# BT160100H-1600JP

Silicon Controlled Rectifier

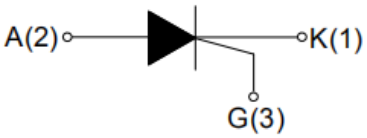
## Features

- Blocking Voltage to 1600V
- High dV/dt Rate
- $I_{T(RMS)}$ to 160A of SCR
- $I_{T(AV)}$ to 100A of SCR
- RoHS Compliant & HF
- High Junction Temperature
- High Environment Temperature Condition




**TO-247PLUS**

## Pin Configuration




## Absolute Maximum Ratings（Tc=25℃ Unless otherwise specified）

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Storage temperature range | $T_{stg}$ | -40~150 | ℃ |
| Operating junction temperature range | $T_j$ | -40~150 | ℃ |
| Repetitive peak off-state voltage ($T_j$=25℃) | $V_{DRM}$ | 1600 | V |
| Repetitive peak reverse voltage ($T_j$=25℃) | $V_{RRM}$ | 1600 | V |
| RMS on-state current | $I_{T(RMS)}$ | 160 | A |
| Average on-state current (180° conduction angle) | $I_{T(AV)}$ | 100 | A |
| Non repetitive surge peak on-state current (full cycle, F=50Hz) | $I_{TSM}$ | 1100 | A |
| $I^2t$ value for fusing (tp=10ms) | $I^2t$ | 6050 | $A^2s$ |
| Critical rate of rise of on-state current ($I_G$=2×$I_{GT}$) | dI/dt | 150 | A/μs |
| Peak gate current | $I_{GM}$ | 5 | A |
| Average gate power dissipation | $P_{G(AV)}$ | 1 | W |
| Thermal Resistance(between Junction and Case) | $R_{th(J-C)}$ | 0.22（Typ.） | ℃/W |

## Electronics Characteristics（Tc=25℃ Unless otherwise specified）

| Parameter | Symbol | Min | Typ | Max | Unit |
|---|---|---|---|---|---|
| Gate Trigger Current (Continuous dc)@$V_D$=12V, $R_L$=33Ω | $I_{GT}$ | - | - | 100 | mA |
| Gate Trigger Voltage (Continuous dc) @$V_D$=12V, $R_L$=33Ω | $V_{GT}$ | - | - | 1.5 | V |
| Gate non-trigger voltage@$V_D$=$V_{DRM}$ | $V_{GD}$ | 0.2 | - | - | V |
| Holding Current@$I_T$=500mA | $I_H$ | - | - | 200 | mA |
| Latching Current@$I_G$=1.2$I_{GT}$ | $I_L$ | - | - | 250 | mA |
| Critical Rate of Rise of Off State Voltage @$V_D$=0.67×$V_{DRM}$, $T_j$=150℃,Gate Open | dV/dt | 1000 | - | - | V/μs |
| Peak Forward On-State Voltage @$I_{TM}$=100A,tp=380μs, $T_j$=25℃ | $V_{TM}$ | - | - | 1.55 | V |
| Repetitive peak off-state current @$V_{DRM}$=$V_{RRM}$,$T_j$=25℃ | $I_{DRM}$ | - | - | 100 | μA |
| Reverse Blocking Current @$V_{DRM}$=$V_{RRM}$,$T_j$=150℃ | $I_{RRM}$ | - | - | 15 | mA |

Note: The above typical parameters or typical characteristics are only indicative and do not make specific guarantees. If detailed values are required, additional communication and provision are required.

