

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

# 2SC2216, 2SC2717

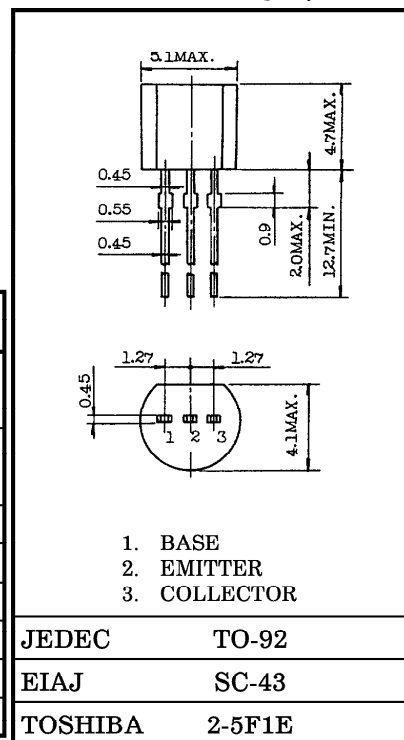
TV FINAL PICTURE IF AMPLIFIER APPLICATIONS.

Unit in mm

- High Gain :  $G_{pe} = 33\text{dB}$  (Typ.) ( $f = 45\text{MHz}$ )
- Good Linearity of  $h_{FE}$ .

**MAXIMUM RATINGS (Ta = 25°C)**

| CHARACTERISTIC              | SYMBOL    | RATING  | UNIT |
|-----------------------------|-----------|---------|------|
| Collector-Base Voltage      | 2SC2216   | 50      | V    |
|                             | 2SC2717   | 30      |      |
| Collector-Emitter Voltage   | 2SC2216   | 45      | V    |
|                             | 2SC2717   | 25      |      |
| Emitter-Base Voltage        | $V_{EBO}$ | 4       | V    |
| Collector Current           | $I_C$     | 50      | mA   |
| Emitter Current             | $I_E$     | -50     | mA   |
| Collector Power Dissipation | $P_C$     | 300     | mW   |
| Junction Temperature        | $T_j$     | 125     | °C   |
| Storage Temperature Range   | $T_{stg}$ | -55~125 | °C   |



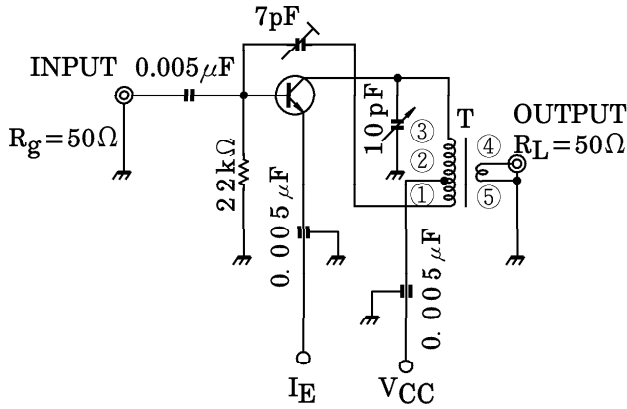
Weight : 0.21g

**ELECTRICAL CHARACTERISTICS (Ta = 25°C)**

| CHARACTERISTIC                       | SYMBOL              | TEST CONDITION  | MIN. | TYP. | MAX. | UNIT          |
|--------------------------------------|---------------------|---|------|------|------|---------------|
| Collector Cut-off Current            | 2SC2216             | $V_{CB} = 50\text{V}, I_E = 0$                                  | —    | —    | 0.1  | $\mu\text{A}$ |
|                                      | 2SC2717             | $V_{CB} = 30\text{V}, I_E = 0$                                  |      |      |      |               |
| Emitter Cut-off Current              | $I_{EBO}$           | $V_{EB} = 3\text{V}, I_C = 0$                                   | —    | —    | 0.1  | $\mu\text{A}$ |
| Collector-Emitter Breakdown Voltage  | 2SC2216             | $I_C = 10\text{mA}, I_B = 0$                                    | 45   | —    | —    | V             |
|                                      | 2SC2717             |   | 25   | —    | —    |               |
| DC Current Gain                      | 2SC2216             | $V_{CE} = 12.5\text{V}, I_C = 12.5\text{mA}$                    | 40   | —    | 140  | —             |
|                                      | 2SC2717             |   | 40   | —    | 240  |               |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$       | $I_C = 15\text{mA}, I_B = 1.5\text{mA}$                         | —    | —    | 0.2  | V             |
| Base-Emitter Saturation Voltage      | $V_{BE(sat)}$       | $I_C = 15\text{mA}, I_B = 1.5\text{mA}$                         | —    | —    | 1.5  | V             |
| Collector Output Capacitance         | $C_{ob}$            | $V_{CB} = 10\text{V}, I_E = 0, f = 30\text{MHz}$                | 0.8  | —    | 2.0  | pF            |
| Collector-Base Time Constant         | $C_c \cdot r_{bb'}$ | $V_{CB} = 10\text{V}, I_E = -1\text{mA}, f = 30\text{MHz}$      | —    | —    | 25   | ps            |
| Transition Frequency                 | $f_T$               | $V_{CE} = 12.5\text{V}, I_C = 12.5\text{mA}$                    | 300  | —    | —    | MHz           |
| Power Gain (Fig.)                    | 2SC2216             | $V_{CC} = 12.5\text{V}, I_E = -12.5\text{mA}, f = 45\text{MHz}$ | 29   | —    | 36   | dB            |
|                                      | 2SC2717             |   | 28   | —    | 36   |               |

