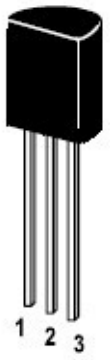
# 2SA933 PNP Silicon Epitaxial Planar Transistor

for switching and AF amplifier applications.

The transistor is subdivided into three groups, O, Y and S, according to its DC current gain. As complementary type the NPN transistor 2SC945 is recommended.

On special request, these transistors can be manufactured in different pin configurations.




1. Emitter 2. Collector 3. Base
TO-92 Plastic Package
Weight approx. 0.19g

## Absolute Maximum Ratings ($T_a$ = 25℃)

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Collector Base Voltage | $-V_{CBO}$ | 50 | V |
| Collector Emitter Voltage | $-V_{CEO}$ | 40 | V |
| Emitter Base Voltage | $-V_{EBO}$ | 5 | V |
| Collector Current | $-I_C$ | 100 | mA |
| Power Dissipation | $P_{tot}$ | 300 | mW |
| Junction Temperature | $T_j$ | 125 | $^{O}$C |
| Storage Temperature Range | $T_S$ | -65 to +150 | $^{O}$C |

## Characteristics at $T_{amb}$=25 °C

| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|
| DC Current Gain | | | | | |
| at $-V_{CE}$=6V, $-I_C$=1mA | | | | | |
| Current Gain Group O | $h_{FE}$ | 120 | - | 270 | - |
| Y | $h_{FE}$ | 180 | - | 390 | - |
| S | $h_{FE}$ | 270 | - | 560 | - |
| Collector Base Breakdown Voltage | | | | | |
| at $-I_C$=50μA | $-V_{(BR)CBO}$ | 50 | - | - | V |
| Collector Emitter Breakdown Voltage | | | | | |
| at $-I_C$=1mA | $-V_{(BR)CEO}$ | 40 | - | - | V |
| Emitter Base Breakdown Voltage | | | | | |
| at $-I_E$=50μA | $-V_{(BR)EBO}$ | 5 | - | - | V |
| Collector Cutoff Current | | | | | |
| at $-V_{CB}$=30V | $-I_{CBO}$ | - | - | 0.5 | μA |
| Emitter Cutoff Current | | | | | |
| at $-V_{EB}$=4V | $-I_{EBO}$ | - | - | 0.5 | μA |
| Collector Saturation Voltage | | | | | |
| at $-I_C$=50mA, $-I_B$=5mA | $-V_{CE(sat)}$ | - | 0.1 | 0.5 | V |
| Gain Bandwidth Product | | | | | |
| at $-V_{CE}$=12V, $-I_C$=2mA | $f_T$ | - | 140 | - | MHz |
| Output Capacitance | | | | | |
| at $-V_{CB}$=12V, f=1MHz | $C_{OB}$ | - | 4 | 5 | pF |