

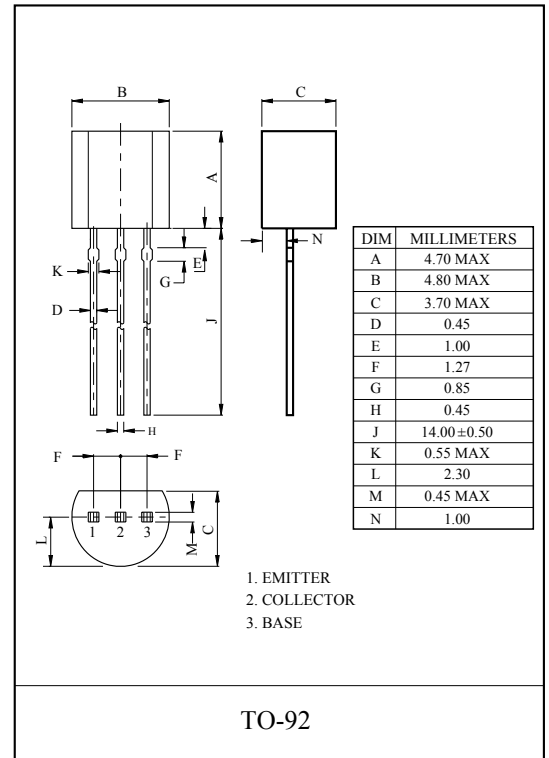
HIGH FREQUENCY APPLICATION.  
VHF BAND AMPLIFIER APPLICATION.

### FEATURES

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

### MAXIMUM RATING ( $T_a=25^\circ\text{C}$ )

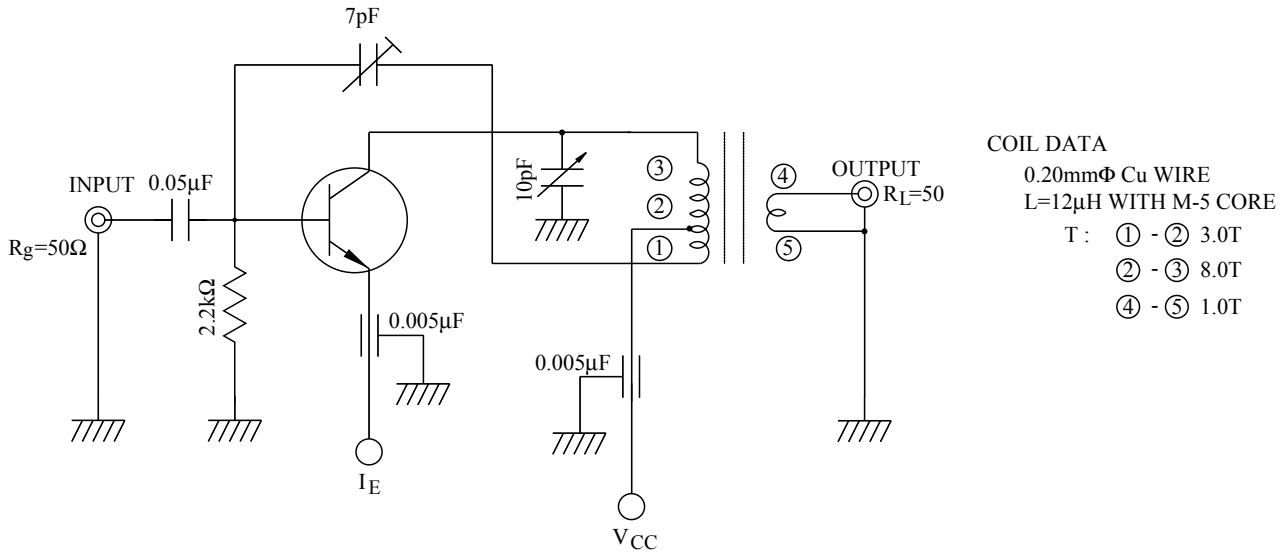
| CHARACTERISTIC              | SYMBOL    | RATING    | UNIT             |
|-----------------------------|-----------|-----------|------------------|
| Collector-Base Voltage      | $V_{CBO}$ | 30        | V                |
| Collector-Emitter Voltage   | $V_{CEO}$ | 25        | V                |
| Emitter-Base Voltage        | $V_{EBO}$ | 4         | V                |
| Collector Current           | $I_C$     | 50        | mA               |
| Emitter Current             | $I_E$     | -50       | mA               |
| Collector Power Dissipation | $P_C$     | 625       | mW               |
| Junction Temperature        | $T_j$     | 150       | $^\circ\text{C}$ |
| Storage Temperature Range   | $T_{stg}$ | -55 ~ 150 | $^\circ\text{C}$ |



