Shantou Huashan Electronic Devices Co.,Ltd.

NPN SILICON TRANSISTOR

# HS13003

## HIGH VOLTAGE SWITCH MODE APPLICATIONS

High Speed Switching

Suitable for Switching Regulator and Montor Control

## ABSOLUTE MAXIMUM RATINGS（$T_a$=25℃）

$T_{stg}$——Storage Temperature…… -65~150℃

$T_j$——Junction Temperature……150℃

$P_C$——Collector Dissipation……30W

$V_{CBO}$——Collector-Base Voltage……600V

$V_{CEO}$——Collector-Emitter Voltage……400V

$V_{EBO}$——Emitter-Base Voltage……9V

$I_C$——Collector Current……1.5A




1—Base，B

2—Collector，C

3— Emitter，E

## ELECTRICAL CHARACTERISTICS（$T_a$=25℃）

| Symbol | Characteristics | Min | Typ | Max | Unit | Test Conditions |
|---|---|---|---|---|---|---|
| $BV_{CBO}$ | Collector-Base Breakdown Voltage | 600 | | | V | $I_C$=1mA, $I_E$=0 |
| $BV_{CEO}$ | Collector-Emitter Breakdown Voltage | 400 | | | V | $I_C$=10mA, $I_B$=0 |
| $BV_{EBO}$ | Emitter-Base Breakdown Voltage | 9 | | | V | $I_E$=1mA， $I_C$=0 |
| $H_{FE}$ | DC Current Gain | 10 | | 40 | | $V_{CE}$=10V, $I_C$=0.1A |
| $V_{CE(sat)1}$ | Collector- Emitter Saturation Voltage | | | 0.8 | V | $I_C$=1A, $I_B$=500mA |
| $V_{CE(sat)2}$ | Collector- Emitter Saturation Voltage | | | 0.8 | V | $I_C$=0.5A, $I_B$=100mA |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage | | | 1.2 | V | $I_C$=0.5A, $I_B$=100mA |
| $I_{CBO}$ | Collector Cut-off Current | | | 10 | μA | $V_{CB}$=500V, $I_E$=0 |
| $I_{EBO}$ | Emitter-Base Cut-off Current | | | 10 | μA | $V_{EB}$=9V, $I_C$=0 |
| $f_T$ | Current Gain-Bandwidth Product | 8 | | | MHz | $V_{CE}$=10V,$I_C$=0.1A,f=1MHz |
| $t_{ON}$ | Turn On Time | | | 1.1 | μs | $V_{CC}$=125V, $I_C$=1A, |
| $t_{STG}$ | Storage Time | | | 4.0 | μs | $I_{B1}$=0.2A,$I_{B2}$=-0.2A |
| $t_F$ | Fall Time | | | 0.7 | μs | $R_L$=125Ω |

## $h_{FE}$ Classification

| H1 | H2 | H3 | H4 | H5 |
|---|---|---|---|---|
| 10-16 | 14-21 | 19-26 | 24-31 | 29-40 |