゲート特性
*GATE CHARACTERISTCS*




## ゲート定格
*GATE RATINGS*




## 過渡熱抵抗特性
*MAXIMUM TRANSIENT THERMAL IMPEDANCE*