KODENSHI AUK

# STA3350D

**PNP Silicon Transistor**

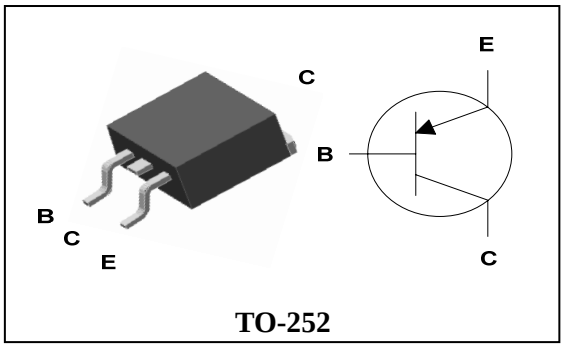
## Applications

- Power amplifier application
- High current switching application

## Features

- Low saturation voltage:
  $V_{CE(sat)}$=-0.15V Typ. @ $I_C$=-1A, $I_B$=-50mA
- Large collector current capacity: $I_C$=-3A
- "Green" device and RoHS compliant device
- Available in full lead (Pb)-free device

## PIN Connection




TO-252

## Ordering Information

| Type NO. | Marking | Package Code |
|---|---|---|
| STA3350D | STA3350 | TO-252 |

## Marking Information


Column 1, 2 : Device Code

Column 3: Year & Week Code

## Absolute Maximum Ratings

[Ta=25℃]

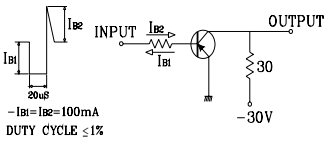
| Characteristic | Symbol | Rating | Unit |
|---|---|---|---|
| Collector-base voltage | $V_{CBO}$ | -50 | V |
| Collector-emitter voltage | $V_{CEO}$ | -50 | V |
| Emitter-base voltage | $V_{EBO}$ | -6 | V |
| Collector current | $I_C$ | -3 | A(DC) |
| | $I_{CP}$* | -6 | A(Pulse) |
| Collector Power dissipation | $P_C$(Ta= 25°C) | 1.2 | W |
| | $P_C$($T_C$= 25°C) | 15 | W |
| Junction temperature | $T_J$ | 150 | °C |
| Storage temperature range | $T_{stg}$ | -55~150 | °C |

* : Single pulse, tp= 300 μs

| Characteristic | | Symbol | Typ. | Max | Unit |
|---|---|---|---|---|---|
| Thermal resistance | Junction-ambient | $R_{th(J-A)}$ | - | 104.1 | ℃/W |
| | Junction-case | $R_{th(J-C)}$ | - | 8.3 | ℃/W |

## Electrical Characteristics

[Ta=25℃]

| Characteristic | | Symbol | Test Condition | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|---|
| Collector-emitter breakdown voltage | | $BV_{CEO}$ | $I_C$=-1mA, $I_B$=0 | -50 | - | - | V |
| Collector cut-off current | | $I_{CBO}$ | $V_{CB}$=-50V, $I_E$=0 | - | - | -1 | μA |
| Emitter cut-off current | | $I_{EBO}$ | $V_{EB}$=-6V, $I_C$=0 | - | - | -1 | μA |
| DC current gain | | $h_{FE}$ | $V_{CE}$=-2V, $I_C$=-0.5A* | 120 | - | 240 | |
| | | $h_{FE}$ | $V_{CE}$=-2V, $I_C$=-2A* | 40 | - | - | |
| Collector-emitter saturation voltage | | $V_{CE(sat)}$ | $I_C$=-1A, $I_B$=-0.05A* | - | - | -0.35 | V |
| Base-emitter saturation voltage | | $V_{BE(sat)}$ | $I_C$=-2A, $I_B$=-0.1A* | - | -0.97 | -1.2 | V |
| Transition frequency | | $f_T$ | $V_{CE}$=-10V, $I_C$=-0.05A | - | 250 | - | MHz |
| Collector output capacitance | | $C_{ob}$ | $V_{CB}$=-10V, $I_E$=0, f=1MHz | - | 28 | - | pF |
| Switching Time | Turn-on Time | $t_{on}$ |  | - | 100 | - | ns |
| | Storage Time | $t_{stg}$ | | - | 300 | - | |
| | Fall Time | $t_f$ | | - | 50 | - | |

