

NPN SILICON HIGH FREQUENCY TRANSISTOR

DESCRIPTION:

The **2N4428** is a High Frequency Transistor Designed for Amplifier and Oscillator Applications.

MAXIMUM RATINGS

| | |
|---------------|---------------------------------|
| I_C | 425 mA |
| V_{CE} | 30 V |
| P_{DISS} | 3.5 W @ $T_C = 25^\circ C$ |
| T_J | $-65^\circ C$ to $+200^\circ C$ |
| T_{STG} | $-65^\circ C$ to $+200^\circ C$ |
| θ_{JC} | 50 $^\circ C/W$ |

PACKAGE STYLE TO-39

| SYMBOL | DIMENSIONS | | | |
|------------|-------------|-------|-------------|-------|
| | INCHES | | MILLIMETERS | |
| | MIN. | MAX. | MIN. | MAX. |
| ϕa | 0.190 | 0.210 | 4.83 | 5.33 |
| A | 0.240 | 0.260 | 6.10 | 6.60 |
| ϕb | 0.016 | 0.021 | 0.406 | 0.533 |
| ϕb_2 | 0.016 | 0.019 | 0.406 | 0.483 |
| ϕD | 0.350 | 0.370 | 8.89 | 9.40 |
| ϕD_1 | 0.315 | 0.335 | 8.00 | 8.51 |
| h | 0.009 | 0.125 | 0.229 | 3.18 |
| j | 0.028 | 0.034 | 0.711 | 0.864 |
| k | 0.029 | 0.040 | 0.737 | 1.02 |
| l | 0.500 | | 12.70 | |
| l_1 | | 0.050 | | 1.27 |
| l_2 | 0.250 | | 6.35 | |
| P | 0.100 | | 2.54 | |
| Q | | | | |
| a | 45° NOMINAL | | | |
| β | 90° NOMINAL | | | |

1 = EMITTER 2 = BASE
 3 = COLLECTOR

CHARACTERISTICS $T_C = 25^\circ C$

| SYMBOL | TEST CONDITIONS | MINIMUM | TYPICAL | MAXIMUM | UNITS |
|--------------------|---|-----------|---------|---------|---------|
| BV_{CEO} | $I_C = 20$ mA | 35 | | | V |
| BV_{CER} | $I_C = 20$ mA $R_{BE} = 10 \Omega$ | 55 | | | V |
| BV_{EBO} | $I_C = 100 \mu A$ | 3.5 | | | V |
| I_{CEX} | $V_{CE} = 55$ V $V_{BE} = -1.5$ V | | | 1.0 | mA |
| h_{FE} | $V_{CE} = 5.0$ V $I_C = 50$ mA $I_C = 400$ mA | 20 5.0 | | 200 | --- |
| f_t | $V_{CE} = 20$ V $I_C = 50$ mA $f = 200$ MHz | 700 | 1000 | | MHz |
| C_{OB} | $V_{CB} = 28$ V $f = 1.0$ MHz | | 1.5 | 3.5 | pF |
| P_{in} η | $V_{CC} = 28$ V $f = 200$ MHz $P_{out} = 750$ mW $R_s = 50 \Omega$ | 35 | | 75 | mW % |