

# 2SB0940, 2SB0940A (2SB940, 2SB940A)

Silicon PNP epitaxial planar type

For power amplification

For TV vertical deflection output

Complementary to 2SD1264 and 2SD1264A

## ■ Features

- High collector to emitter voltage  $V_{CEO}$
- Large collector power dissipation  $P_C$
- Full-pack package which can be installed to the heat sink with one screw

## ■ Absolute Maximum Ratings $T_C = 25^\circ\text{C}$

| Parameter                    | Symbol    | Rating                   | Unit             |   |
|------------------------------|-----------|--------------------------|------------------|---|
| Collector to base voltage    | 2SB0940   | -200                     | V                |   |
|                              | 2SB0940A  |                          |                  |   |
| Collector to emitter voltage | 2SB0940   | -150                     | V                |   |
|                              | 2SB0940A  | -180                     |                  |   |
| Emitter to base voltage      | $V_{EBO}$ | -6                       | V                |   |
| Peak collector current       | $I_{CP}$  | -3                       | A                |   |
| Collector current            | $I_C$     | -2                       | A                |   |
| Collector power dissipation  | $P_C$     | $T_C = 25^\circ\text{C}$ | 30               | W |
|                              |           | $T_a = 25^\circ\text{C}$ | 2                |   |
| Junction temperature         | $T_j$     | 150                      | $^\circ\text{C}$ |   |
| Storage temperature          | $T_{stg}$ | -55 to +150              | $^\circ\text{C}$ |   |

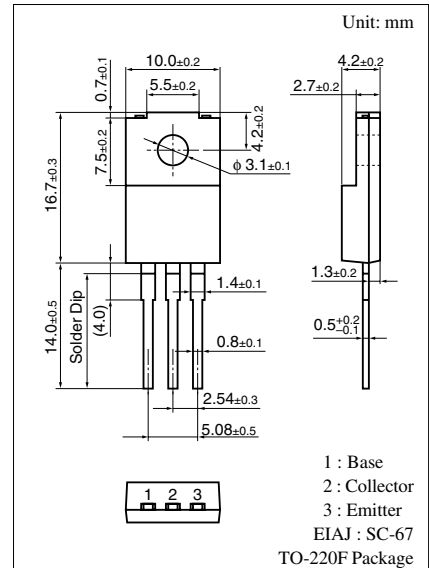
## ■ Electrical Characteristics $T_C = 25^\circ\text{C}$

| Parameter                               | Symbol        | Conditions  | Min      | Typ  | Max | Unit          |
|---|---------------|---|----------|------|-----|---------------|
| Collector cutoff current                | $I_{CBO}$     | $V_{CB} = -200\text{ V}, I_E = 0$                               |          |      | -50 | $\mu\text{A}$ |
| Emitter cutoff current                  | $I_{EBO}$     | $V_{EB} = -4\text{ V}, I_C = 0$                                 |          |      | -50 | $\mu\text{A}$ |
| Collector to base voltage               | $V_{CBO}$     | $I_C = -50\ \mu\text{A}, I_E = 0$                               | -200     |      |     | V             |
| Collector to emitter voltage            | $V_{CEO}$     | $I_C = -5\text{ mA}, I_B = 0$                                   | 2SB0940  | -150 |     | V             |
|   |               |   | 2SB0940A | -180 |     |               |
| Emitter to base voltage                 | $V_{EBO}$     | $I_E = -500\ \mu\text{A}, I_C = 0$                              | -6       |      |     | V             |
| Forward current transfer ratio          | $h_{FE1}^*$   | $V_{CE} = -10\text{ V}, I_C = -150\text{ mA}$                   | 60       |      | 240 |               |
|   | $h_{FE2}$     | $V_{CE} = -10\text{ V}, I_C = -400\text{ mA}$                   | 50       |      |     |               |
| Base to emitter voltage                 | $V_{BE}$      | $V_{CE} = -10\text{ V}, I_C = -400\text{ mA}$                   |          |      | -1  | V             |
| Collector to emitter saturation voltage | $V_{CE(sat)}$ | $I_C = -500\text{ mA}, I_B = -50\text{ mA}$                     |          |      | -1  | V             |
| Transition frequency                    | $f_T$         | $V_{CE} = -10\text{ V}, I_C = -0.5\text{ A}, f = 10\text{ MHz}$ |          | 30   |     | MHz           |

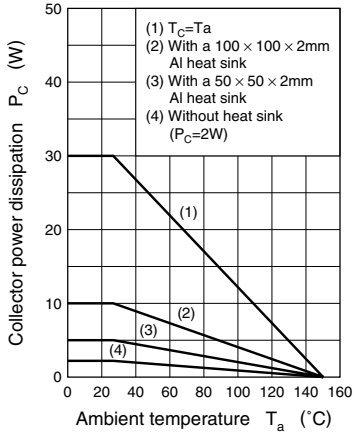
Note) \*: Rank classification

| Rank      | Q         | P          |
|-----------|-----------|------------|
| $h_{FE1}$ | 60 to 140 | 100 to 240 |