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**COIL DATA**  
 0.20mmφ Cu WIRE  
 L=1.2μH WITH M-5 CORE  
 T : ①-② 3.0T  
       ②-③ 8.0T  
       ④-⑤ 1.0T

STATIC CHARACTERISTICS

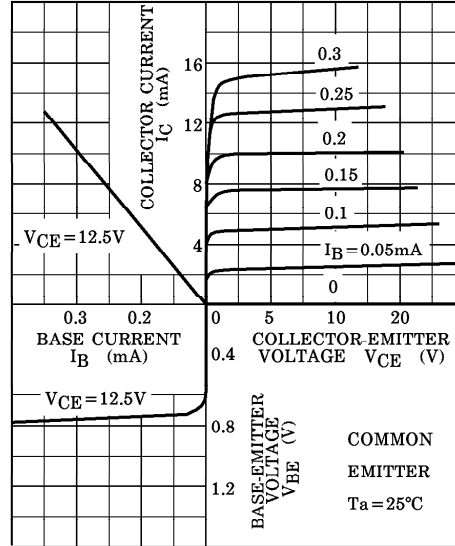
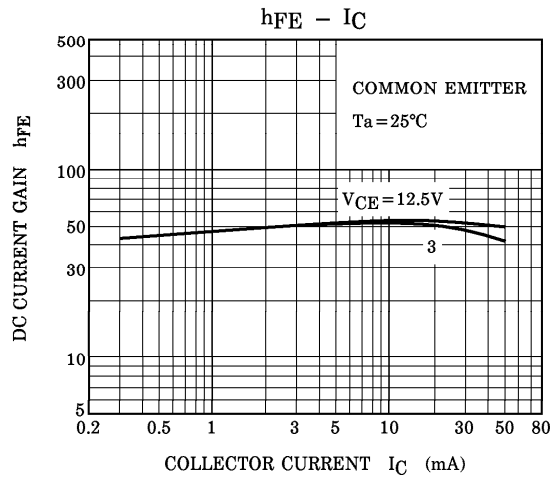
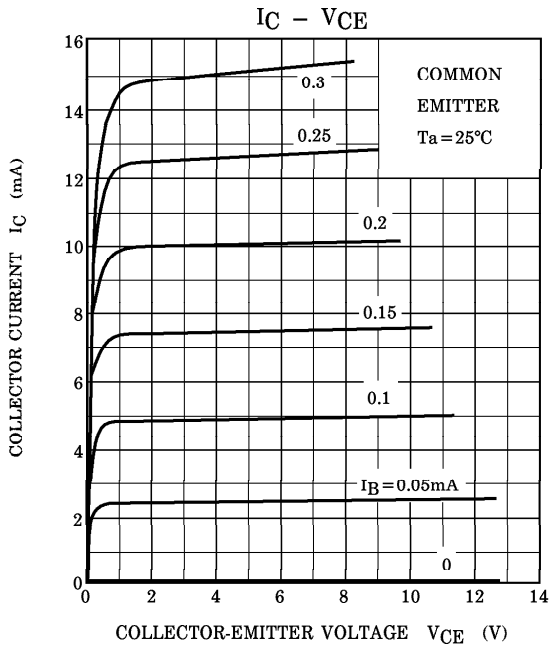


Fig. 45MHz  $G_{pe}$  TEST CIRCUIT



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