
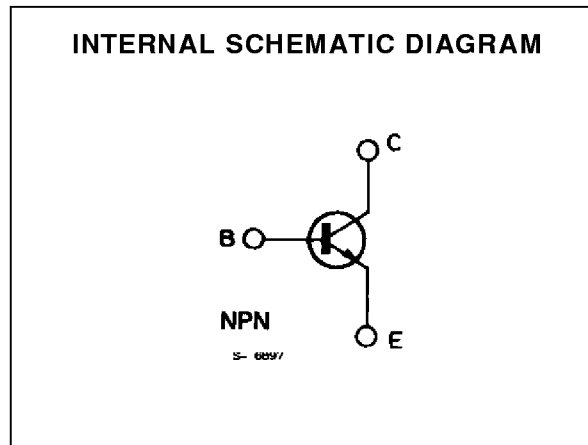
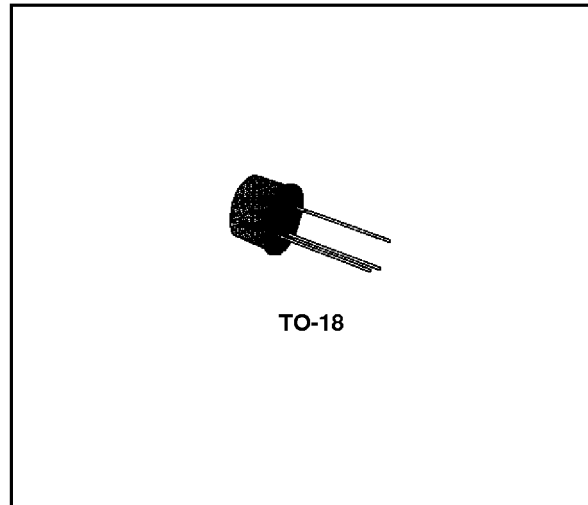


HIGH-FREQUENCY SATURATED SWITCH

DESCRIPTION

The 2N2368 is a silicon planar epitaxial NPN transistor in Jedec TO-18 metal case. It is designed specifically for high-speed saturated switching applications at current levels from 100 μ A to 100 mA.

 Products approved to CECC 50004-022/023 available on request.



ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Value | Unit |
|----------------|---|-------------|------------------|
| V_{CBO} | Collector-base Voltage ($I_E = 0$) | 40 | V |
| V_{CES} | Collector-emitter Voltage ($I_{BE} = 0$) | 40 | V |
| V_{CEO} | Collector-emitter Voltage ($I_B = 0$) | 15 | V |
| V_{EBO} | Emitter-base Voltage ($I_C = 0$) | 4.5 | V |
| I_{CM} | Collector Peak Current ($t = 10 \mu s$) | 0.5 | A |
| P_{tot} | Total Power Dissipation at $T_{amb} \leq 25 \text{ }^\circ\text{C}$ | 0.36 | W |
| | at $T_{case} \leq 25 \text{ }^\circ\text{C}$ | 1.2 | W |
| | at $T_{case} \leq 100 \text{ }^\circ\text{C}$ | 0.68 | W |
| T_{stg}, T_j | Storage and Junction Temperature | - 65 to 200 | $^\circ\text{C}$ |

THERMAL DATA

| | | | | |
|------------------|-------------------------------------|-----|-----|---------------|
| $R_{th\ j-case}$ | Thermal Resistance Junction-case | Max | 146 | $^{\circ}C/W$ |
| $R_{th\ j-amb}$ | Thermal Resistance Junction-ambient | Max | 486 | $^{\circ}C/W$ |