*: Pulse test : $t_P$≤300μs, Duty cycle≤2%

**Fig. 1 $P_C$ - $T_a$**

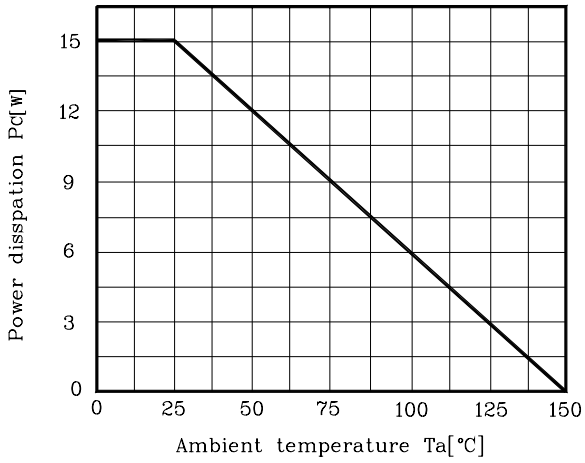



**Fig. 2 $I_C$ - $V_{BE}$**

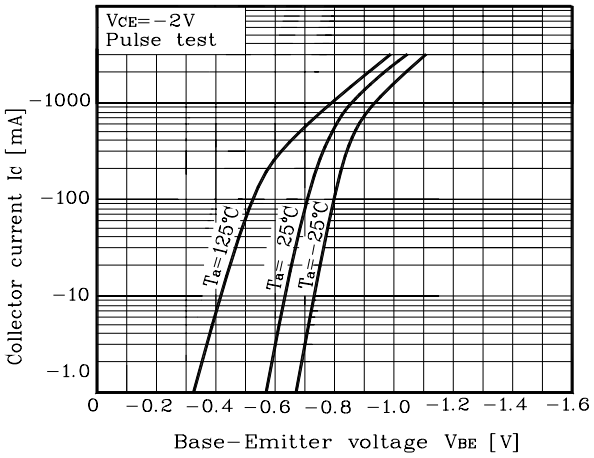



**Fig. 3 $I_C$ - $V_{CE}$**

