

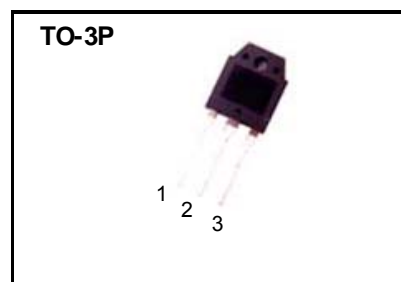
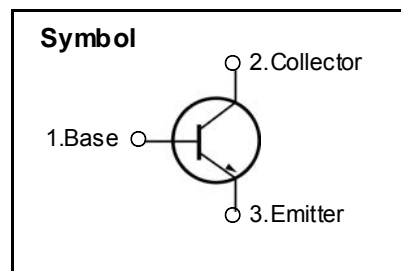
Switch Mode series NPN silicon Power Transistor

Features

- ◆ High voltage, high speed power switching
- ◆ Low $V_{CE(sat)}$

General Description

This device is designed for high voltage, high speed switching characteristic required such as switching regulator, inverters, motor controls.



Absolute Maximum Ratings ($T_J = 25^\circ\text{C}$ unless otherwise specified)

| Parameter | Symbol | Maximum rating | Unit |
|---|--------|----------------|------------------|
| Collector-Base Voltage | VCBO | 500 | V |
| Collector-Emitter Voltage | VCEO | 400 | V |
| Emitter-Base Voltage | VEBO | 7 | V |
| Collector Current(DC) | IC | 15 | A |
| Base Current | IB | 5 | A |
| Collector Dissipation($T_c=25^\circ\text{C}$) | PC | 80 | W |
| Junction Temperature | TJ | 150 | $^\circ\text{C}$ |
| Storage Temperature | TSTG | -65 ~ 150 | $^\circ\text{C}$ |

SBW3320

Electrical Characteristics (TC = 25°C Unless otherwise noted)

| Parameter | Symbol | Test Condition | Min | Typ | Max | Unit |
|--------------------------------------|----------------|-----------------|-----|-----|-----|---------|
| Collector-Emitter Breakdown Voltage | V_{CEO} | IC=10mA, IB=0 | 400 | | | V |
| Collector-Emitter Breakdown Voltage | $V_{CEO(SUS)}$ | IC=0.2A | 400 | | | V |
| Collector Cut-off Current | I_{CBO} | VCB=500V, IE=0 | | | 1 | mA |
| Emitter Cutoff Current | I_{EBO} | VEB=7V, IC=0 | | | 1 | mA |
| DC Current Gain | h_{FE} | VCE=5V, IC=6A | 10 | | 40 | - |
| Collector-Emitter Saturation Voltage | $V_{CE(SAT)}$ | IC=6A, IB=1.2A | | | 1 | V |
| Base-Emitter Saturation Voltage | $V_{BE(SAT)}$ | IC=6A, IB=1.2A | | | 1.5 | V |
| Storage Time | t_{STG} | VCC=5V, IC=0.5A | 1 | | 4 | μ S |
| Fall Time | t_f | (UI9600) | | | 0.8 | μ S |



