Shantou Huashan Electronic Devices Co.,Ltd.

NPN SILICON TRANSISTOR

# KSH13005W

## HIGH VOLTAGE SWITCH MODE APPLICICATION

High Speed Switching
Suitable for Switching Regulator and Montor Control

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

$T_{stg}$——Storage Temperature····· −55~150℃
$T_j$——Junction Temperature····· 150℃
$P_C$——Collector Dissipation（$T_c$=25℃）····· 75W
$V_{CBO}$——Collector-Base Voltage····· 700V
$V_{CEO}$——Collector-Emitter Voltage····· 400V
$V_{EBO}$——Emitter-Base Voltage····· 9V
$I_C$——Collector Current（DC）····· 4A
$I_C$——Collector Current（Pulse）····· 8A
$I_B$——Base Current·····2A

TO-263（D2PAK）

1－Base，B
2－Collector，C
3－Emitter, E

## 电参数（$T_a$=25℃）

| Symbol | Characteristics | Min | Typ | Max | Unit | Test Conditions |
|---|---|---|---|---|---|---|
| $BV_{CEO}$ | Collector-Emitter Sustaining Voltage | 400 | | | V | $I_C$=10mA, $I_B$=0 |
| $I_{EBO}$ | Emitter-Base Cut-off Current | | | 1 | mA | $V_{EB}$=9V, $I_C$=0 |
| $H_{FE}$ | DC Current Gain | 10 | | 40 | | $V_{CE}$=5V, $I_C$=1A |
| | | 8 | | 40 | | $V_{CE}$=5V, $I_C$=2A |
| $V_{CE(sat)}$ | Collector- Emitter Saturation Voltage | | | 0.5 | V | $I_C$=1A, $I_B$=0.2A |
| | | | | 0.6 | V | $I_C$=2A, $I_B$=0.5A |
| | | | | 1 | V | $I_C$=4A, $I_B$=1A |
| $V_{BE(sat)}$ | Base- Emitter Saturation Voltage | | | 1.2 | V | $I_C$=1A, $I_B$=0.2A |
| | | | | 1.6 | V | $I_C$=2A, $I_B$=0.5A |
| Cob | Output Capacitance | | 65 | | pF | $V_{CB}$=10V, f=0.1MHz |
| $f_T$ | Current Gain-Bandwidth Product | 4 | | | MHz | $V_{CE}$=10V, $I_C$=0.5A |
| $t_{ON}$ | Turn On Time | | | 0.8 | μs | $V_{CC}$=125V, |
| $t_S$ | Storage Time | | | 4 | μs | $I_C$=2A, |
| $t_F$ | Fall Time | | | 0.9 | μs | $I_{B1}$=-$I_{B2}$=0.4A |

