

## PNP 2N3636 – 2N3637

### SILICON PLANAR RF TRANSISTORS

The 2N3636 and 2N3637 are PNP transistors mounted in TO-39 metal case. They are intended for high voltage switching and Low Power Amplifier. Compliance to RoHS

#### ABSOLUTE MAXIMUM RATINGS

| Symbol    | Ratings                                 | Value                         | Unit             |
|-----------|---|-------------------------------|------------------|
| $V_{CEO}$ | Collector-Emitter Voltage ( $I_b = 0$ ) | -175                          | V                |
| $V_{CBO}$ | Collector-Base Voltage ( $I_e = 0$ )    | -175                          | V                |
| $V_{EBO}$ | Emitter-Base Voltage ( $I_c = 0$ )      | -5                            | V                |
| $I_c$     | Collector Current                       | -1                            | A                |
| $P_D$     | Total Power Dissipation                 | $T_{amb} = 25^\circ\text{C}$  | 1                |
|           |   | $T_{case} = 25^\circ\text{C}$ | 5                |
| $T_J$     | <i>Junction Temperature</i>             | 200                           | $^\circ\text{C}$ |
| $T_{Stg}$ | Storage Temperature Range               | -65 to +200                   | $^\circ\text{C}$ |
| $T_{amb}$ | Operating Ambient Temperature           | -65 to +150                   | $^\circ\text{C}$ |

#### ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

| Symbol    | Ratings                                 | Test Condition(s)                        | Min  | Typ | Max  | Unit |
|-----------|---|--|------|-----|------|------|
| $I_{CBO}$ | Collector Cutoff Current                | $V_{CB} = -100\text{ V}, I_E = 0$        | -    | -   | -100 | nA   |
| $I_{EBO}$ | Emitter Cutoff Current                  | $V_{EB} = -3\text{ V}, I_C = 0$          | -    | -   | -50  | nA   |
| $V_{CEO}$ | Collector Emitter Breakdown Voltage (*) | $I_C = -10\text{ mA}, I_B = 0$           | -175 | -   | -    | V    |
| $V_{CBO}$ | Collector Base Breakdown Voltage        | $I_C = -100\text{ }\mu\text{A}, I_E = 0$ | -175 | -   | -    | V    |
| $V_{EBO}$ | Emitter Base Breakdown Voltage          | $I_E = -10\text{ mA}, I_C = 0$           | -5   | -   | -    | V    |

## PNP 2N3636 – 2N3637

### ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

| Symbol        | Ratings                                  | Test Condition(s)   | Min    | Typ | Max | Unit |     |
|---------------|--|---|--------|-----|-----|------|-----|
| $h_{FE}$      | DC Current Gain (*)                      | $I_C = -0.1 \text{ mA}$<br>$V_{CE} = -10 \text{ V}$                     | 2N3636 | 40  | -   | -    | -   |
|               |  |   | 2N3637 | 80  | -   | -    |     |
|               |  | $I_C = -1 \text{ mA}$<br>$V_{CE} = -10 \text{ V}$                       | 2N3636 | 45  | -   | -    |     |
|               |  |   | 2N3637 | 90  | -   | -    |     |
|               |  | $I_C = -10 \text{ mA}$<br>$V_{CE} = -10 \text{ V}$                      | 2N3636 | 50  | -   | -    |     |
|               |  |   | 2N3637 | 100 | -   | -    |     |
|               |  | $I_C = -50 \text{ mA}$<br>$V_{CE} = -10 \text{ V}$                      | 2N3636 | 50  | -   | 150  |     |
|               | 2N3637                                   | 100   | -      | 300 |     |      |     |
| $V_{CE(SAT)}$ | Collector-Emitter saturation Voltage (*) | $I_C = -10 \text{ mA}, I_B = -1 \text{ mA}$                             |        | -   | -   | 0.3  | V   |
|               |  | $I_C = -50 \text{ mA}, I_B = -5 \text{ mA}$                             |        | -   | -   | 0.5  |     |
| $V_{BE(SAT)}$ | Base-Emitter saturation Voltage (*)      | $I_C = -10 \text{ mA}, I_B = -1 \text{ mA}$                             |        | -   | -   | 0.8  | V   |
|               |  | $I_C = -50 \text{ mA}, I_B = -5 \text{ mA}$                             |        | -   | -   | 0.9  |     |
| $f_T$         | Transition frequency                     | $I_C = -30 \text{ mA}, V_{CE} = -30 \text{ V}$<br>$f = 100 \text{ MHz}$ | 2N3636 | 150 | -   | -    | MHz |
|               |  |   | 2N3637 | 200 | -   | -    |     |
| $C_{ob}$      | Output Capacitance                       | $I_E = 0, V_{CB} = -20 \text{ V}, f = 100 \text{ kHz}$                  |        | -   | -   | 10   | pF  |
| $C_{ib}$      | Input Capacitance                        | $I_C = 0, V_{EB} = -1 \text{ V}, f = 100 \text{ kHz}$                   |        | -   | -   | 75   | PF  |

