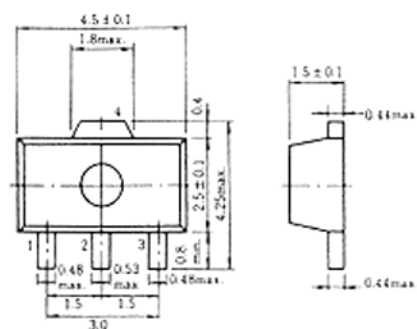


2SD1421

SILICON NPN EPITAXIAL
LOW FREQUENCY POWER AMPLIFIER



1. Base
 2. Collector
 3. Emitter
 4. Collector
- (Dimensions in mm)

(UPAK)

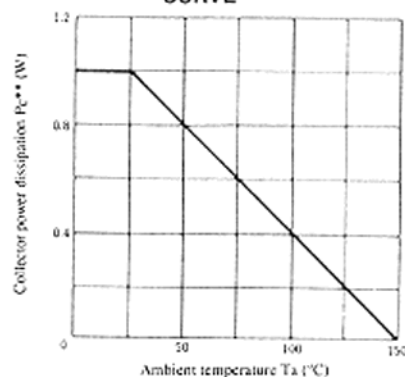
■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

| Item | Symbol | 2SD1421 | Unit |
|------------------------------|-----------------|-------------|------|
| Collector to base voltage | V_{CB0} | 180 | V |
| Collector to emitter voltage | V_{CE0} | 160 | V |
| Emitter to base voltage | V_{EB0} | 5 | V |
| Collector current | I_C | 1.5 | A |
| Collector peak current | $i_{C(peak)}^*$ | 3 | A |
| Collector power dissipation | P_C^{**} | 1 | W |
| Junction temperature | T_j | 150 | °C |
| Storage temperature | T_{stg} | -55 to +150 | °C |

* $PW \leq 10ms$, Duty cycle $\leq 20\%$.

** Value on the alumina ceramic board (12.5 × 20 × 0.7mm)

MAXIMUM COLLECTOR DISSIPATION CURVE



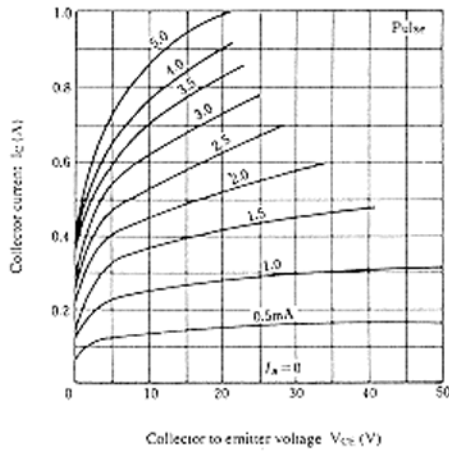
■ ELECTRICAL CHARACTERISTICS (Ta=25°C)

| Item | Symbol | Test Condition | min. | typ. | max. | Unit |
|---|---------------|-----------------------------------|------|------|------|---------|
| Collector to base breakdown voltage | $V_{(BR)CBO}$ | $I_C = 1mA, I_E = 0$ | 180 | — | — | V |
| Collector to emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C = 10mA, R_{th} = \infty$ | 160 | — | — | V |
| Emitter to base breakdown voltage | $V_{(BR)EBO}$ | $I_E = 1mA, I_C = 0$ | 5 | — | — | V |
| Collector cutoff current | I_{CBO} | $V_{CB} = 160V, I_E = 0$ | — | — | 10 | μA |
| DC current transfer ratio | h_{FE1}^* | $V_{CE} = 5V, I_C = 0.15A$ | 60 | — | 200 | |
| | h_{FE2} | $V_{CE} = 5V, I_C = 0.5A$ | 30 | — | — | |
| Collector to emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 0.5A, I_B = 50mA, pulse$ | — | — | 1.0 | V |
| Base to emitter voltage | V_{BE} | $V_{CE} = 5V, I_C = 0.15A, pulse$ | — | — | 0.9 | V |

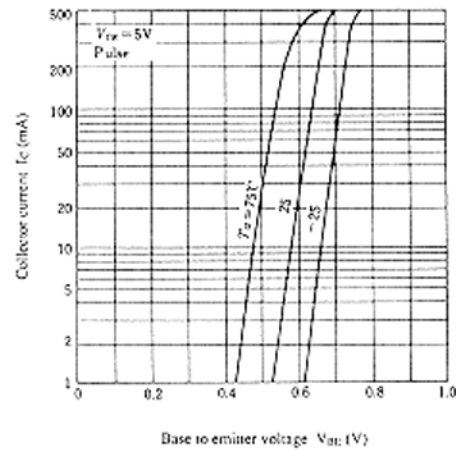
* The 2SD1421 is grouped by h_{FE1} as follows.

| Mark | ED | EE |
|-----------|-----------|------------|
| h_{FE1} | 60 to 120 | 100 to 200 |

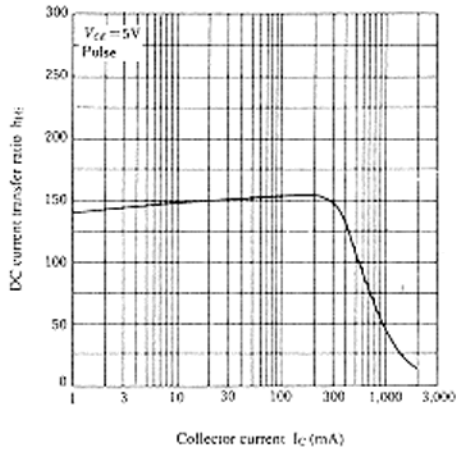
TYPICAL OUTPUT CHARACTERISTICS



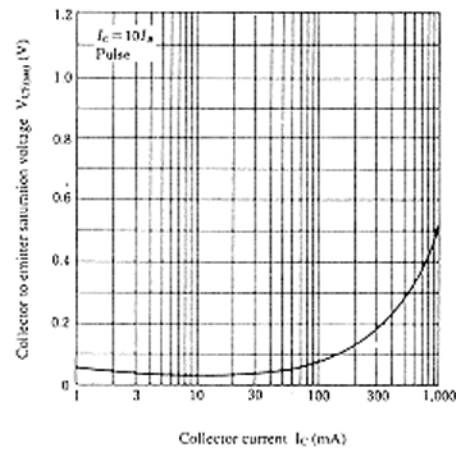
TYPICAL TRANSFER CHARACTERISTICS



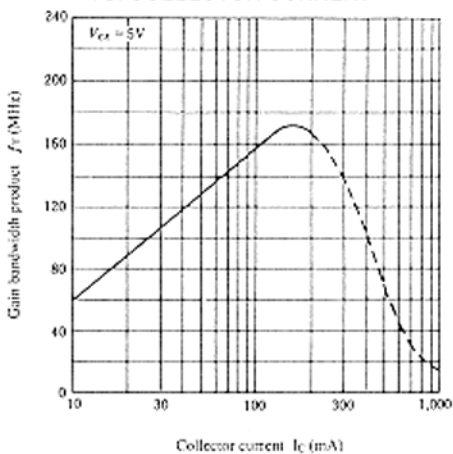
DC CURRENT TRANSFER RATIO VS. COLLECTOR CURRENT



COLLECTOR TO EMITTER SATURATION VOLTAGE VS. COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT VS. COLLECTOR CURRENT



COLLECTOR OUTPUT CAPACITANCE VS. COLLECTOR TO BASE VOLTAGE

