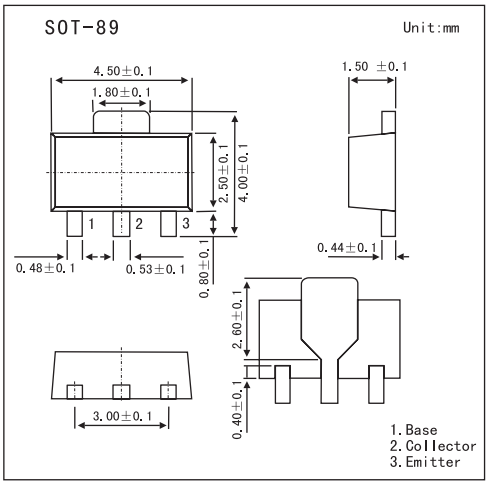
TY Semicondutor®

**Product specification**

# 2SD1664




## ■ Features

- Low $V_{CE(sat)}$
- Compliments to 2SB1132

## ■ Absolute Maximum Ratings Ta = 25℃

| Parameter | Symbol | Rating | Unit |
|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | 40 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | 32 | V |
| Emitter-Base Voltage | $V_{EBO}$ | 5 | V |
| Collector Current (DC) | $I_C$ | 1 | A |
| $P_W$=20ms, duty=1/2 | | 2 | A |
| Collector Power Dissipation | $P_C$ * | 0.5 | W |
| Jumction temperature | $T_j$ | 150 | ℃ |
| Storage temperature Range | $T_{stg}$ | -55 to +150 | ℃ |

* mounted on a 40x40x0.7mm ceramic board.

## ■ Electrical Characteristics Ta = 25℃

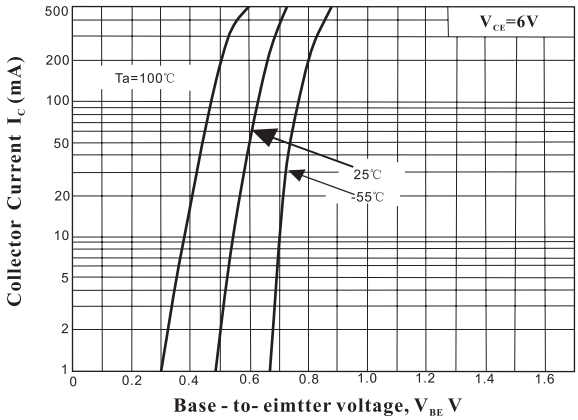
| Parameter | Symbol | Testconditons | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Collector Cut-off Current | $I_{CBO}$ | $V_{CB}$ = 20V , $I_E$ = 0 | | | 0.5 | μA |
| Emitter Cut-off Current | $I_{EBO}$ | $V_{EB}$ = 4V , $I_C$ = 0 | | | 0.5 | μA |
| Collector-base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C$ = 50uA , $I_E$ = 0 | 40 | | | V |
| Collector-emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C$ = 1mA , $I_B$ = 0 | 32 | | | V |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E$ = 50uA | 5 | | | |
| DC Current Gain | $h_{FE}$ | $V_{CE}$ = -3V , $I_C$ = -0.1A | 82 | | 390 | |
| Collector-emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C$ = 500mA , $I_B$ = 50mA | | 0.15 | 0.4 | V |
| Transition Frequency | $f_T$ | $V_{CE}$ = 5V , $I_E$ = -50mA , f = 100MHz | | 150 | | MHz |
| Collector Output Capacitance | $C_{ob}$ | $V_{CB}$ = 10V , $I_E$ = 0 , f = 1MHz | | 15 | | pF |

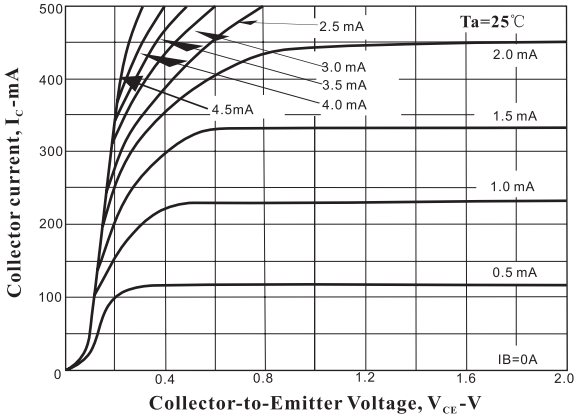
## ■ $h_{FE}$ Classification

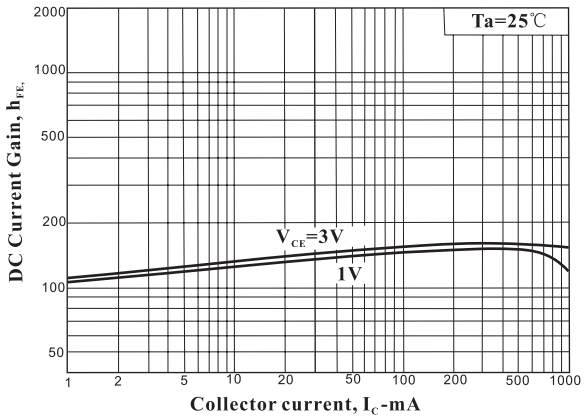
| Marking | DA | | |
|---|---|---|---|
| Rank | P | Q | R |
| $h_{FE}$ | 82 ～ 180 | 120 ～ 270 | 180 ～ 390 |