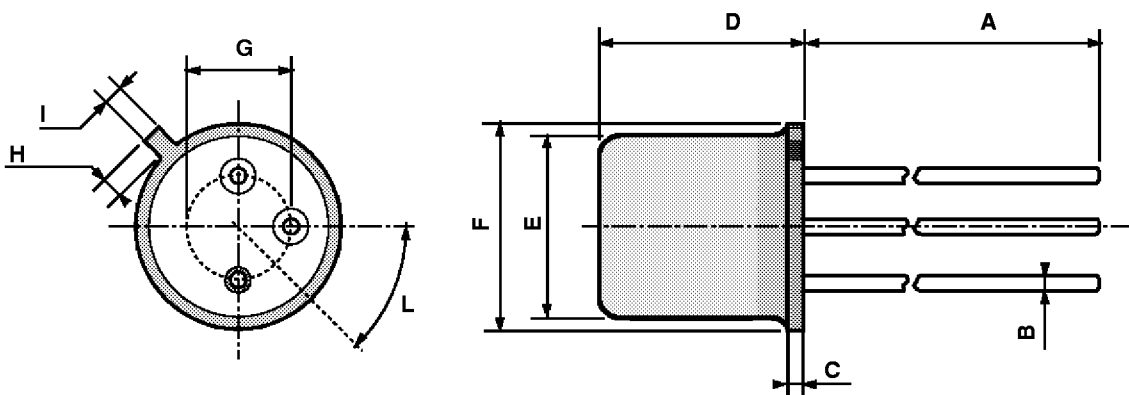
ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\ ^{\circ}C$ unless otherwise specified)

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|-------------------|--|---|----------------|------|-----------|--------------------|
| I_{CBO} | Collector Cutoff Current ($I_E = 0$) | $V_{CB} = 20\ V$ $V_{CB} = 20\ V$ $T_{amb} = 150\ ^{\circ}C$ | | | 0.4 30 | μA μA |
| $V_{(BR)\ CBO}$ | Collector-base Breakdown Voltage ($I_E = 0$) | $I_C = 10\ \mu A$ | 40 | | | V |
| $V_{(BR)\ CES}$ | Collector-emitter Breakdown Voltage ($V_{BE} = 0$) | $I_C = 10\ \mu A$ | 40 | | | V |
| $V_{(BR)\ CEO}^*$ | Collector-emitter Breakdown Voltage ($I_B = 0$) | $I_C = 10\ mA$ | 15 | | | V |
| $V_{(BR)\ EBO}$ | Emitter-base Breakdown Voltage ($I_C = 0$) | $I_E = 10\ \mu A$ | 4.5 | | | V |
| $V_{CE(sat)}^*$ | Collector-emitter Saturation Voltage | $I_C = 10\ mA$ $I_B = 1\ mA$ | | 0.2 | 0.25 | V |
| $V_{BE(sat)}^*$ | Base-emitter Saturation Voltage | $I_C = 10\ mA$ $I_B = 1\ mA$ | 0.7 | 0.75 | 0.85 | V |
| h_{FE}^* | DC Current Gain | $I_C = 10\ mA$ $V_{CE} = 1\ V$ $I_C = 100\ mA$ $V_{CE} = 2\ V$ $I_C = 10\ mA$ $V_{CE} = 1\ V$ $T_{amb} = -55\ ^{\circ}C$ | 20 10 10 | | 60 | |
| f_T | Transition Frequency | $I_C = 10\ mA$ $V_{CE} = 10\ V$ $f = 100\ MHz$ | 400 | 550 | | MHz |
| C_{CBO} | Collector-base Capacitance | $I_E = 0$ $V_{CB} = 5\ V$ $f = 1\ MHz$ | | 2.5 | 4 | pF |
| t_s | Storage Time | $I_C = 10\ mA$ $V_{CC} = 10\ V$ $I_{B1} = -$ $I_{B2} = 10\ mA$ | | 5 | 10 | ns |
| t_{on} | Turn-on Time | $I_C = 10\ mA$ $V_{CC} = 3\ V$ $I_{B1} = 3\ mA$ | | 9 | 12 | ns |
| t_{off} | Turn-off Time | $I_C = 10\ mA$ $V_{CC} = 3\ V$ $I_{B1} = 3\ mA$ $I_{B2} = -1.5\ mA$ | | 10 | 15 | ns |

* Pulsed : pulse duration = 300 μs , duty cycle = 1 %.

TO-18 MECHANICAL DATA

| DIM. | mm | | | inch | | |
|------|------|------|------|-------|-------|-------|
| | MIN. | TYP. | MAX. | MIN. | TYP. | MAX. |
| A | | 12.7 | | | 0.500 | |
| B | | | 0.49 | | | 0.019 |
| D | | | 5.3 | | | 0.208 |
| E | | | 4.9 | | | 0.193 |
| F | | | 5.8 | | | 0.228 |
| G | 2.54 | | | 0.100 | | |
| H | | | 1.2 | | | 0.047 |
| I | | | 1.16 | | | 0.045 |
| L | 45° | | | 45° | | |



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