**$h_{FE}$ classification：H1（10--16） H2（14--21） H3（19--26） H4（24--31） H5（29--40）**

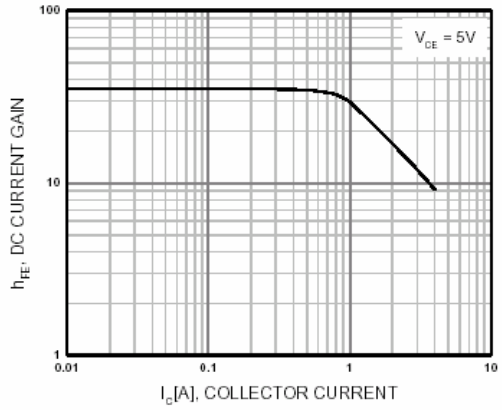


Figure 1. DC current Gain

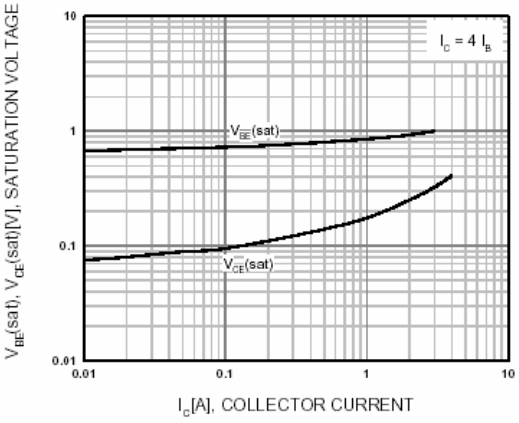


Figure 2. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

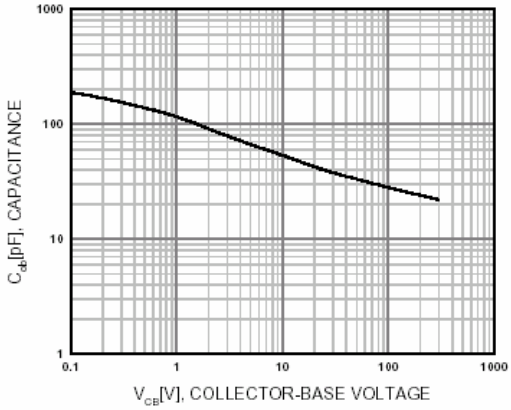


Figure 3. Collector Output Capacitance

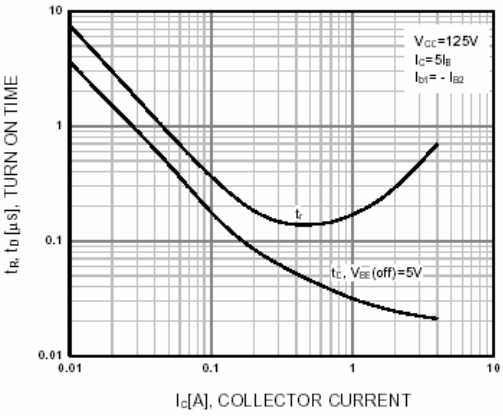


Figure 4. Turn On Time

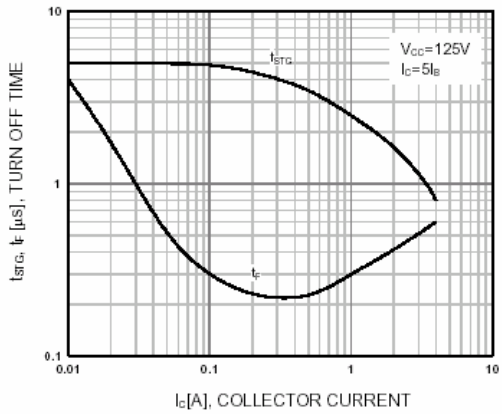


Figure 5. Turn Off Time

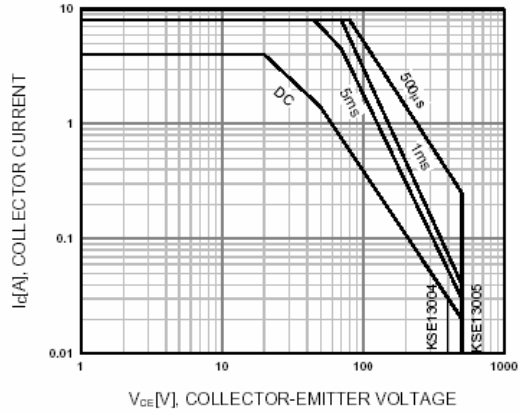


Figure 6. Safe Operating Area

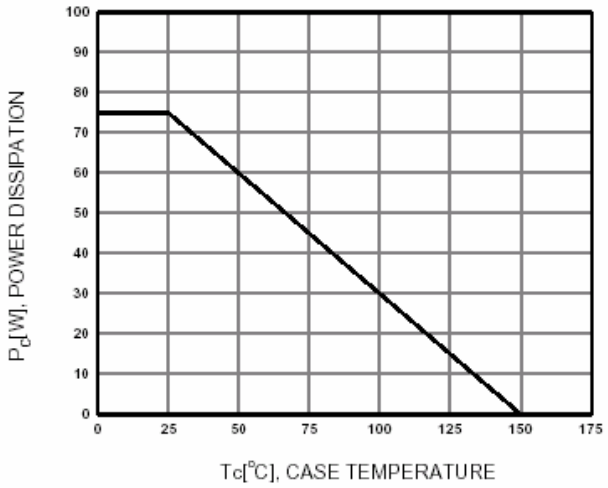


**Figure 7. Power Derating**