## 2N2369A

## Electrical Parameters (T$_A$ @ 25°C unless otherwise specified)

| CHARACTERISTICS | SYMBOL | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|
| **Off Characteristics** | | | | | |
| Collector-Emitter Breakdown Voltage <br> ($I_C$ = 10 μA, $V_{BE}$ = 0) | BV$_{CES}$ | 40 | | -- | Vdc |
| Collector-Emitter Sustaining Voltage(1) <br> ($I_C$ = 10mAdc, $I_B$ = 0) | BV$_{CEO}$ | 15 | | -- | Vdc |
| Collecter-Base Breakdown Voltage <br> ($I_C$ = 10 μA, $I_B$ = 0) | BV$_{CBO}$ | 40 | | -- | Vdc |
| Emitter-Base Breakdown Voltage <br> ($I_C$ = 10 μA, $I_B$ = 0) | BV$_{EBO}$ | 4.5 | | -- | Vdc |
| Collector Cutoff Current <br> ($V_{CB}$ = 20 Vdc) | I$_{CES}$ | -- | | 0.4 | μAdc |
| Collector  Emitter Cutoff Current <br> ($V_{CE}$ = 10 Vdc, $V_{BE}$ = 0.25Vdc) <br> @150C | I$_{CEX}$ | -- <br> -- | | 0.3 <br> 30 | μAdc |
| Emitter Base Cutoff Current <br> ($V_{EB}$ = 4 Vdc ) | I$_{EBO}$ | -- | | 0.25 | μAdc |
| D.C. Current Gain <br> ($I_C$ = 10 mAdc, $V_{CE}$ = 1.0 Vdc) <br> ($I_c$ = 10 mAdc, $V_{ce}$ = 1.0 Vdc)  @ -55C <br> ($I_C$ = 10 mAdc, $V_{CE}$ = 0.35 Vdc) <br> ($I_C$ = 30 mAdc, $V_{CE}$ = 0.4 Vdc) <br> ($I_C$ = 100 mAdc, $V_{CE}$ = 1.0 Vdc) | h$_{FE}$ | 40 <br> 20 <br> 40 <br> 30 <br> 20 | | 120 <br> --- <br> 120 <br> 120 <br> 120 | -- |
| Collector-Emitter Saturation Voltage(1) <br> ($I_C$ = 10 mAdc, $I_B$ = 1.0 mAdc) <br> ($I_C$ = 10mAdc, $I_B$ = 1.0 mAdc, $T_A$ = + 125°C) <br> ($I_C$ = 30 mAdc, $I_B$ = 3.0 mAdc) <br> ($I_C$ = 100 mAdc, $I_B$ = 10 mAdc) | V$_{CE(Sat)}$ | -- <br> -- <br> -- <br> -- | | 0.20 <br> 0.30 <br> 0.25 <br> 0.45 | Vdc |
| Base-Emitter Saturation Voltage(1) <br> ($I_C$ = 10 mAdc, $I_B$ = 1.0 mAdc) <br> ($I_C$ = 10 mAdc, $I_B$ = 1.0 mAdc, $T_A$ = + 125°C) <br> ($I_C$ = 10 mAdc, $I_B$ 1.0 mAdc, $T_A$ = -55°C) <br> ($I_C$ = 30 mAdc, $I_B$ = 3.0 mAdc) <br> ($I_C$ = 100 mAdc, $I_B$ = 10 mAdc) | V$_{BE(Sat)}$ | 0.70 <br> 0.59 <br> -- <br> -- <br> -- | | 0.85 <br> -- <br> 1.02 <br> 0.9 <br> 1.20 | Vdc |
| Small-signal short-circuit forward-current transfer ratio <br> ($I_C$ = 10 mAdc, $V_{CE}$ = 10 Vdc, f = 100 MHz) | /h$_{fe}$/ | 5 | | 10 | |
| Output Capacitance <br> ($V_{CB}$ = 5.0 Vdc, $I_E$ = 0, f = 1.0 MHz) | C$_{OBO}$ | -- | | 4.0 | pf |
| Input Capacitance <br> ($V_{EB}$ = 1.0 Vdc, $I_C$ = 0, f = 1.0 MHz) | C$_{IBO}$ | -- | | 5.0 | pf |
| Switching Speeds, Turn-on Time <br> Storage Time <br> Turn-on Time <br> Turn-off Time | <br> t$_s$ <br> t$_{on}$ <br> t$_{off}$ | <br> -- <br> -- <br> -- | | <br> 13 <br> 12 <br> 18 | ns |

(1) Pulse Test: Pulse Width  < 300 ms. Duty Cycle ≤ 2.0 %.