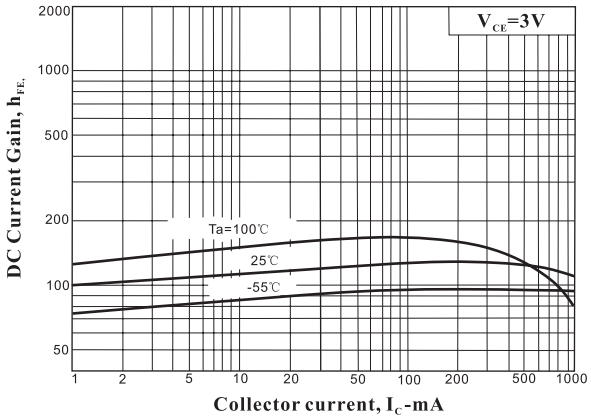
# 2SD1664

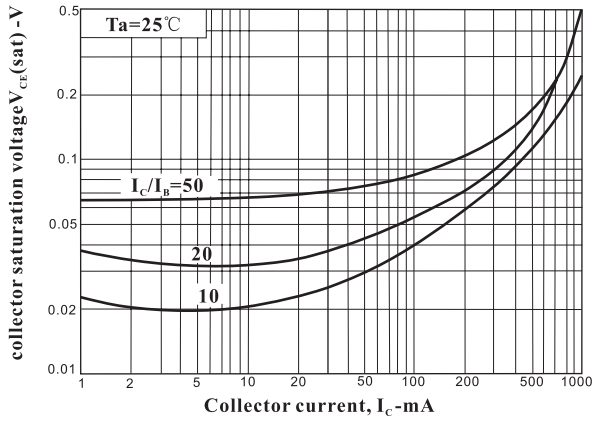
## ■ Electrical Characteristics Curves

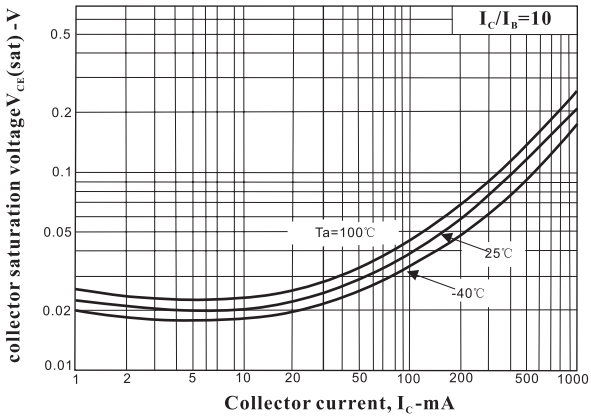


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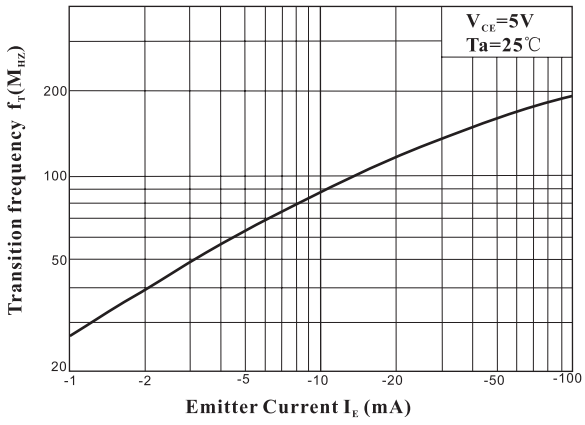
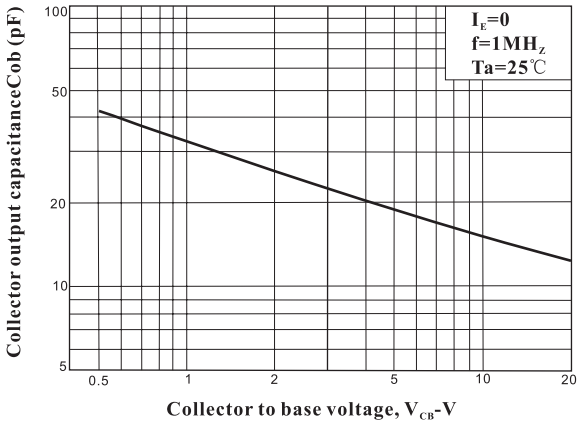
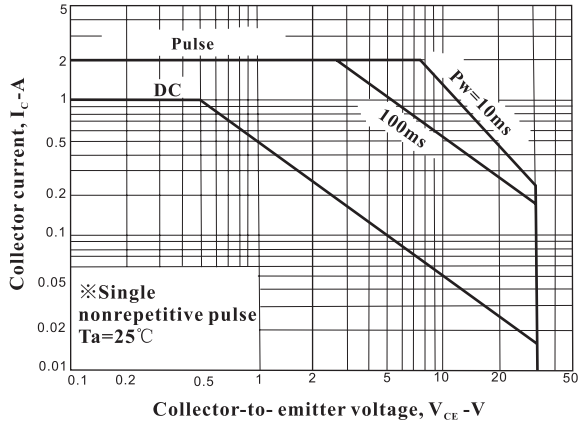

$V_{CE}$=5V
Ta=25℃
Transition frequency $f_T$(MHZ)
200
100
50
20
-1
-2
-5
-10
-20
-50
-100
Emitter Current $I_E$ (mA)


$I_E$=0
f=1MHz
Ta=25℃
Collector output capacitanceCob (pF)
100
50
20
10
5
0.5
1
2
5
10
20
Collector to base voltage, $V_{CB}$-V


Pulse
DC
Pw=10ms
100ms
※Single
nonrepetitive pulse
Ta=25℃
Collector current, $I_C$-A
5
2
1
0.5
0.2
0.1
0.05
0.02
0.01
0.1
0.2
0.5
1
2
5
10
20
50
Collector-to- emitter voltage, $V_{CE}$ -V