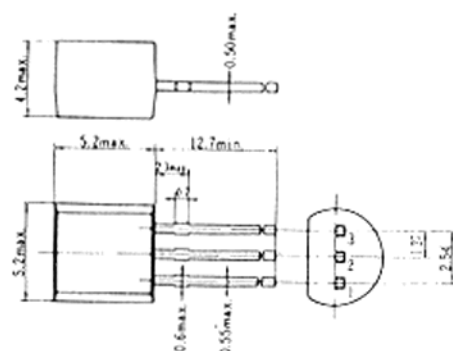


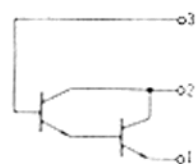
## 2SC1472(K)

SILICON NPN EPITAXIAL PLANAR

HIGH GAIN AMPLIFIER



(JEDEC TO-92)

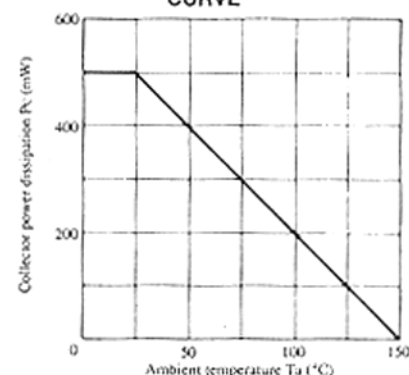


1. Emitter  
2. Collector  
3. Base  
(Dimensions in mm)

### ■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

| Item                         | Symbol               | 2SC1472(K)  | Unit |
|------------------------------|----------------------|-------------|------|
| Collector to base voltage    | V <sub>CB0</sub>     | 40          | V    |
| Collector to emitter voltage | V <sub>CE0</sub>     | 30          | V    |
| Emitter to base voltage      | V <sub>EB0</sub>     | 10          | V    |
| Collector current            | I <sub>C</sub>       | 300         | mA   |
| Collector peak current       | i <sub>C(peak)</sub> | 500         | mA   |
| Collector power dissipation  | P <sub>C</sub>       | 500         | mW   |
| Junction temperature         | T <sub>J</sub>       | 150         | °C   |
| Storage temperature          | T <sub>stg</sub>     | -55 to +150 | °C   |

### MAXIMUM COLLECTOR DISSIPATION CURVE



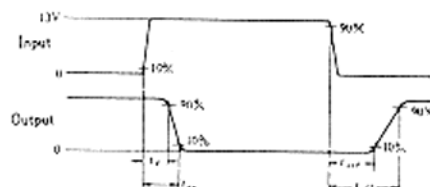
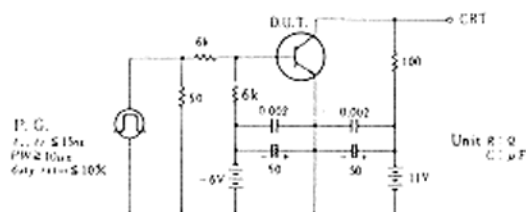
### ■ ELECTRICAL CHARACTERISTICS (Ta=25°C)

| Item                                    | Symbol               | Test Condition                                                     | min.  | typ. | max.    | Unit |
|-----------------------------------------|----------------------|--------------------------------------------------------------------|-------|------|---------|------|
| Collector to emitter breakdown voltage  | V <sub>(BR)CEO</sub> | I <sub>C</sub> = 1mA, R <sub>BE</sub> = ∞                          | 30    | —    | —       | V    |
| Collector cutoff current                | I <sub>CBO</sub>     | V <sub>CB</sub> = 30V, I <sub>E</sub> = 0                          | —     | —    | 100     | nA   |
| Emitter cutoff current                  | I <sub>EB0</sub>     | V <sub>EB</sub> = 10V, I <sub>C</sub> = 0                          | —     | —    | 100     | nA   |
| DC current transfer ratio               | h <sub>FE1</sub> *   | I <sub>C</sub> = 10mA, V <sub>CE</sub> = 5V                        | 2,000 | —    | 100,000 |      |
|                                         | h <sub>FE2</sub> *   | I <sub>C</sub> = 100mA, V <sub>CE</sub> = 5V (Pulse Test)          | 3,000 | —    | —       |      |
|                                         | h <sub>FE3</sub> *   | I <sub>C</sub> = 400mA, V <sub>CE</sub> = 5V (Pulse Test)          | 3,000 | —    | —       |      |
| Collector to emitter saturation voltage | V <sub>CE(sat)</sub> | I <sub>C</sub> = 100mA, I <sub>B</sub> = 0.1mA                     | —     | —    | 1.5     | V    |
| Base to emitter saturation voltage      | V <sub>BE(sat)</sub> | I <sub>C</sub> = 100mA, I <sub>B</sub> = 0.1mA                     | —     | —    | 2.0     | V    |
| Gain bandwidth product                  | f <sub>T</sub>       | I <sub>C</sub> = 10mA, V <sub>CE</sub> = 5V                        | 50    | —    | —       | MHz  |
| Collector output capacitance            | C <sub>ob</sub>      | V <sub>CB</sub> = 10V, f = 1MHz                                    | —     | —    | 10      | pF   |
| Turn on time                            | t <sub>on</sub>      | V <sub>CC</sub> = 11V                                              | —     | 60   | —       | ns   |
| Turn off time                           | t <sub>off</sub>     | I <sub>C</sub> = 100I <sub>B1</sub> = -100I <sub>B2</sub> = -100mA | —     | 800  | —       | ns   |
| Storage time                            | t <sub>stg</sub>     |                                                                    | —     | 350  | —       | ns   |