Fig. 1 Static Characteristics

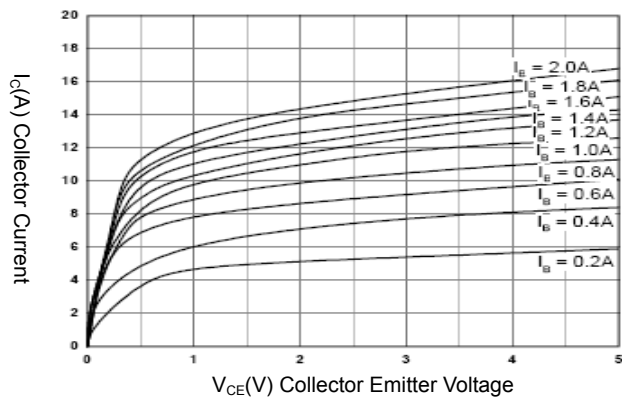


Fig. 2 DC Current Gain

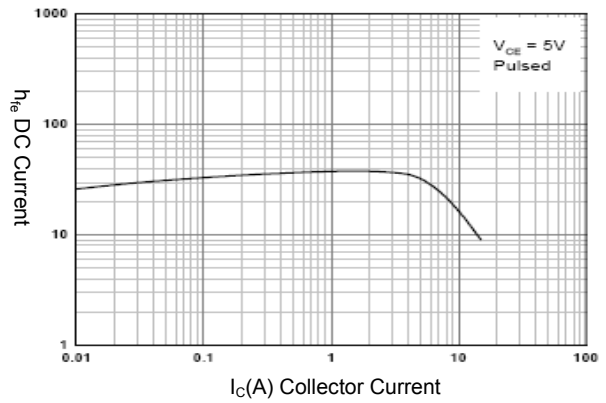


Fig. 3 Saturation Voltage

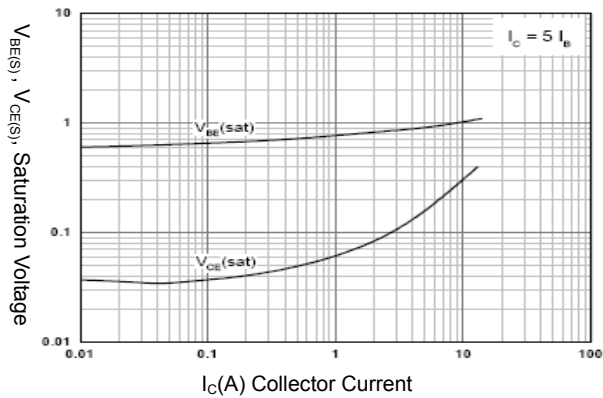


Fig. 4 Safe Operation Area

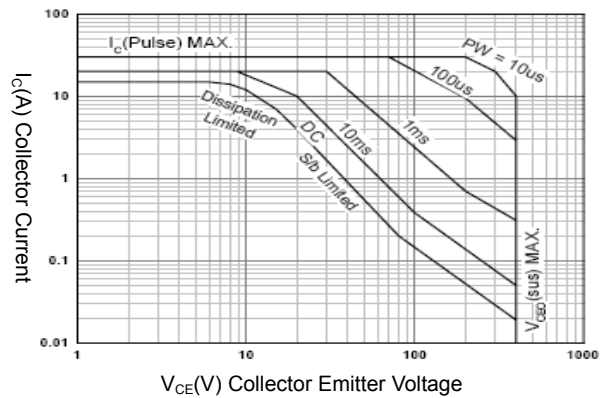
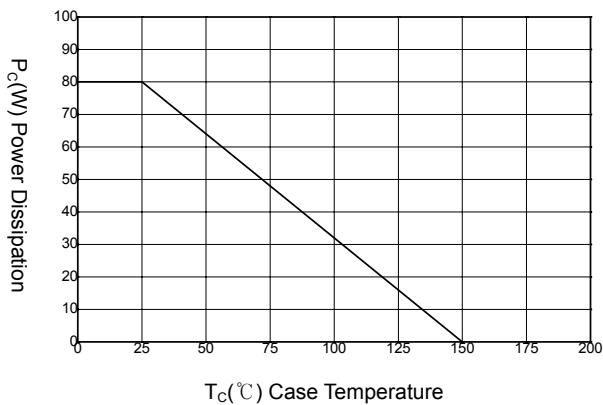
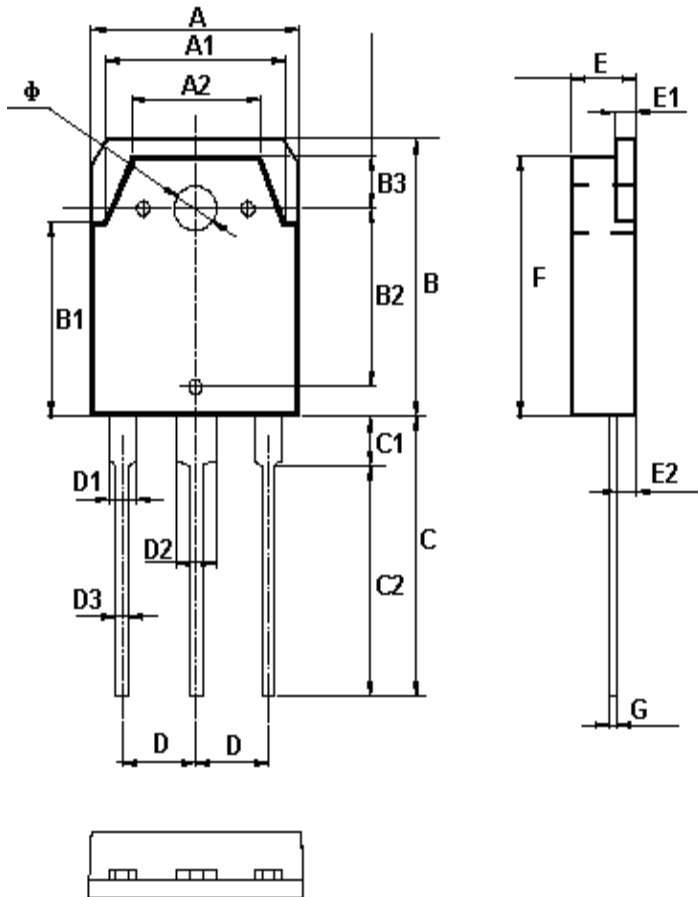


Fig. 5 Power Derating



SBW3320

TO-3P Package Dimension



| corresponding symbol | measurement | |
|----------------------|-------------|----------------|
| A(mm) | 15.60±0.20 | |
| A1(mm) | 13.60±0.20 | |
| A2(mm)dia. | 9.60±0.20 | |
| B(mm) | 19.90±0.20 | |
| B1(mm) | 13.90±0.20 | |
| B2(mm) | 12.76±0.20 | |
| B3(mm) | 3.80±0.20 | |
| C(mm) | 20.00±0.30 | |
| C1(mm) | 3.50±0.20 | |
| C2(mm) | 16.50±0.30 | |
| D(mm) | 5.45(TYP) | |
| D1 | 2.0 ±0.20 | |
| D2 | 3.0±0.20 | |
| D3 | 1.00±0.20 | |
| E(mm) | 4.80±0.20 | |
| E1(mm) | 1.50± | +0.15 -0.05 |
| E2(mm) | 1.40±0.20 | |
| F(mm) | 18.70±0.20 | |
| G(mm) | 0.60 | +0.15 -0.05 |
| φ(mm) | 3.20±0.10 | |