**FIG.1: Maximum power dissipation versus Average on-state current**

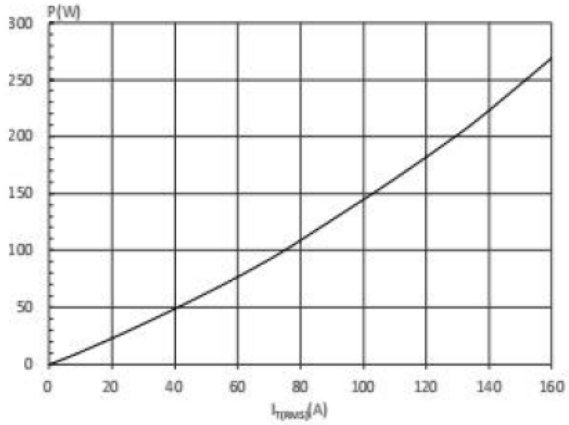



**FIG.2: Average on-state current versus case temperature**

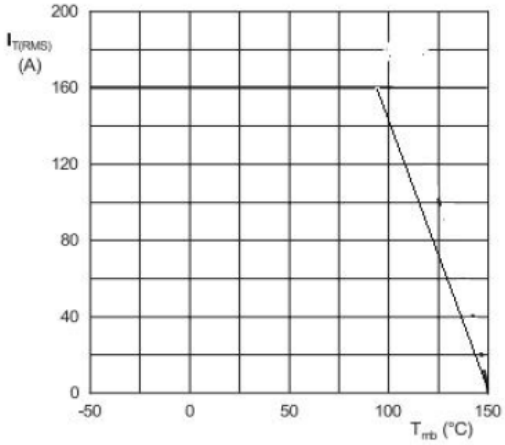



**FIG.3: Surge peak on-state current versus number of cycles**

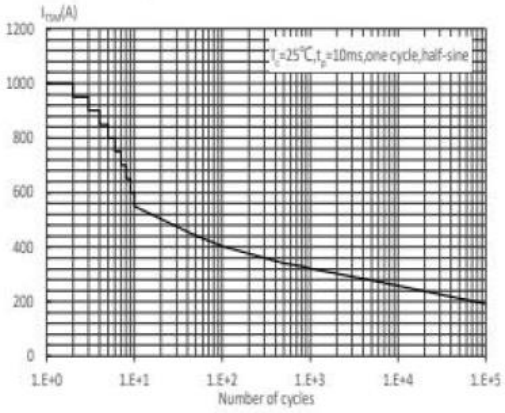



**FIG.4:On-state characteristics (maximum values)**

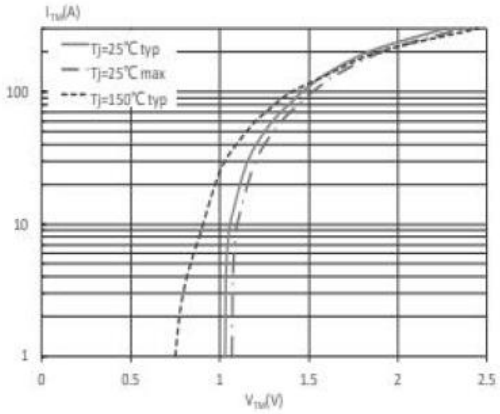



**FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<10ms, and corresponging value of $I^2t$**

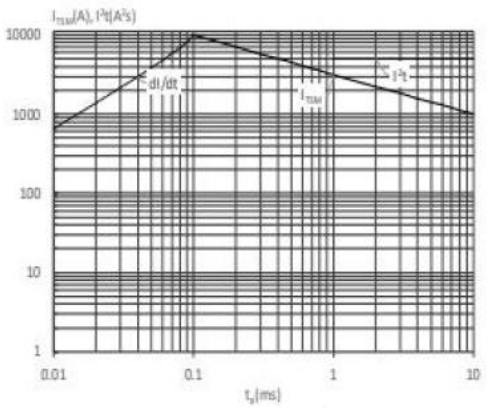
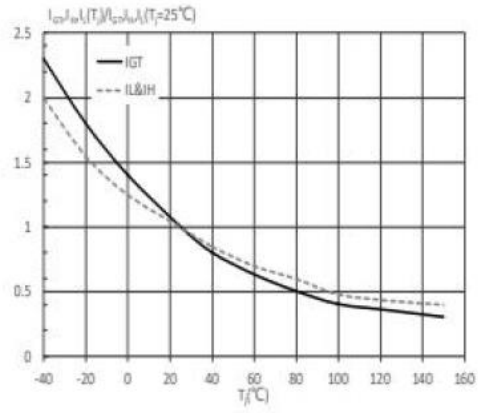
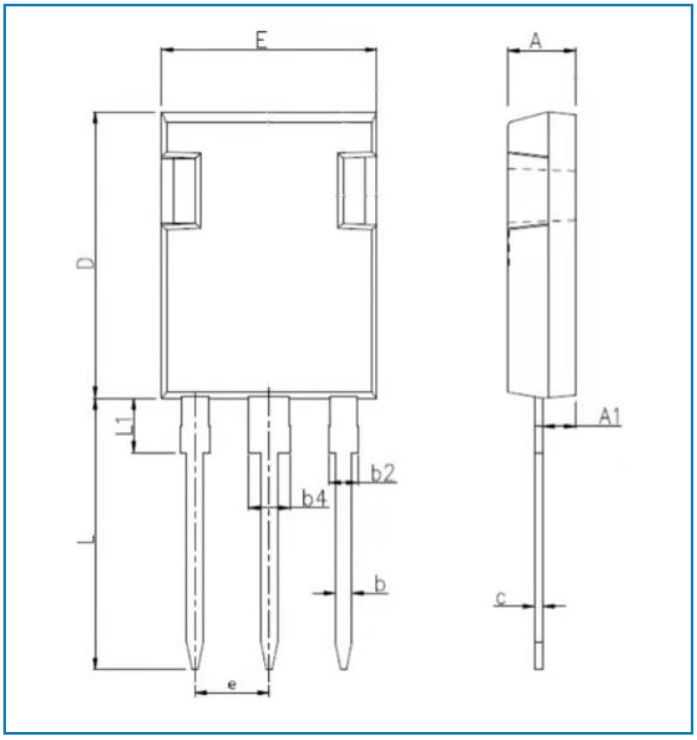



**FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature**

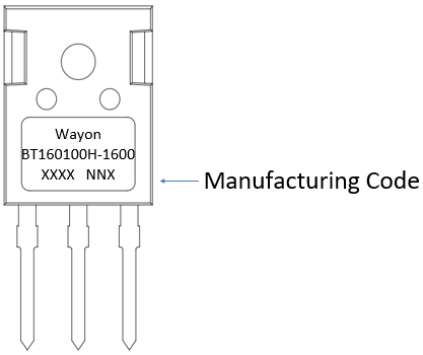


## Outline Drawing- TO-247PLUS

| SYMBOL | MM | | |
|---|---|---|---|
| | MIN | NOM | MAX |
| A | 4.80 | 5.00 | 5.20 |
| A1 | 2.00 | - | 3.00 |
| b | 1.00 | 1.20 | 1.40 |
| b2 | 1.75 | - | 2.50 |
| b4 | 1.75 | - | 3.50 |
| c | 0.41 | 0.60 | 0.79 |
| D | 20.0 | - | 22.3 |
| E | 15.0 | - | 16.1 |
| e | 5.4BSC | | |
| L | 14.0 | - | 21.3 |
| L1 | - | - | 5.50 |



## Marking Code:




## Part Number System

BT 160 100 H - 1600 JP

- BT: SCR
- 160 100: $I_{T(RMS)}$:160A $I_{GT}$:100mA
- H: high junction temperature
- 1600: $V_{DRM}$、$V_{RRM}$: 1600：1600V
- JP: JP：TO-247PLUS

## Package Information

| Package | Base qty. | Delivery mode |
|---|---|---|
| TO-247PLUS | 30 | Tube |

## Contact Information

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## Product Specification Statement

1.The product specification aims to provide users with a reference regarding various product parameters, performance, and usage. It presents certain aspects of the product's performance in graphical form and is intended solely for users to select product and make product comparisons, enabling users to better understand and evaluate the characteristics and advantages of the product. It does not constitute any commitment, warranty, or guarantee.

2.The product parameters described in the product specification are numerical values, characteristics, and functions obtained through actual testing or theoretical calculations of the product in an independent or ideal state. Due to the complexity of product applications and variations in test conditions and equipment, there may be slight fluctuations in parameter test values. WAYON shall not guarantee that the actual performance of the product when installed in the customer's system or equipment will be entirely consistent with the product specification, especially concerning dynamic parameters. It is recommended that users consult with professionals for product selection and system design. Users should also thoroughly validate and assess whether the actual parameters and performance when installed in their respective systems or equipment meet their requirements or expectations. Additionally, users should exercise caution in verifying product compatibility issues, and WAYON assumes no responsibility for the application of the product.

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