AUK Semiconductor

# DN200F

NPN Silicon Transistor

## Features

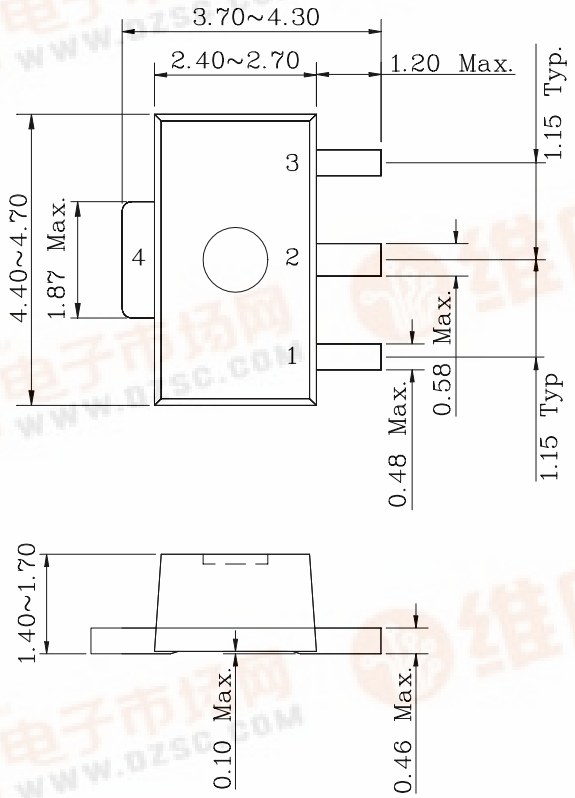
- Extremely low collector-to-emitter saturation voltage
  ( $V_{CE(SAT)}$= 0.2V Typ. @$I_C/I_B$=1A/50 mA)
- Suitable for low voltage large current drivers
- Complementary pair with DP200F
- Switching Application

## Ordering Information

| Type NO. | Marking | Package Code |
|---|---|---|
| DN200F | N04 | SOT-89 |

## Outline Dimensions

unit : mm




**PIN Connections**
1. Base
2. Collector
3. Emitter

## Absolute maximum ratings

(Ta=25°C)

| Characteristic | Symbol | Ratings | Unit |
|---|---|---|---|
| Collector-Base voltage | $V_{CBO}$ | 15 | V |
| Collector-Emitter voltage | $V_{CEO}$ | 12 | V |
| Emitter-Base voltage | $V_{EBO}$ | 5 | V |
| Collector current | $I_C$ | 2 | A |
| Collector power dissipation | $P_C$ | 0.5 | W |
| | $P_C^*$ | 2 | |
| Junction temperature | $T_J$ | 150 | °C |
| Storage temperature | $T_{stg}$ | -55~150 | °C |

* : When mounted on 40×40×0.8mm ceramic substate

## Electrical Characteristics

(Ta=25°C)

| Characteristic | Symbol | Test Condition | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Collector-Base breakdown voltage | $BV_{CBO}$ | $I_C$=50 ㎂, $I_E$=0 | 15 | - | - | V |
| Collector-Emitter breakdown voltage | $BV_{CEO}$ | $I_C$=1 ㎃, $I_B$=0 | 12 | - | - | V |
| Emitter-Base breakdown voltage | $BV_{EBO}$ | $I_E$=50 ㎂, $I_C$=0 | 5 | - | - | V |
| Collector cut-off current | $I_{CBO}$ | $V_{CB}$=12V, $I_E$=0 | - | - | 0.1 | ㎂ |
| Emitter cut-off current | $I_{EBO}$ | $V_{EB}$=5V, $I_C$=0 | - | - | 0.1 | ㎂ |
| DC current gain | $h_{FE1}$ | $V_{CE}$=1V, $I_C$=100 ㎃ | 200 | - | 450 | - |
| | $h_{FE2}$ | $V_{CE}$=1V, $I_C$=2A | 40 | - | - | - |
| Collector-Emitter saturation voltage | $V_{CE(sat)}$ | $I_C$=1A, $I_B$=50 ㎃ | - | - | 0.3 | V |
| Base-Emitter saturation voltage | $V_{BE(sat)}$ | $I_C$=1A, $I_B$=50 ㎃ | - | - | 1.2 | V |
| Transition frequency | $f_T$ | $V_{CE}$=5V, $I_C$=50 ㎃ | - | 260 | - | ㎒ |
| Collector output capacitance | $C_{ob}$ | $V_{CB}$=10V, $I_E$=0, f=1 ㎒ | - | 5 | - | pF |