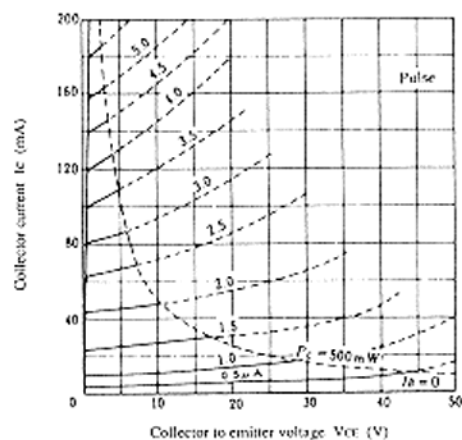
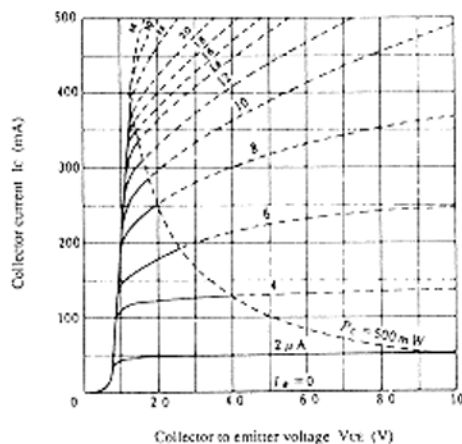
\* The 2SC1472(K) is grouped by h<sub>FE</sub> as follows.

|                  | A                | B                |
|------------------|------------------|------------------|
| h <sub>FE1</sub> | 2,000 to 100,000 | 5,000 to 100,000 |
| h <sub>FE2</sub> | 3,000 min        | 10,000 min       |
| h <sub>FE3</sub> | 3,000 min        | 10,000 min       |

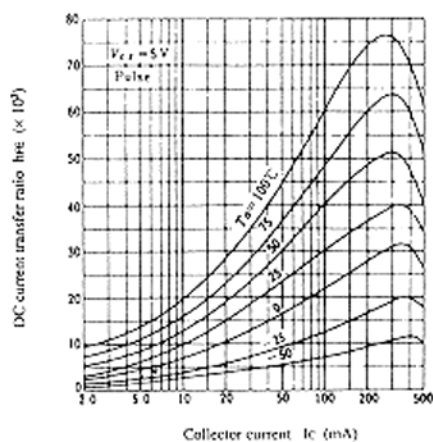
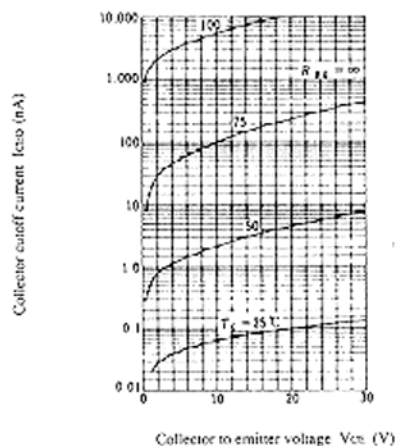
### RESPONSE WAVEFORM



