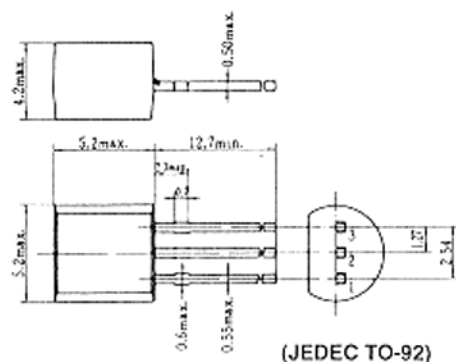


2SC1775, 2SC1775A

SILICON NPN EPITAXIAL

LOW FREQUENCY LOW NOISE AMPLIFIER

Complementary pair with 2SA872/A

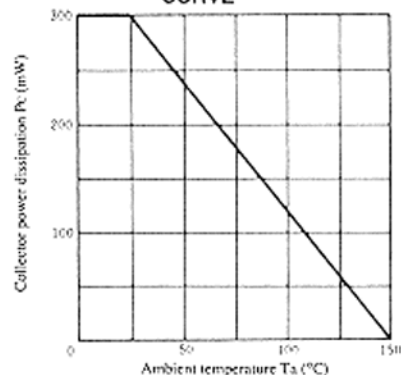


- 1. Emitter
 - 2. Collector
 - 3. Base
- (Dimensions in mm)

■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

| Item | Symbol | 2SC1775 | 2SC1775A | Unit |
|------------------------------|------------------|-------------|-------------|------|
| Collector to base voltage | V _{CB0} | 90 | 120 | V |
| Collector to emitter voltage | V _{CE0} | 90 | 120 | V |
| Emitter to base voltage | V _{EB0} | 5 | 5 | V |
| Collector current | I _C | 50 | 50 | mA |
| Collector power dissipation | P _C | 300 | 300 | mW |
| Junction temperature | T _J | 150 | 150 | °C |
| Storage temperature | T _{stg} | -55 to +150 | -55 to +150 | °C |

MAXIMUM COLLECTOR DISSIPATION CURVE



■ ELECTRICAL CHARACTERISTICS (Ta=25°C)

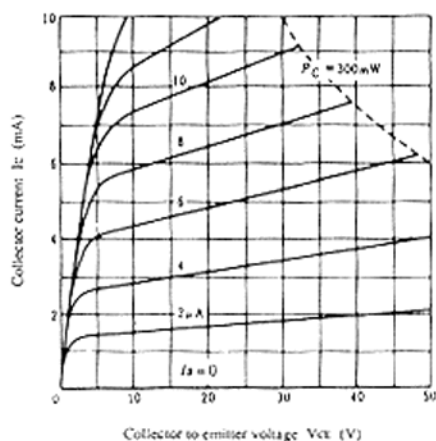
| Item | Symbol | Test Condition | 2SC1775 | | | 2SC1775A | | | Unit | |
|---|----------------------|---|----------|------|------|----------|------|------|------|----|
| | | | min. | typ. | max. | min. | typ. | max. | | |
| Collector to emitter breakdown voltage | V _{(BR)CEO} | I _C = 1mA, R _{BE} = ∞ | 90 | — | — | 120 | — | — | V | |
| Collector cutoff current | I _{CB0} | V _{CB} = 75V, I _E = 0 | — | — | 0.5 | — | — | — | μA | |
| | | V _{CB} = 100V, I _E = 0 | — | — | — | — | — | 0.5 | | |
| DC current transfer ratio | h _{FE1} * | V _{CE} = 12V, I _C = 2mA | 400 | — | 1200 | 400 | — | 1200 | | |
| | h _{FE2} | V _{CE} = 12V, I _C = 0.1mA | 160 | — | — | 160 | — | — | | |
| Base to emitter voltage | V _{BE} | V _{CE} = 12V, I _C = 2mA | — | — | 0.75 | — | — | 0.75 | V | |
| Collector to emitter saturation voltage | V _{CE(sat)} | I _C = 10mA, I _B = 1mA | — | — | 0.5 | — | — | 0.5 | V | |
| Gain bandwidth product | f _T | V _{CE} = 12V, I _C = 2mA | — | 200 | — | — | 200 | — | MHz | |
| Collector output capacitance | C _{ob} | V _{CB} = 25V, I _E = 0, f = 1MHz | — | 1.6 | — | — | 1.6 | — | pF | |
| Noise figure | NF | V _{CE} = 6V, I _C = 50μA, R _B = 50kΩ | f = 10Hz | — | — | 5.0 | — | — | 5.0 | dB |
| | | | f = 1kHz | — | — | 1.5 | — | — | 1.5 | |

* The 2SC1775A is grouped by h_{FE} as follows.

