KODENSHI AUK

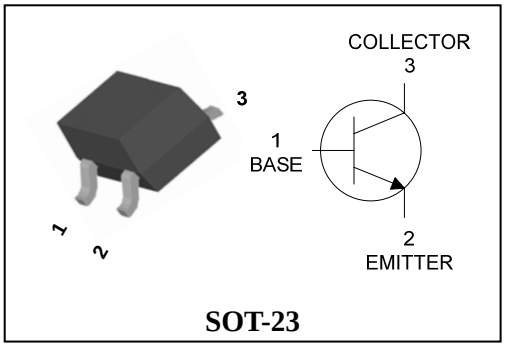
# STD123AS

**NPN Silicon Transistor**

## Features

- High β & low saturation transistor.
- $h_{FE}$= 400 Min. @$V_{CE}$= 1V, Ic= 100mA
- Suitable for large current drive directly.
- Application for IRED Drive transistor in remote transmitter.

## PIN Connection




## Ordering Information

| Type NO. | Marking | Package Code |
|---|---|---|
| STD123AS | 12A □ (① ②) | SOT-23 |

①Device Code ②Year&Week Code

## Absolute maximum ratings (Ta=25°C)

| Characteristic | Symbol | Ratings | Unit |
|---|---|---|---|
| Collector-Base voltage | $V_{CBO}$ | 10 | V |
| Collector-Emitter voltage | $V_{CEO}$ | 6 | V |
| Emitter-Base voltage | $V_{EBO}$ | 3 | V |
| Collector current | $I_C$ | 1 | A |
| Collector power dissipation | $^*P_C$ | 350 | mW |
| Junction temperature | $T_j$ | 150 | °C |
| Storage temperature | $T_{stg}$ | -55~150 | °C |

* : Package mounted on 99.5% alumina 10×8×0.1mm

## Electrical Characteristics (Ta=25°C)

| Characteristic | Symbol | Test Condition | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Collector-Base breakdown voltage | $BV_{CBO}$ | $I_C$= 50μA, $I_E$= 0 | 10 | - | - | V |
| Collector-Emitter breakdown voltage | $BV_{CEO}$ | $I_C$= 1mA, $I_B$= 0 | 6 | - | - | V |
| Emitter-Base breakdown voltage | $BV_{EBO}$ | $I_E$= 50μA, $I_C$= 0 | 3 | - | - | V |
| Collector cut-off current | $I_{CBO}$ | $V_{CB}$= 10V, $I_E$= 0 | - | - | 0.1 | μA |
| Emitter cut-off current | $I_{EBO}$ | $V_{EB}$= 3V, $I_C$= 0 | - | - | 0.1 | μA |
| DC current gain | $h_{FE}$ | $V_{CE}$= 1V, $I_C$= 100mA | 400 | - | - | - |
| Collector-Emitter saturation voltage | $V_{CE(sat)}$ | $I_C$= 500mA, $I_B$= 50mA | - | 0.1 | 0.3 | V |
| Transition frequency | $f_T$ | $V_{CE}$= 5V, $I_C$= 50mA | - | 260 | - | MHz |
| Collector output capacitance | $C_{ob}$ | $V_{CB}$= 10V, $I_E$= 0, f= 1MHz | - | 5 | - | pF |
| On resistance | $R_{ON}$ | f= 1KHz, $I_B$= 1mA, $V_{IN}$= 0.3V | - | 0.6 | - | Ω |

