

2SA1016 PNP Silicon Epitaxial Planar Transistor

High -Voltage Low-Noise Amp applications

The transistor is subdivided into three groups F, G and H, according to its DC current gain.



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

Absolute Maximum Ratings ($T_a = 25^{\circ}\text{C}$)

| Parameter | Symbol | Value | Unit |
|---------------------------|-------------------|-------------|--------------------|
| Collector Base Voltage | $-V_{\text{CBO}}$ | 120 | V |
| Collector Emitter Voltage | $-V_{\text{CEO}}$ | 100 | V |
| Emitter Base Voltage | $-V_{\text{EBO}}$ | 5 | V |
| Collector Current | $-I_{\text{C}}$ | 50 | mA |
| Collector Current (Pulse) | $-I_{\text{CP}}$ | 100 | mA |
| Collector Dissipation | P_{tot} | 400 | mW |
| Junction Temperature | T_{j} | 125 | $^{\circ}\text{C}$ |
| Storage Temperature Range | T_{s} | -55 to +125 | $^{\circ}\text{C}$ |

Characteristics at $T_{amb}=25\text{ }^{\circ}\text{C}$

| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|---|----------------|------|------|------|---------------|
| DC Current Gain at $-V_{CE}=6\text{V}$, $-I_C=1\text{mA}$ | | | | | |
| Current Gain Group F | h_{FE} | 160 | - | 320 | - |
| G | h_{FE} | 280 | - | 560 | - |
| H | h_{FE} | 480 | - | 960 | - |
| Collector Base Breakdown Voltage at $-I_C=10\mu\text{A}$ | $-V_{(BR)CBO}$ | 120 | - | - | V |
| Collector Emitter Breakdown Voltage at $-I_C=1\text{mA}$ | $-V_{(BR)CEO}$ | 100 | - | - | V |
| Emitter Base Breakdown Voltage at $-I_E=10\mu\text{A}$ | $-V_{(BR)EBO}$ | 5 | - | - | V |
| Collector Cutoff Current at $-V_{CB}=80\text{V}$ | $-I_{CBO}$ | - | - | 1 | μA |
| Emitter Cutoff Current at $-V_{EB}=4\text{V}$ | $-I_{EBO}$ | - | - | 1 | μA |
| Collector Emitter Saturation Voltage at $-I_C=10\text{mA}$, $-I_B=1\text{mA}$ | $-V_{CE(sat)}$ | - | - | 0.5 | V |
| Gain Bandwidth Product at $-V_{CE}=6\text{V}$, $-I_C=1\text{mA}$ | f_T | - | 110 | - | MHz |
| Output Capacitance at $-V_{CB}=10\text{V}$, $f=1\text{MHz}$ | C_{OB} | - | 2.2 | - | pF |
| Noise Level at $V_{CC}=30\text{V}$, $I_C=1\text{mA}$ $R_g=56\text{K}\Omega$, $V_G=77\text{dB}/1\text{kHz}$ | $C_{NO(ave)}$ | - | - | 35 | mV |
| Noise Peak Level at $V_{CC}=30\text{V}$, $I_C=1\text{mA}$ $R_g=56\text{K}\Omega$, $V_G=77\text{dB}/1\text{kHz}$ | $C_{NO(peak)}$ | - | - | 200 | mV |