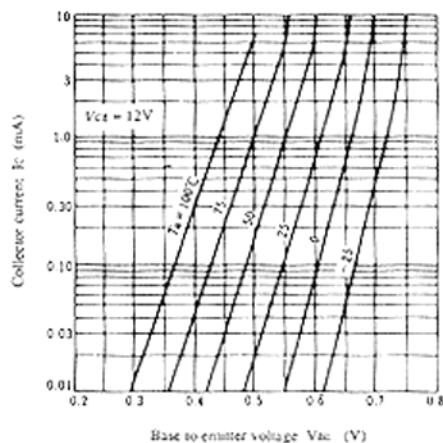
| E | F |
|------------|-------------|
| 400 to 800 | 600 to 1200 |

2SC1775, 2SC1775A

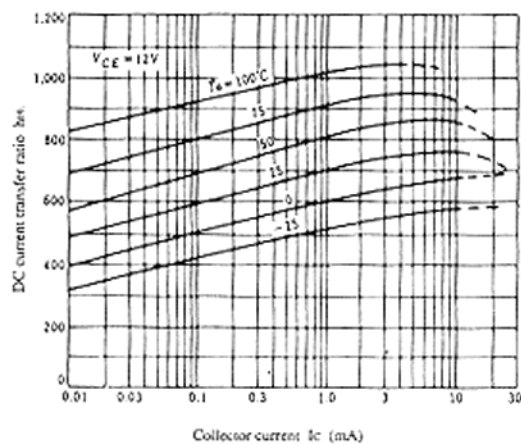
TYPICAL OUTPUT CHARACTERISTICS



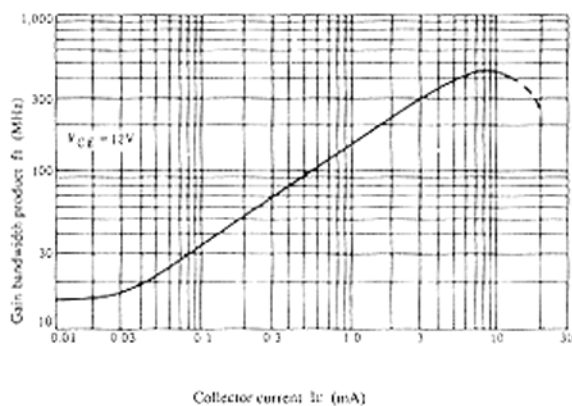
TYPICAL TRANSFER CHARACTERISTICS



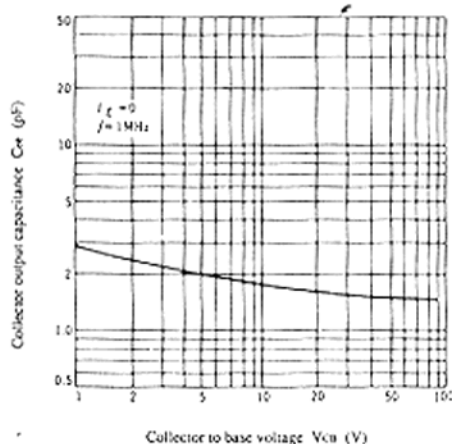
DC CURRENT TRANSFER RATIO VS. COLLECTOR CURRENT



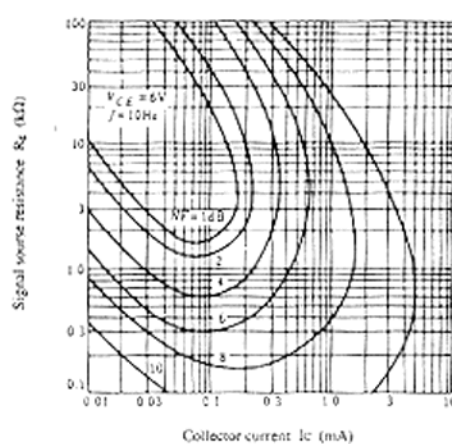
GAIN BANDWIDTH PRODUCT VS. COLLECTOR CURRENT



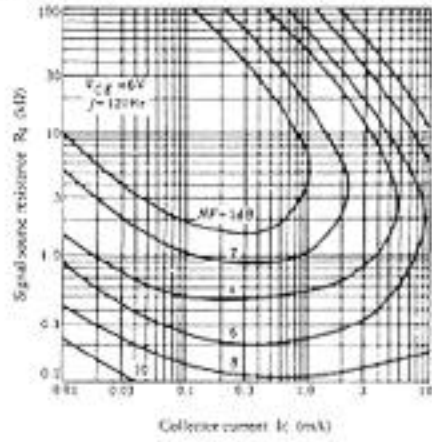
COLLECTOR OUTPUT CAPACITANCE VS. COLLECTOR TO BASE VOLTAGE



CONTOURS OF CONSTANT NOISE FIGURE



CONTOURS OF CONSTANT NOISE FIGURE



CONTOURS OF CONSTANT NOISE FIGURE