## Electrical Characteristic Curves

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

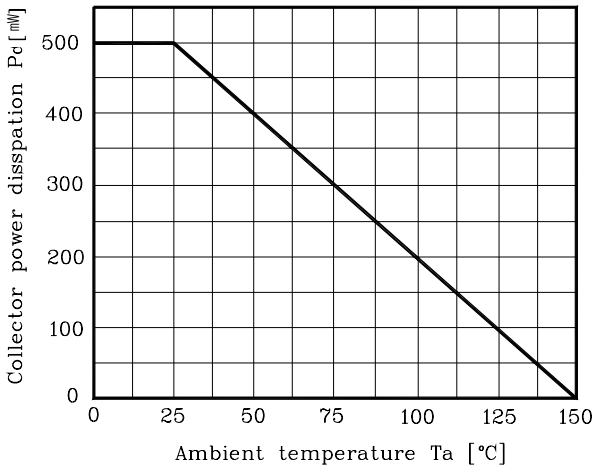



**Fig. 2 $I_C$ - $V_{BE}$**

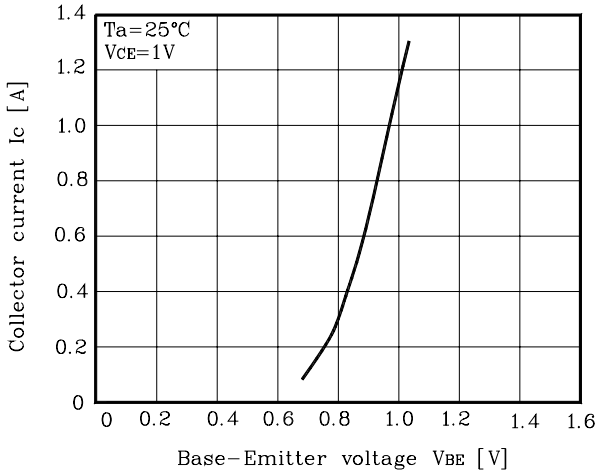



**Fig. 3 $h_{FE}$-$I_C$**

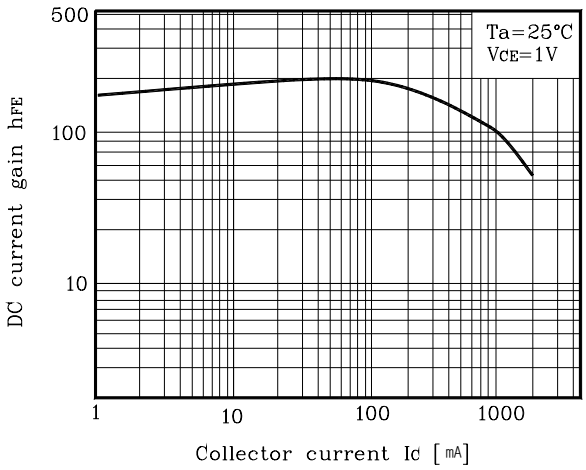
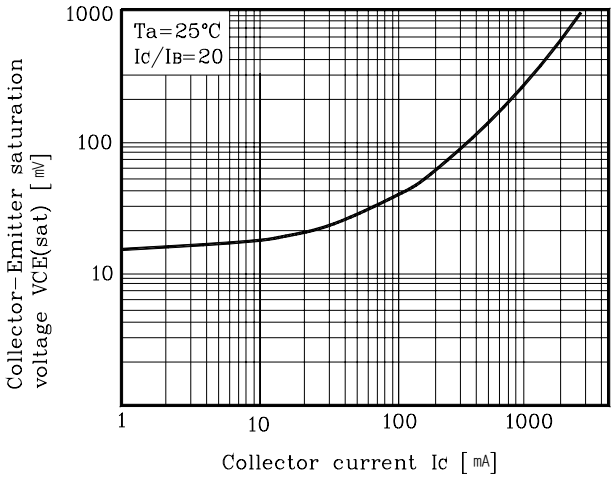



**Fig. 4 $V_{CE(sat)}$-$I_C$**



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