

FEATURES

- Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.
- Available as non-RoHS (Sn/Pb plating), standard, and as RoHS by adding "-PBF" suffix.

MAXIMUM RATINGS

| Ratings | Symbol | 2N6421 | 2N6422 | Unit |
|--|-----------------|-------------|--------|---------------------------|
| Collector-Emitter Voltage | V_{CE0} | 250 | 300 | Vdc |
| Collector-Base Voltage | V_{CBO} | 375 | 500 | Vdc |
| Collector-Emitter Voltage | V_{CER} | 300 | 400 | Vdc |
| Emitter-Base Voltage | V_{EBO} | 6.0 | | Vdc |
| Base Current | I_B | 1.0 | | Adc |
| Collector Current | I_C | 2.0 | | Adc |
| Total Power Dissipation $T_A = 25^\circ\text{C}^{(1)}$ $T_C = 100^\circ\text{C}^{(2)}$ | P_T | 2.5 35 | | W |
| Operating & Storage Junction Temperature Range | T_J, T_{stg} | -65 to +200 | | $^\circ\text{C}$ |
| Maximum Thermal Resistance Junction to Case | $R_{\theta JC}$ | 5.0 | | $^\circ\text{C}/\text{W}$ |

Note 1: Derate linearly @ 14.85mW/ $^\circ\text{C}$ for $T_A > 25^\circ\text{C}$

Note 2: Derate linearly @ 200mW/ $^\circ\text{C}$ for $T_C > 25^\circ\text{C}$

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

| Characteristics | Symbol | Min. | Max. | Unit |
|--|-----------------------------------|------------|------------|------|
| OFF CHARACTERISTICS | | | | |
| Collector-Emitter Voltage $I_C = 10\text{mA}$ | 2N6421 2N6422 $V_{(BR)CEO}$ | 250 300 | | Vdc |
| Collector-Base Breakdown Voltage $I_C = 15\text{mA}$ | 2N6421 2N6422 $V_{(BR)CER}$ | 375 500 | | Vdc |
| Collector-Emitter Cutoff Current $V_{CE} = -150\text{V}$ | I_{CEO} | | 5.0 | mAdc |
| Collector-Emitter Cutoff Current $V_{CE} = 300\text{Vdc}, V_{BE} = -1.5\text{Vdc}$ $V_{CE} = 300\text{Vdc}, V_{BE} = -1.5\text{Vdc}$ | 2N6421 2N6422 I_{CEX} | | 1.0 1.0 | mAdc |
| Emitter-Base Cutoff Current $V_{EB} = 6.0\text{Vdc}$ | I_{EBO} | | 0.5 | mAdc |
| Forward Current Transfer Ratio $I_C = 1.0\text{Adc}, V_{CE} = 10.0\text{Vdc}$ $I_C = 100\text{mA}, V_{CE} = 10.0\text{Vdc}$ | h_{FE} | 25 40 | 100 | |
| Collector-Emitter Saturation Voltage $I_C = 1.0\text{Adc}, I_B = 0.125\text{Adc}$ | $V_{CE(sat)}$ | | 0.75 | Vdc |
| Base-Emitter Saturation Voltage $I_C = 1.0\text{Adc}, I_B = 0.1\text{Adc}$ | $V_{BE(SAT)}$ | | 1.4 | Vdc |

2N6421-2N6422

PNP SILICON HIGH POWER TRANSISTORS

| Characteristics | Symbol | Min. | Max. | Unit |
|---|------------|------|------|---------------|
| DYNAMIC CHARACTERISTICS | | | | |
| Magnitude of Common Emitter Small-Signal Short Circuit Forward Current Transfer Ratio $I_C = 200\text{mAdc}, V_{CE} = 10.0\text{Vdc}, f = 5.0\text{MHz}$ | $ h_{FE} $ | 3.0 | 15 | |
| Small Signal Short Circuit Forward Transfer Ratio $I_C = 1.0\text{Adc}, V_{CE} = 10.0\text{Vdc}, f = 1.0\text{kHz}$ | h_{fe} | 25 | 200 | |
| Output Capacitance $V_{CB} = 10\text{Vdc}, I_E = 0, 100\text{kHz} \leq f \leq 1.0\text{MHz}$ | C_{obo} | | 120 | pF |
| SWITCHING CHARACTERISTICS | | | | |
| Turn-On Time $V_{CC} = 30\text{Vdc}, I_C = 1.0\text{Adc}, I_B = 100\text{mAdc}, R_C = 29\Omega$ | t_{on} | | 3.0 | μs |
| Turn-Off Time $V_{CC} = 30\text{Vdc}, I_C = 0.5\text{Adc}, I_B = -I_B = 100\text{mAdc}, R_C = 29\Omega$ | t_{off} | | 7.0 | μs |
| SAFE OPERATING AREA | | | | |
| Dc Tests $T_C = 25^\circ\text{C}, 1\text{ cycle}, t = 1.0\text{s}$ Test 1 $V_{CE} = 17.5\text{Vdc}, I_C = 2.0\text{Adc}$ Test 2 $V_{CE} = 100\text{Vdc}, I_C = 350\text{mAdc}$ Test 3 $V_{CE} = 250\text{Vdc}, I_C = 37\text{mAdc}$ (2N6421) $V_{CE} = 300\text{Vdc}, I_C = 17\text{mAdc}$ (2N6422) | | | | |

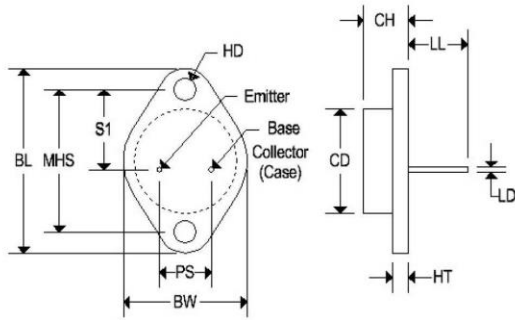
Note 3: Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$

2N6421-2N6422

PNP SILICON HIGH POWER TRANSISTORS

MECHANICAL CHARACTERISTICS

| | |
|----------|---------------|
| Case | TO-66 |
| Marking | Alpha-numeric |
| Polarity | See below |



| Dim | TO-66 | | | |
|-----|--------|-------|-------------|--------|
| | Inches | | Millimeters | |
| | Min | Max | Min | Max |
| BL | 1.205 | 1.280 | 30.60 | 32.50 |
| CD | 0.445 | 0.557 | 11.303 | 14.148 |
| CH | 0.257 | 0.284 | 6.540 | 7.220 |
| LL | 0.374 | 0.413 | 9.500 | 10.50 |
| BW | 0.680 | 0.727 | 17.26 | 18.46 |
| LD | 0.030 | 0.036 | 0.760 | 0.920 |
| HT | 0.054 | 0.065 | 1.380 | 1.650 |
| MHS | 0.951 | 0.976 | 24.16 | 24.78 |
| S1 | 0.545 | 0.614 | 13.84 | 15.60 |
| HD | 0.131 | 0.154 | 3.320 | 3.920 |
| PS | 0.191 | 0.210 | 4.860 | 5.340 |