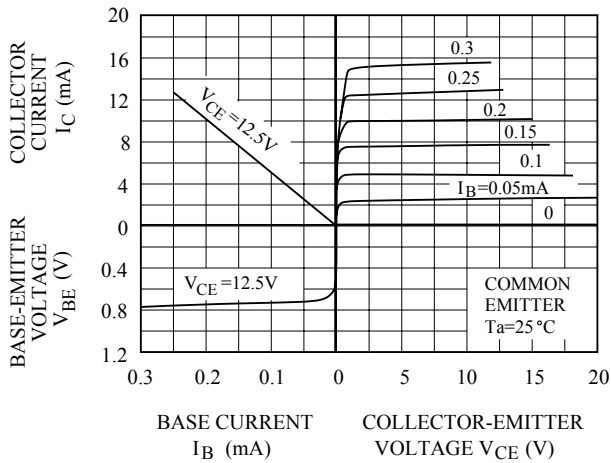
### ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$ )

| CHARACTERISTIC                      |                   | SYMBOL             | TEST CONDITION  | MIN. | TYP. | MAX. | UNIT          |
|-------------------------------------|-------------------|--------------------|---|------|------|------|---------------|
| Collector Cut-off Current           |                   | $I_{CBO}$          | $V_{CB}=30\text{V}, I_E=0$                                | -    | -    | 0.1  | $\mu\text{A}$ |
| Emitter Cut-off Current             |                   | $I_{EBO}$          | $V_{EB}=3\text{V}, I_C=0$                                 | -    | -    | 0.1  |               |
| Collector-Emitter Breakdown Voltage |                   | $V_{(BR)CEO}$      | $I_C=10\text{mA}, I_B=0$                                  | 25   | -    | -    | V             |
| DC Current Gain                     |                   | $h_{FE}$           | $V_{CE}=12.5\text{V}, I_C=12.5\text{mA}$                  | 20   | -    | 200  |               |
| Saturation Voltage                  | Collector-Emitter | $V_{CE(sat)}$      | $I_C=15\text{mA}, I_B=1.5\text{mA}$                       | -    | -    | 0.2  | V             |
|                                     | Base-Emitter      | $V_{BE(sat)}$      |   | -    | -    | 1.5  |               |
| Collector Output Capacitance        |                   | $C_{ob}$           | $V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$                 | 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.1)                  |                   | $G_{pe}$           | $V_{CC}=12.5\text{V}, I_E=-12.5\text{mA}, f=45\text{MHz}$ | 28   | -    | 36   | dB            |