## Electrical Characteristic Curves

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

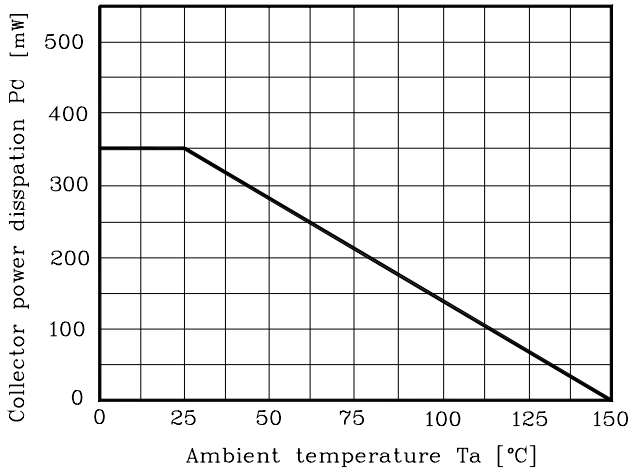



**Fig. 2 $V_{CE(sat)}$ - $I_C$**

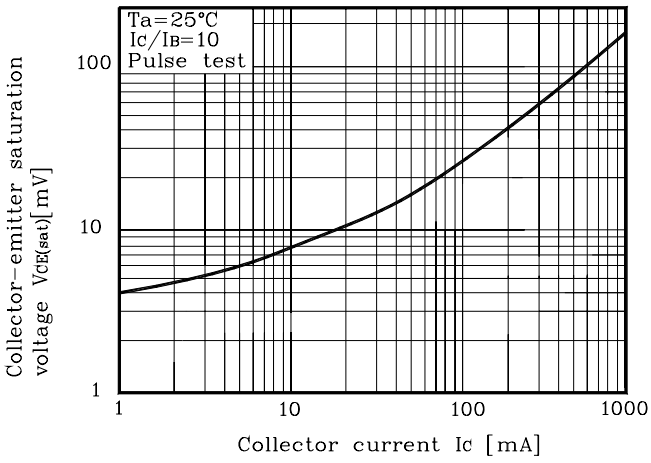



**Fig. 3 $C_{Ob}$ - $V_{CB}$**

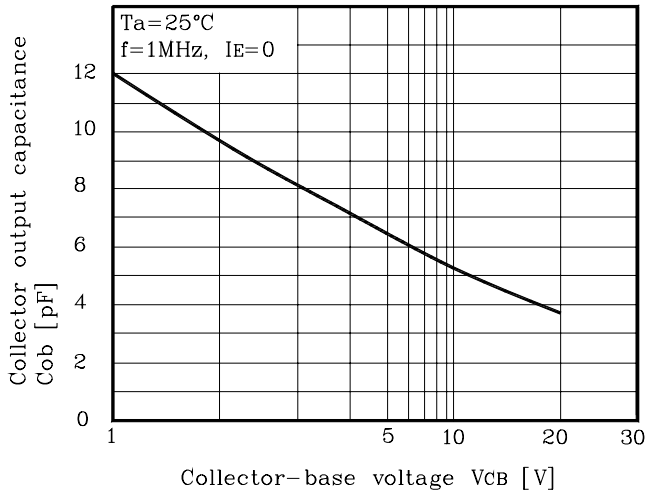



**Fig. 4$h_{FE}$ - $I_C$**

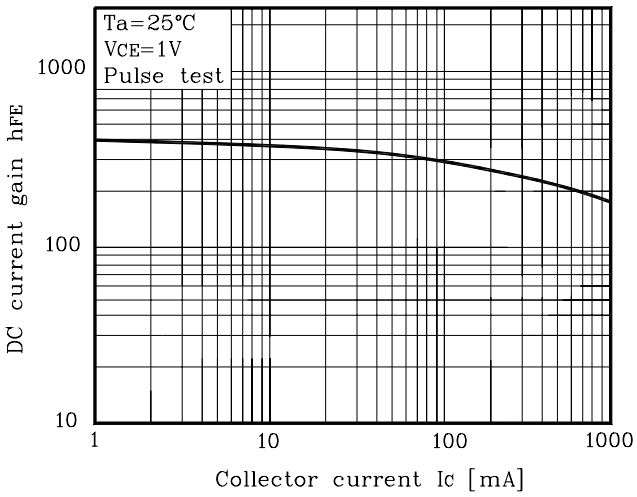
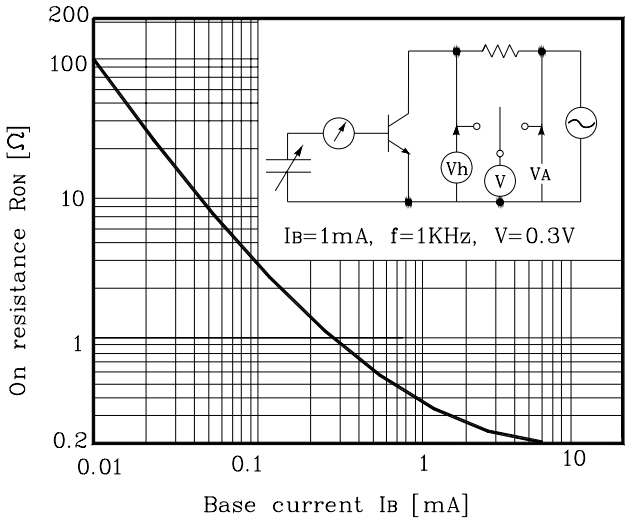
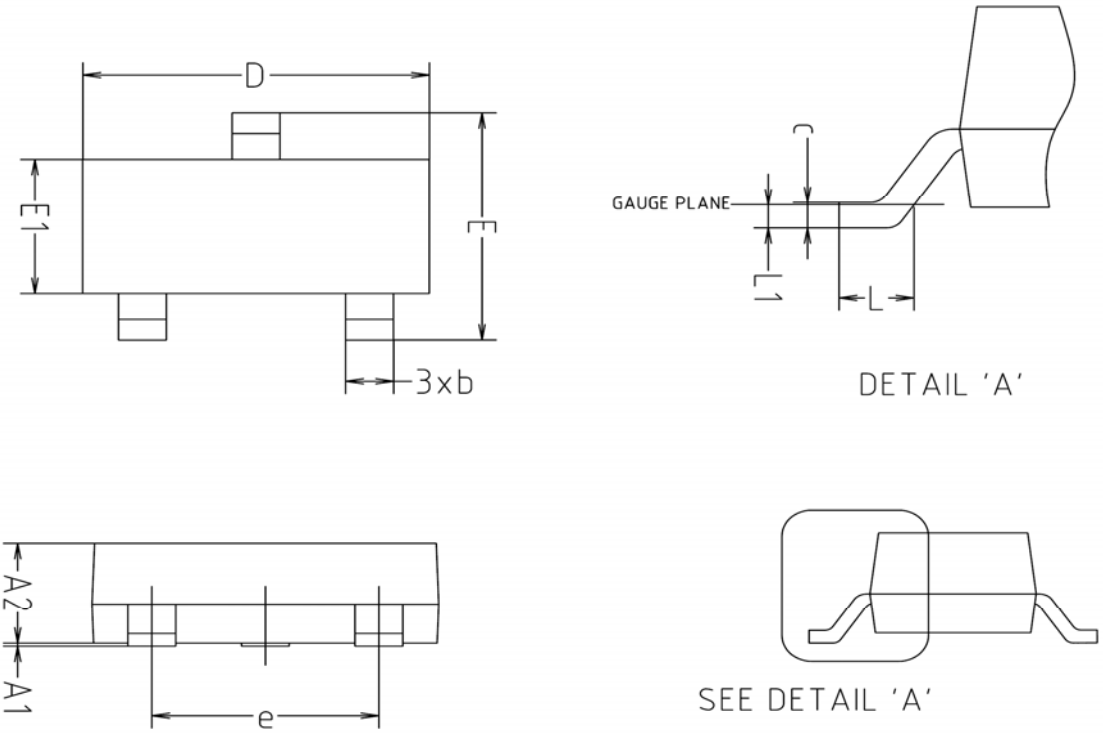



**Fig. 5 $R_{ON}$ - $I_B$**

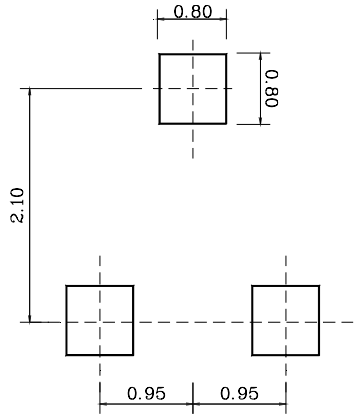


## Outline Dimension




| SYMBOL | MILLIMETERS | | | NOTE |
|---|---|---|---|---|
| | MINIMUM | NOMINAL | MAXIMUM | |
| A1 | 0.00 | - | 0.10 | |
| A2 | 0.82 | - | 1.02 | |
| b | 0.39 | 0.42 | 0.45 | |
| c | 0.09 | 0.12 | 0.15 | |
| D | 2.80 | 2.90 | 3.00 | |
| E | 2.20 | 2.40 | 2.60 | |
| E1 | 1.20 | 1.30 | 1.40 | |
| e | 1.90BSC | | | |
| L | 0.20 | - | - | |
| L1 | 0.12BSC | | | |

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



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