

## Epitaxial Planar PNP Transistor

**2SA940**

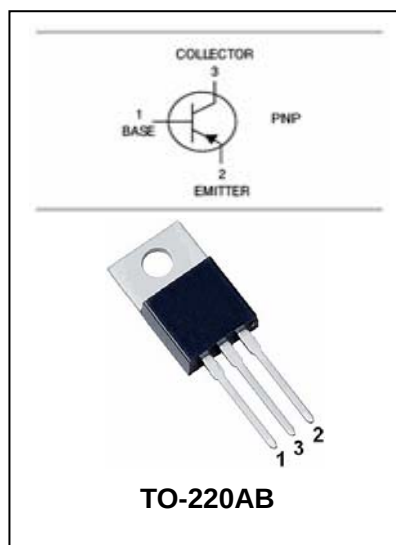
### FEATURES

- Complements the 2SC2073.



### APPLICATIONS

- Power Amplifier Applications.
- Vertical Output Applications.



### MAXIMUM RATING

operating temperature range applies unless otherwise specified

| Symbol         | Parameter                                                                 | Value       | Unit             |
|----------------|---------------------------------------------------------------------------|-------------|------------------|
| $V_{CBO}$      | Collector-Base Voltage                                                    | -150        | V                |
| $V_{CEO}$      | Collector-Emitter Voltage                                                 | -150        | V                |
| $V_{EBO}$      | Emitter-Base Voltage                                                      | -5          | V                |
| $I_C$          | Collector Current                                                         | -1.5        | A                |
| $I_B$          | Base Current                                                              | -0.5        | A                |
| $P_C$          | Collector Dissipation<br>$T_a=25^\circ\text{C}$<br>$T_c=25^\circ\text{C}$ | 1.5<br>25   | W                |
| $T_j, T_{stg}$ | Junction and Storage Temperature                                          | -55 to +150 | $^\circ\text{C}$ |



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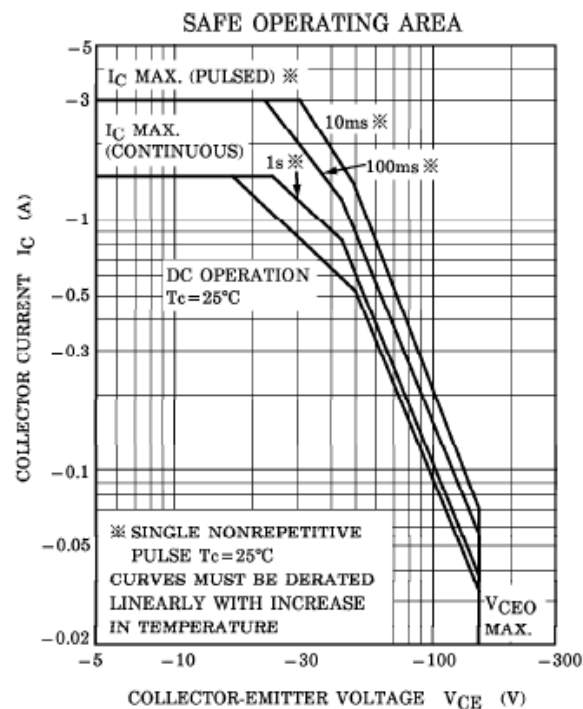
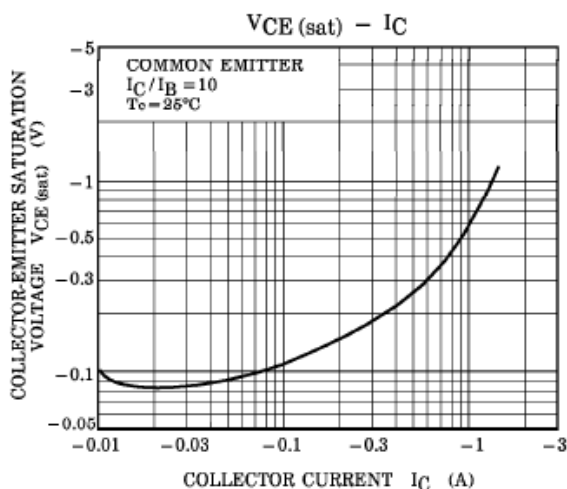
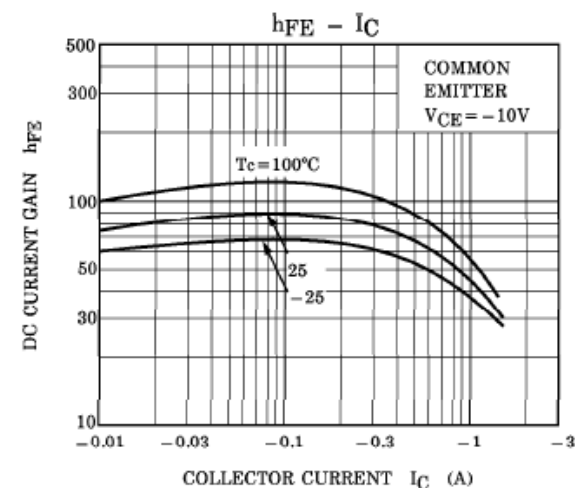
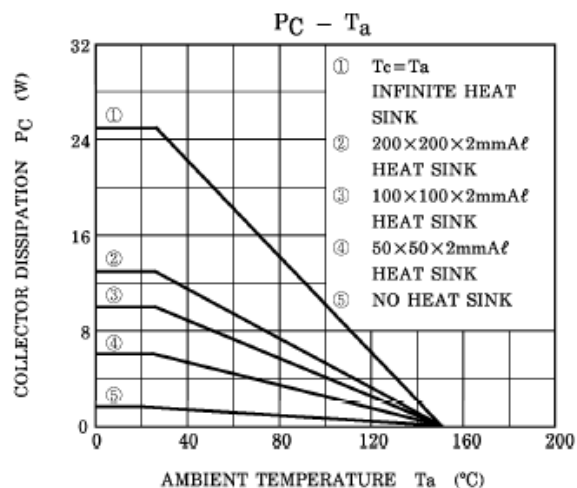
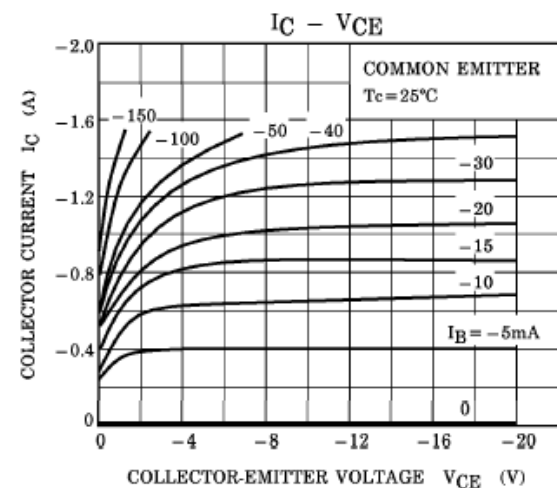
### ELECTRICAL CHARACTERISTICS Ratings at 25°C ambient temperature unless otherwise specified.