### SWITCHING TIMES

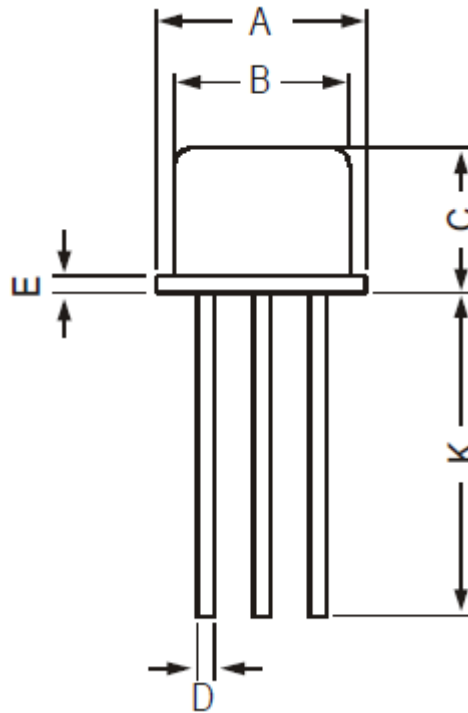
| Symbol    | Ratings       | Value | Unit |
|-----------|---------------|-------|------|
| $t_{on}$  | Turn-on time  | 400   | ns   |
| $t_{off}$ | Turn-off time |       |      |
|           |               | 600   |      |

(\*) Pulse conditions :  $t_p < 300 \mu\text{s}, \delta = 1.5\%$

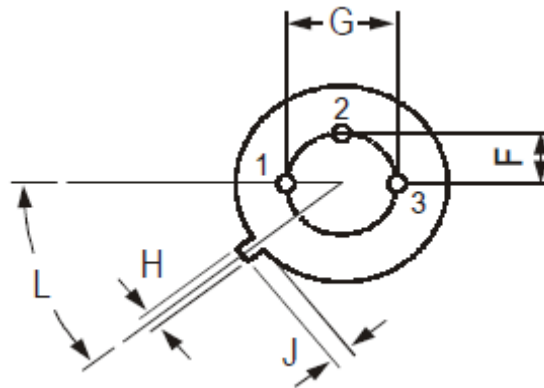
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### MECHANICAL DATA CASE TO-39

| DIMENSIONS (mm) |       |      |
|-----------------|-------|------|
|                 | min   | max  |
| A               | 8.50  | 9.39 |
| B               | 7.74  | 8.50 |
| C               | 6.09  | 6.60 |
| D               | 0.40  | 0.53 |
| E               | -     | 0.88 |
| F               | 2.41  | 2.66 |
| G               | 4.82  | 5.33 |
| H               | 0.71  | 0.86 |
| J               | 0.73  | 1.02 |
| K               | 12.70 | -    |
| L               | 42°   | 48°  |



|         |           |
|---------|-----------|
| Pin 1 : | Emitter   |
| Pin 2 : | Base      |
| Pin 3 : | Collector |
| Case :  | Collector |



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