## Features

－High speed．
－High breakdown voltage（ $\left.\mathrm{V}_{\mathrm{CBO}}=1600 \mathrm{~V}\right)$ ．
－High reliability（Adoption of HVP process）．
－Adoption of MBIT process．

## Package Dimensions

unit：mm
2048B


## Specifications

Absolute Maximum Ratings at $\mathrm{Ta}=25^{\circ} \mathrm{C}$

| Parameter | Symbol | Conditions | Ratings | Unit |
| :---: | :---: | :---: | :---: | :---: |
| Collector－to－Base Voltage | $\mathrm{V}_{\mathrm{CBO}}$ |  | 1600 | V |
| Collector－to－Emitter Voltage | $\mathrm{V}_{\mathrm{CEO}}$ |  | 800 | V |
| Emitter－to－Base Voltage | $\mathrm{V}_{\text {EBO }}$ |  | 6 | V |
| Collector Current | ${ }^{\text {I }}$ |  | 20 | A |
| Collector Current（Pulse） | $\mathrm{I}_{\mathrm{CP}}$ |  | 40 | A |
| Collector Dissipation | ${ }^{\text {PC }}$ |  | 3.5 | W |
|  |  | Tc $=25^{\circ} \mathrm{C}$ | 180 | W |
| Junction Temperature | Tj |  | 150 | ${ }^{\circ} \mathrm{C}$ |
| Storage Temperature | Tstg |  | -55 to +150 | ${ }^{\circ} \mathrm{C}$ |

Electrical Characteristics at $\mathrm{Ta}=25^{\circ} \mathrm{C}$

| Parameter | Symbol | Conditions | Ratings |  |  | Unit |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | min | typ | max |  |
| Collector Cutoff Current | ICES | $\mathrm{V}_{\mathrm{CE}}=1600 \mathrm{~V}, \mathrm{R}_{\mathrm{BE}}=0$ |  |  | 1.0 | mA |
| Collector－to－Emitter Sustain Voltage | $\mathrm{V}_{\text {CEO }}$（sus） | $\mathrm{I}_{\mathrm{C}}=100 \mathrm{~mA}, \mathrm{I}_{\mathrm{B}}=0$ | 800 |  |  | V |
| Emitter Cutoff Current | lebo | $\mathrm{V}_{\text {EB }}=4 \mathrm{~V}, \mathrm{I}_{\mathrm{C}}=0$ |  |  | 1.0 | mA |
| Collector Cutoff Current | ICBO | $\mathrm{V}_{\mathrm{CB}}=800 \mathrm{~V}, \mathrm{I}_{\mathrm{E}}=0$ |  |  | 10 | $\mu \mathrm{A}$ |
| DC Current Gain | $\mathrm{h}_{\text {FE }}{ }^{1}$ | $\mathrm{V}_{\mathrm{CE}}=5 \mathrm{~V}, \mathrm{I}_{\mathrm{C}}=1 \mathrm{~A}$ | 15 |  | 30 |  |
|  | $\mathrm{h}_{\mathrm{FE}}{ }^{2}$ | $\mathrm{V}_{\mathrm{CE}}=5 \mathrm{~V}, \mathrm{I}_{\mathrm{C}}=14 \mathrm{~A}$ | 4 |  | 7 |  |

■ Any and all SANYO products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability，such as life－support systems，aircraft＇s control systems，or other applications whose failure can be reasonably expected to result in serious physical and／or material damage．Consult with your SANYO representative nearest you before using any SANYO products described or contained herein in such applications．

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Continued from preceding page．

| Parameter | Symbol | Conditions | Ratings |  |  | Unit |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | min | typ | max |  |
| Collector－to－Emitter Saturation Voltage | $\mathrm{V}_{\text {CE（sat）}}$ | ${ }^{1} \mathrm{C}=14 \mathrm{~A}, \mathrm{I}_{\mathrm{B}}=3.5 \mathrm{~A}$ |  |  | 5 | V |
| Base－to－Emitter Saturation Voltage | $\mathrm{V}_{\mathrm{BE} \text {（sat）}}$ | $\mathrm{I}_{\mathrm{C}}=14 \mathrm{~A}, \mathrm{I}_{\mathrm{B}}=3.5 \mathrm{~A}$ |  |  | 1.5 | V |
| Storage Time | $\mathrm{t}_{\text {stg }}$ | $\mathrm{I}^{\mathrm{C}}=12 \mathrm{~A}, \mathrm{I}_{\mathrm{B} 1}=2.0 \mathrm{~A}, \mathrm{I}_{\mathrm{B} 2}=-5.0 \mathrm{~A}$ |  |  | 3.0 | $\mu \mathrm{s}$ |
| Fall Time | $\mathrm{t}_{\mathrm{f}}$ | $\mathrm{I}_{\mathrm{C}}=12 \mathrm{~A}, \mathrm{I}_{\mathrm{B} 1}=2.0 \mathrm{~A}, \mathrm{I}_{\mathrm{B} 2}=-5.0 \mathrm{~A}$ |  |  | 0.2 | $\mu \mathrm{s}$ |

## Switching Time Test Circuit








Forward Bias A S O


PC - Ta




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