| Parameter                            | Symbol        | Test conditions                    | MIN   | TYP   | MAX   | UNIT    |
|--------------------------------------|---------------|------------------------------------|-------|-------|-------|---------|
| Collector-base Breakdown Voltage     | $V_{(BR)CBO}$ | $I_C = -100\mu A, I_E = 0$         | -150  |       |       | V       |
| Collector-emitter Breakdown Voltage  | $V_{(BR)CEO}$ | $I_C = -1mA, I_B = 0$              | -150  |       |       | V       |
| Emitter-base Breakdown Voltage       | $V_{(BR)EBO}$ | $I_E = -100\mu A, I_C = 0$         | -5    |       |       | V       |
| Collector Cut-off Current            | $I_{CBO}$     | $V_{CB} = -120V, I_E = 0$          |       |       | -10   | $\mu A$ |
| Emitter Cut-off Current              | $I_{EBO}$     | $V_{EB} = -5V, I_C = 0$            |       |       | -10   | $\mu A$ |
| DC Current Gain                      | $h_{FE}$      | $V_{CE} = -10V, I_C = -500mA$      | 40    |       | 140   |         |
| Collector-emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = -500mA, I_B = -50mA$        |       |       | -1.5  | V       |
| Base-emitter Voltage                 | $V_{BE(on)}$  | $V_{CE} = -10V, I_B = -500mA$      | -0.65 | -0.75 | -0.85 | V       |
| Transition Frequency                 | $f_T$         | $V_{CE} = -10V, I_C = -0.5A$       |       | 4     |       | MHz     |
| Collector Output Capacitance         | $C_{ob}$      | $V_{CB} = -10V, I_E = 0, f = 1MHz$ |       | 55    |       | pF      |

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TYPICAL CHARACTERISTICS @  $T_a=25^\circ\text{C}$  unless otherwise specified





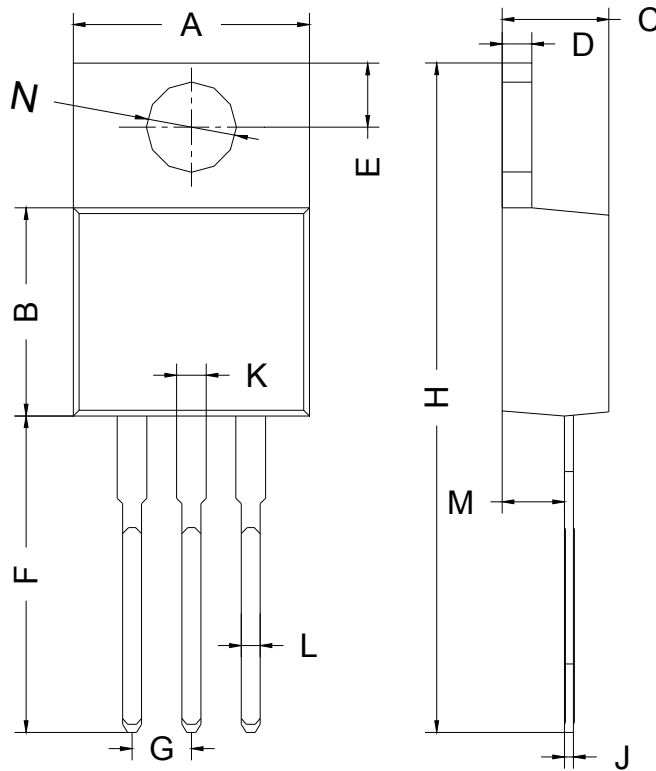
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### PACKAGE OUTLINE

Plastic surface mounted package

TO-220AB



| TO-220AB             |              |       |
|----------------------|--------------|-------|
| Dim                  | Min          | Max   |
| A                    | 9.80         | 10.30 |
| B                    | 8.70         | 9.10  |
| C                    | 4.57 Typical |       |
| D                    | 1.27 Typical |       |
| E                    | 2.64         | 2.84  |
| F                    | 13.14        | 13.74 |
| G                    | 2.44         | 2.64  |
| H                    | 28.03        | 28.83 |
| J                    | 0.38 Typical |       |
| K                    | 1.22         | 1.32  |
| L                    | 0.71         | 0.91  |
| M                    | 2.50 Typical |       |
| N                    | 3.86 Typical |       |
| All Dimensions in mm |              |       |