### TYPICAL OUTPUT CHARACTERISTICS

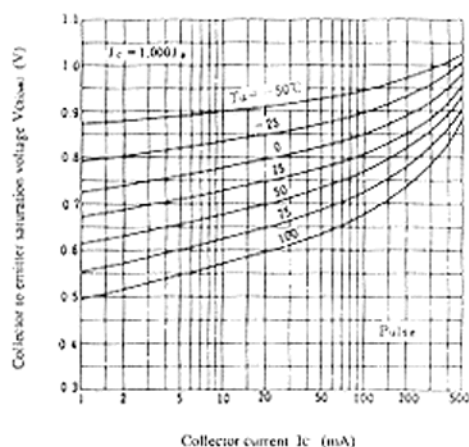


DC CURRENT TRANSFER RATIO VS.  
COLLECTOR CURRENT

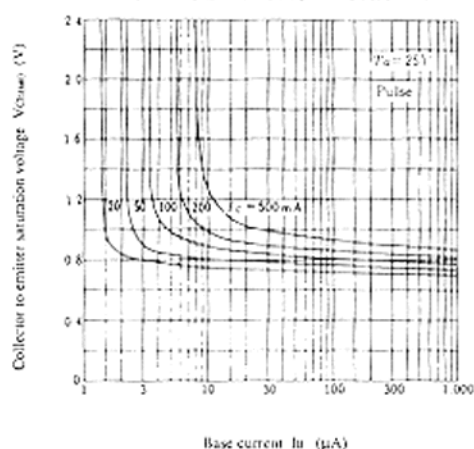


## 2SC1472(K)

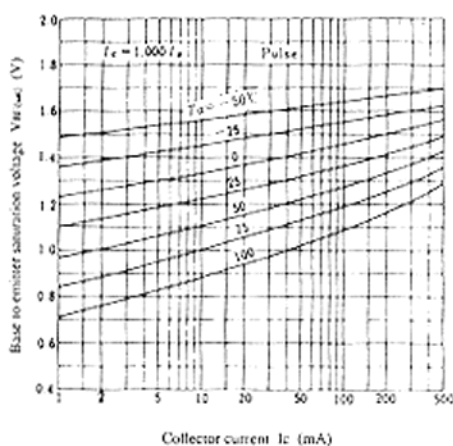
COLLECTOR TO EMITTER SATURATION VOLTAGE VS. COLLECTOR CURRENT



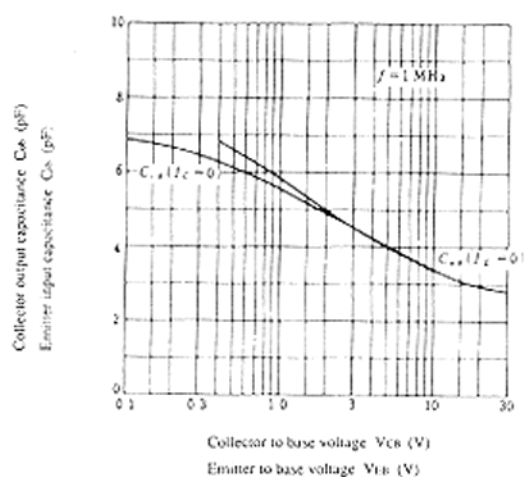
COLLECTOR TO EMITTER SATURATION VOLTAGE VS. BASE CURRENT



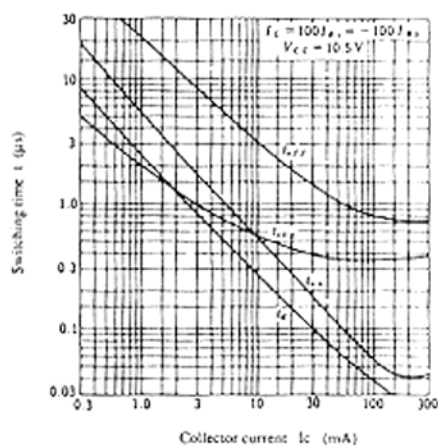
BASE TO EMITTER SATURATION VOLTAGE VS. COLLECTOR CURRENT



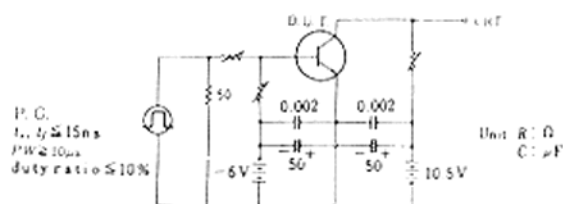
INPUT AND OUTPUT CAPACITANCE VS. VOLTAGE



SWITCHING TIME VS. COLLECTOR CURRENT



SWITCHING TIME TEST CIRCUIT



RESPONSE WAVEFORM