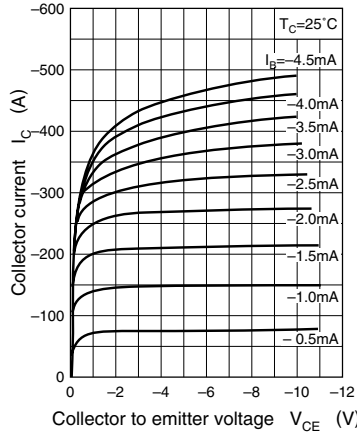
Note.) The Part numbers in the Parenthesis show conventional part number.



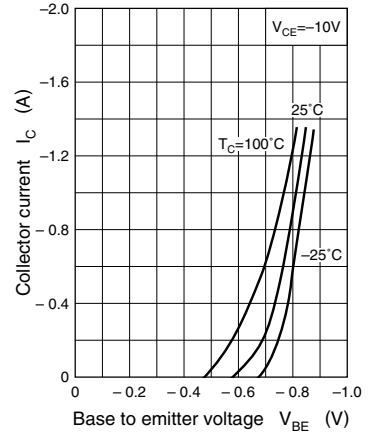
$P_C - T_a$



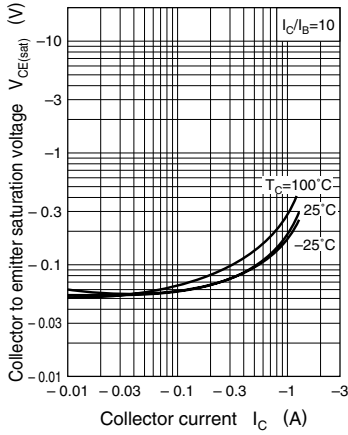
$I_C - V_{CE}$



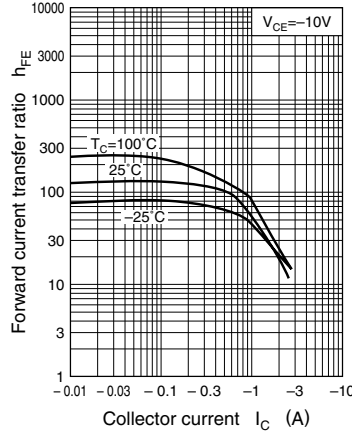
$I_C - V_{BE}$



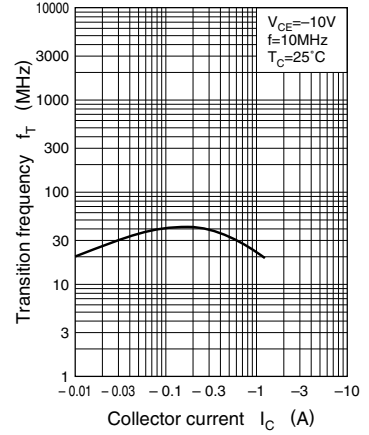
$V_{CE(sat)} - I_C$



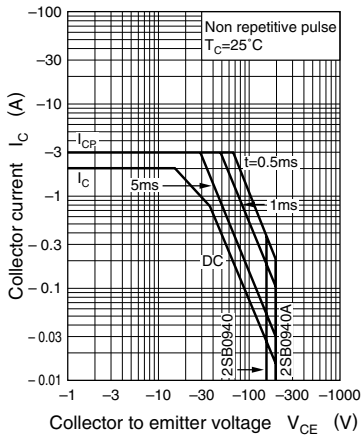
$h_{FE} - I_C$



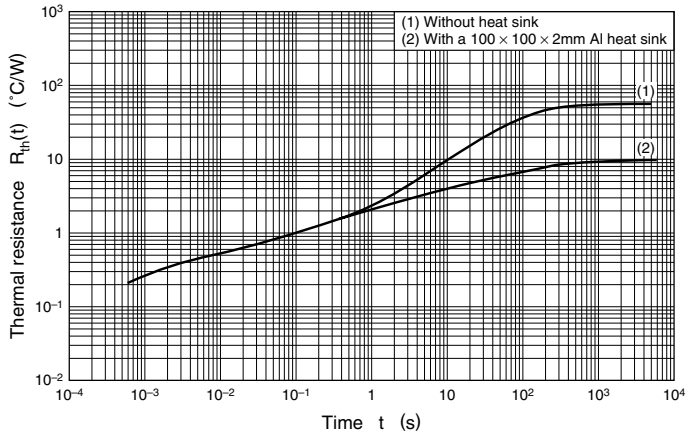
$f_T - I_C$



Area of safe operation (ASO)



$R_{th(t)} - t$



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