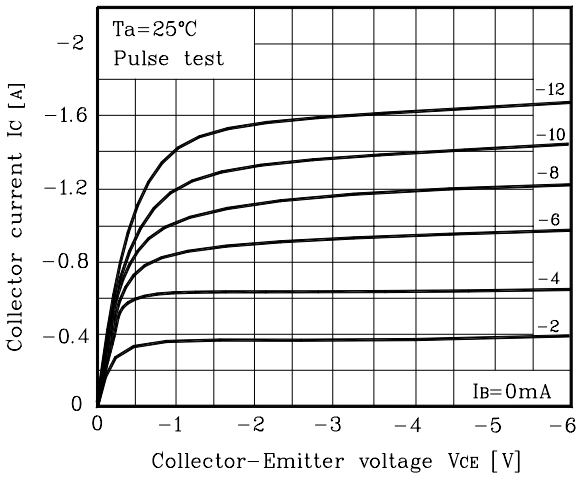



**Fig. 4 $h_{FE}$ - $I_C$**

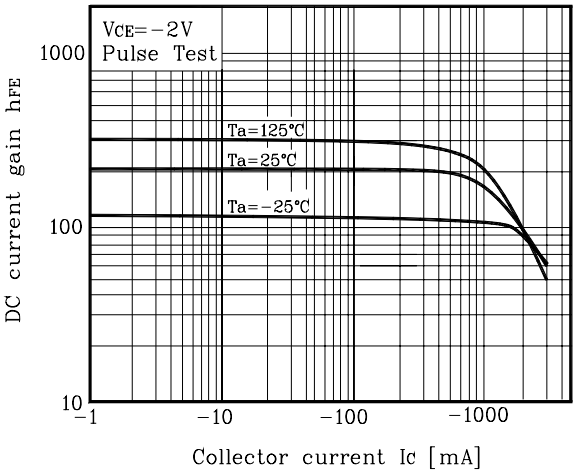



**Fig. 5 $V_{CE(sat)}$ - $I_C$**

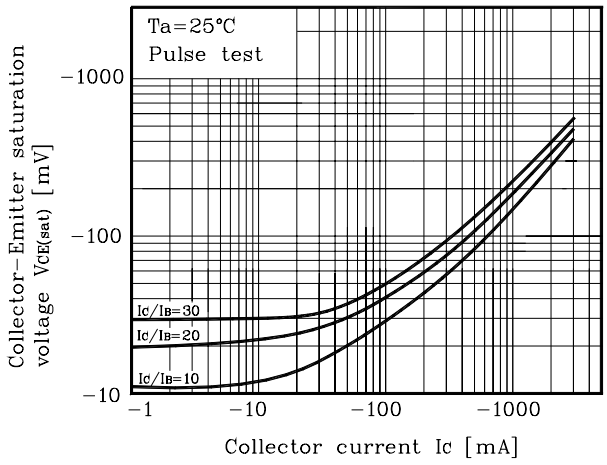
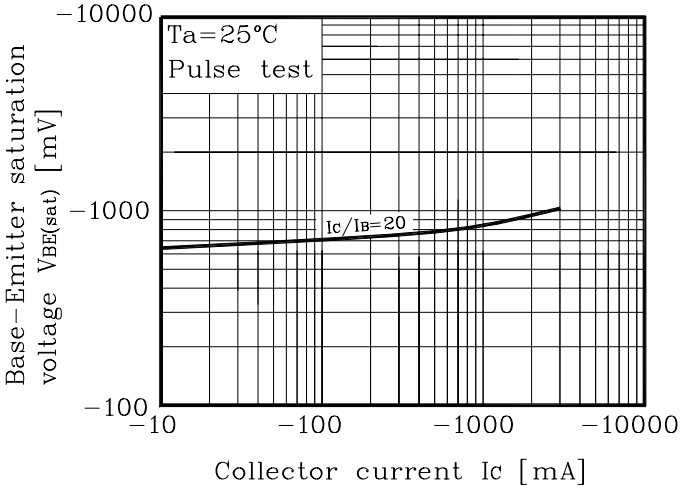