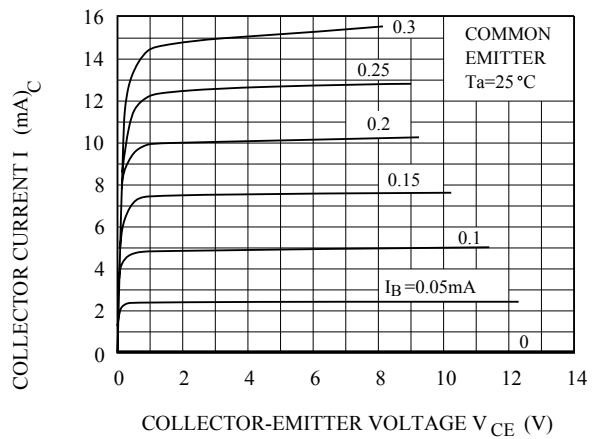
Fig. 1 45MHz  $G_{pe}$  TEST CIRCUIT



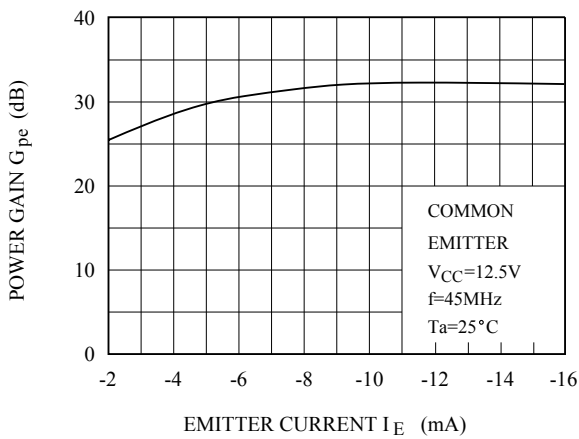
### STATIC CHARACTERISTICS



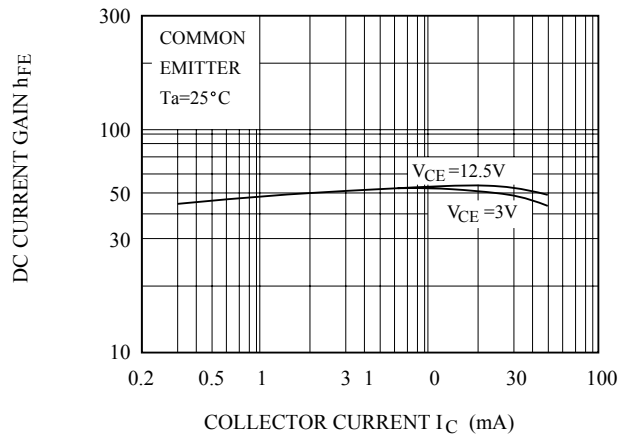
### $I_C - V_{CE}$



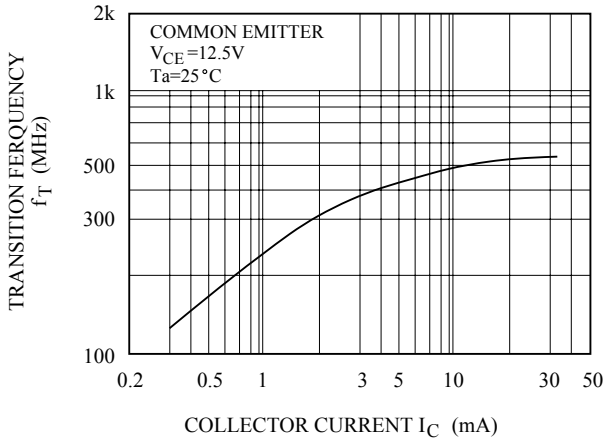
### $G_{pe} - I_E$ (See Fig 1)



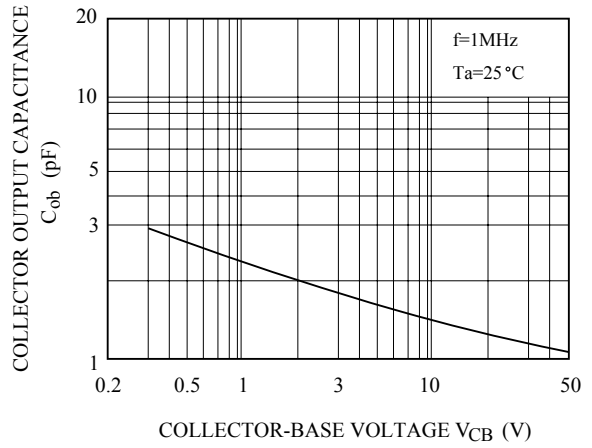
### $h_{FE} - I_C$



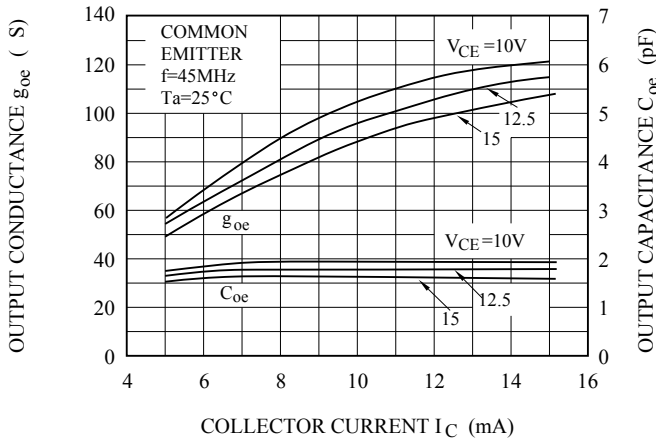
$f_T - I_C$



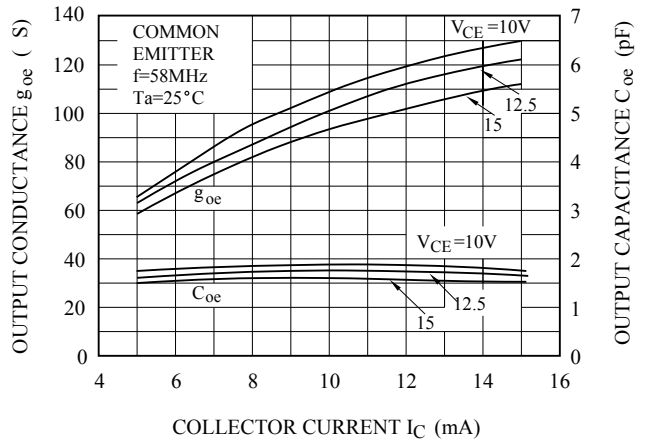
$C_{ob} - V_{CB}$



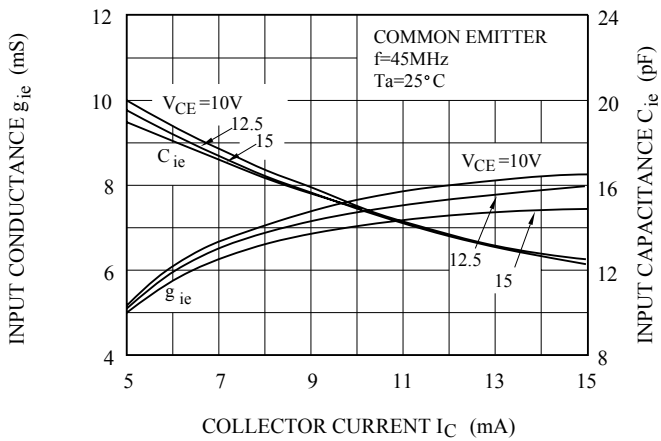
$g_{oe}, C_{oe} - I_C$



$g_{oe}, C_{oe} - I_C$



$g_{ie}, C_{ie} - I_C$



$g_{ie}, C_{ie} - I_C$

