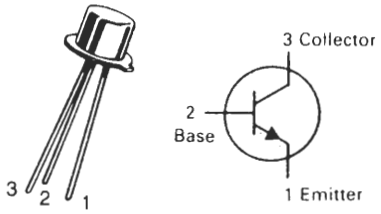
# 2N914

**JAN, JTX AVAILABLE**
**CASE 22-03, STYLE 1**
**TO-18 (TO-206AA)**




## SWITCHING TRANSISTOR

**NPN SILICON**

**Refer to 2N2368 for graphs.**

### MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|---|---|---|---|
| Collector-Emitter Voltage | $V_{CEO}$ | 15 | Vdc |
| Collector-Emitter Voltage ($R_{BE} \leq 10$ ohms) | $V_{CER}$ | 20 | Vdc |
| Collector-Base Voltage | $V_{CBO}$ | 40 | Vdc |
| Emitter-Base Voltage | $V_{EBO}$ | 5.0 | Vdc |
| Collector Current — Continuous(1) | $I_C$ | 150 | mAdc |
| Total Device Dissipation @ $T_A$ = 25°C<br>Derate above 25°C | $P_D$ | 360<br>2.06 | mW<br>mW/°C |
| Total Device Dissipation @ $T_C$ = 25°C<br>Derate above 25°C | $P_D$ | 1.2<br>6.8 | Watts<br>mW/°C |
| Total Device Dissipation @ $T_C$ = 100°C<br>Derate above 100°C | $P_D$ | 0.68 | Watt |
| Operating and Storage Junction Temperature Range | $T_J$, $T_{stg}$ | −65 to +200 | °C |

### ELECTRICAL CHARACTERISTICS ($T_A$ = 25°C unless otherwise noted.)

| Characteristic | Symbol | Min | Max | Unit |
|---|---|---|---|---|
| **OFF CHARACTERISTICS** | | | | |
| Collector-Emitter Breakdown Voltage(2) ($I_C$ = 30 mAdc, $R_{BE} \leq 10$ ohms) | $V_{CER(sus)}$ | 20 | — | Vdc |
| Collector-Emitter Sustaining Voltage(2) ($I_C$ = 30 mAdc, $I_B$ = 0) | $V_{CEO(sus)}$ | 15 | — | Vdc |
| Collector-Base Breakdown Voltage ($I_C$ = 1.0 μAdc, $I_E$ = 0) | $V_{(BR)CBO}$ | 40 | — | Vdc |
| Emitter-Base Breakdown Voltage ($I_E$ = 10 μAdc, $I_C$ = 0) | $V_{(BR)EBO}$ | 5.0 | — | Vdc |
| Collector Cutoff Current ($V_{CE}$ = 20 Vdc, $V_{BE}$ = 0.25 Vdc, $T_A$ = 125°C) | $I_{CEX}$ | — | 10 | μAdc |
| Collector Cutoff Current ($V_{CB}$ = 20 Vdc, $I_E$ = 0)<br>($V_{CB}$ = 20 Vdc, $I_E$ = 0, $T_A$ = 150°C) | $I_{CBO}$ | —<br>— | 0.025<br>15 | μAdc |
| Emitter Cutoff Current ($V_{BE}$ = 4.0 Vdc, $I_C$ = 0) | $I_{EBO}$ | — | 0.1 | μAdc |
| **ON CHARACTERISTICS** | | | | |
| DC Current Gain(2)<br>($I_C$ = 10 mAdc, $V_{CE}$ = 1.0 Vdc)<br>($I_C$ = 10 mAdc, $V_{CE}$ = 1.0 Vdc, $T_A$ = −55°C)<br>($I_C$ = 500 mAdc, $V_{CE}$ = 5.0 Vdc) | $h_{FE}$ | <br>30<br>12<br>10 | <br>120<br>—<br>— | — |
| Collector-Emitter Saturation Voltage(2)<br>($I_C$ = 200 mAdc, $I_B$ = 20 mAdc)<br>($I_C$ = 10 mAdc, $I_B$ = 1.0 thru 20 mAdc, $T_A$ = −55 to +125°C) | $V_{CE(sat)}$ | <br>—<br>— | <br>0.70<br>0.25 | Vdc |
| Base-Emitter Saturation Voltage ($I_C$ = 10 mAdc, $I_B$ = 1.0 mAdc) | $V_{BE(sat)}$ | 0.70 | 0.80 | Vdc |
| **SMALL-SIGNAL CHARACTERISTICS** | | | | |
| Current-Gain — Bandwidth Product ($I_C$ = 20 mAdc, $V_{CE}$ = 10 Vdc, f = 100 MHz) | $f_T$ | 300 | — | MHz |
| Output Capacitance ($V_{CB}$ = 10 Vdc, $I_E$ = 0, f = 1.0 MHz) | $C_{obo}$ | — | 6.0 | pF |
| Input Capacitance ($V_{BE}$ = 0.5 Vdc, $I_C$ = 0, f = 1.0 MHz) | $C_{ibo}$ | — | 9.0 | pF |
| **SWITCHING CHARACTERISTICS** | | | | |
| Storage Time(3) ($I_C$ = $I_{B1}$ = $I_{B2}$ = 20 mAdc) | $t_s$ | — | 20 | ns |
| Turn-On Time(3) ($I_C$ = 200 mAdc, $I_{B1}$ = 40 mAdc, $I_{B2}$ = 20 mAdc) | $t_{on}$ | — | 40 | ns |
| Turn-Off Time(3) ($I_C$ = 200 mAdc, $I_{B1}$ = 40 mAdc, $I_{B2}$ = 20 mAdc) | $t_{off}$ | — | 40 | ns |

(1) Limited by Power Dissipation.
(2) Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 1.0%.
(3) Measured on Sampling Scope: Pulse Width ≥ 200 ns.