**Fig. 6 $V_{BE(sat)}$ - $I_C$**



## Electrical Characteristic Curves

**Fig. 7 $C_{Ob}$ - $V_{CB}$**

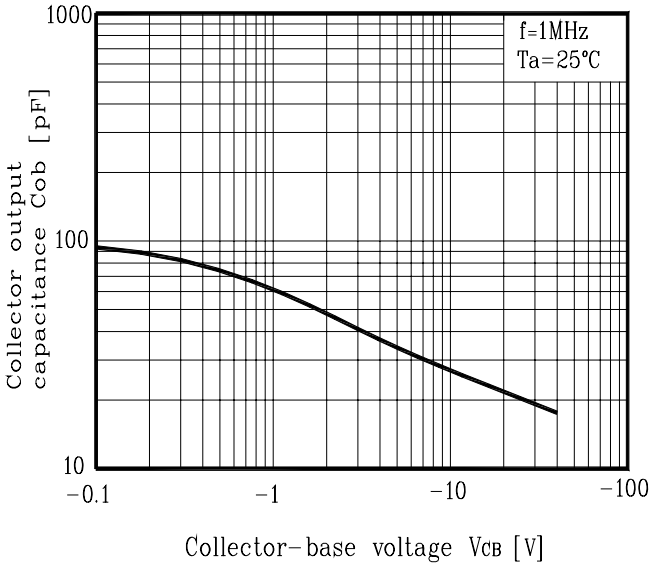
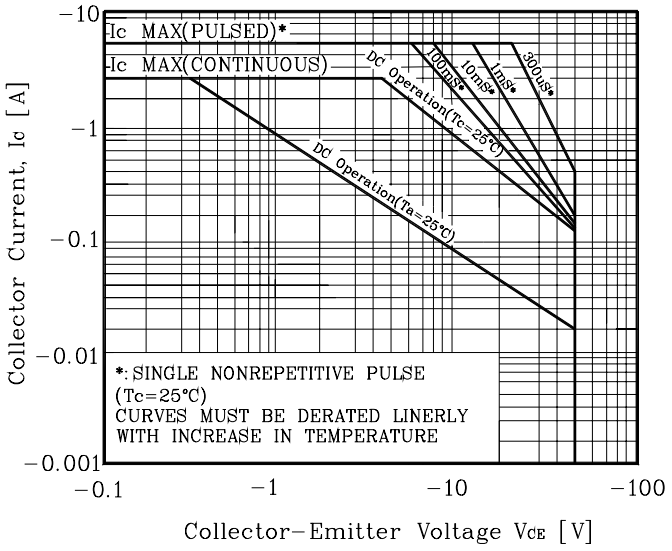
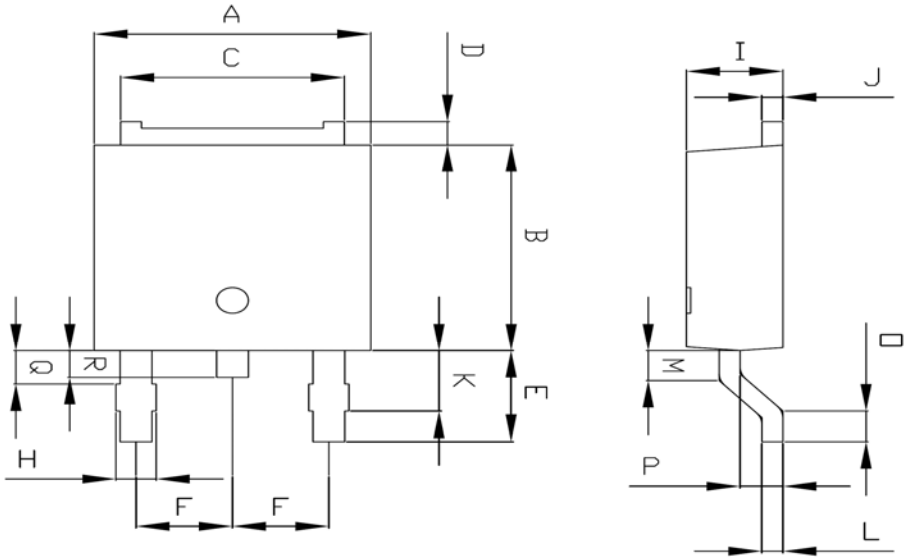



**Fig. 8 Safe Operating Area**

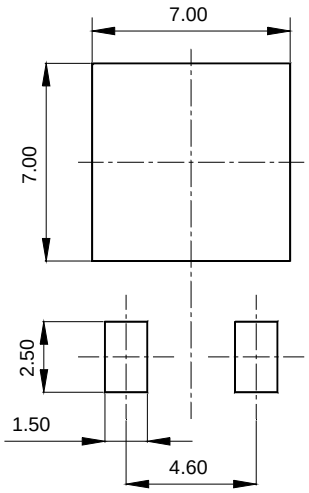


## Outline Dimension




| SYMBOL | MILLIMETERS | | | NOTE |
|---|---|---|---|---|
| | MINIMUM | NOMINAL | MAXIMUM | |
| A | 6.40 | 6.60 | 6.80 | |
| B | 5.90 | 6.10 | 6.30 | |
| C | 5.04 | 5.34 | 5.64 | |
| D | 0.50 | 0.70 | 0.90 | |
| E | 2.50 | 2.70 | 2.90 | |
| F | 2.10 | 2.30 | 2.50 | |
| H | | 0.96 MAX | | |
| I | 2.20 | 2.30 | 2.40 | |
| J | 0.40 | 0.50 | 0.60 | |
| K | 1.60 | 1.80 | 2.00 | |
| L | 0.40 | 0.50 | 0.60 | |
| M | 0.81 | 0.91 | 1.01 | |
| O | 0.80 | 0.90 | 1.00 | |
| P | 0.90 | 1.00 | 1.10 | |
| Q | | 0.95 MAX | | |
| R | 0.60 | 0.80 | 1.00 | |

**※Recommend PCB solder land [Unit: mm]**



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