

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

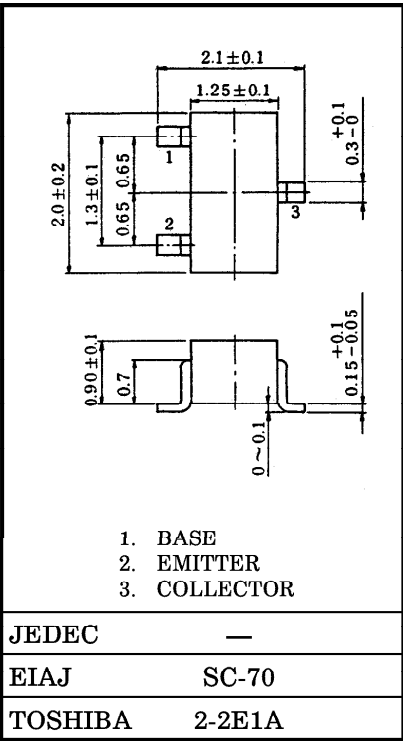
# 2SC4245

TV TUNER, UHF MIXER APPLICATIONS.  
VHF~UHF BAND RF AMPLIFIER APPLICATIONS.

MAXIMUM RATINGS (Ta = 25°C)

| CHARACTERISTIC              | SYMBOL           | RATING  | UNIT |
|-----------------------------|------------------|---------|------|
| Collector-Base Voltage      | V <sub>CBO</sub> | 30      | V    |
| Collector-Emitter Voltage   | V <sub>CEO</sub> | 15      | V    |
| Emitter-Base Voltage        | V <sub>EBO</sub> | 3       | V    |
| Collector Current           | I <sub>C</sub>   | 50      | mA   |
| Base Current                | I <sub>B</sub>   | 25      | mA   |
| Collector Power Dissipation | P <sub>C</sub>   | 100     | mW   |
| Junction Temperature        | T <sub>j</sub>   | 125     | °C   |
| Storage Temperature Range   | T <sub>stg</sub> | -55~125 | °C   |

Unit in mm



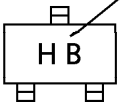
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

Weight : 0.006g

| CHARACTERISTIC                      | SYMBOL               | TEST CONDITION                                      | MIN. | TYP. | MAX. | UNIT |
|-------------------------------------|----------------------|-----------------------------------------------------|------|------|------|------|
| Collector Cut-off Current           | I <sub>CBO</sub>     | V <sub>CB</sub> =30V, I <sub>E</sub> =0             | —    | —    | 0.1  | μA   |
| Emitter Cut-off Current             | I <sub>EBO</sub>     | V <sub>EB</sub> =2V, I <sub>C</sub> =0              | —    | —    | 1.0  | μA   |
| Collector-Emitter Breakdown Voltage | V <sub>(BR)CEO</sub> | I <sub>C</sub> =1mA, I <sub>B</sub> =0              | 15   | —    | —    | V    |
| DC Current Gain                     | h <sub>FE</sub>      | V <sub>CE</sub> =10V, I <sub>C</sub> =5mA           | 40   | 100  | 200  | —    |
| Reverse Transfer Capacitance        | C <sub>re</sub>      | V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=1MHz     | —    | 0.6  | 0.9  | pF   |
| Transition Frequency                | f <sub>T</sub>       | V <sub>CE</sub> =10V, I <sub>C</sub> =2mA           | 1500 | 2400 | —    | MHz  |
| Conversion Gain                     | G <sub>ce</sub>      | V <sub>CC</sub> =10V, I <sub>C</sub> =2mA, f=800MHz | 12   | 17   | —    | dB   |
| Noise Figure                        | NF                   | f <sub>L</sub> =830MHz (+2dBm) (Fig.1)              | —    | 8    | 13   | dB   |

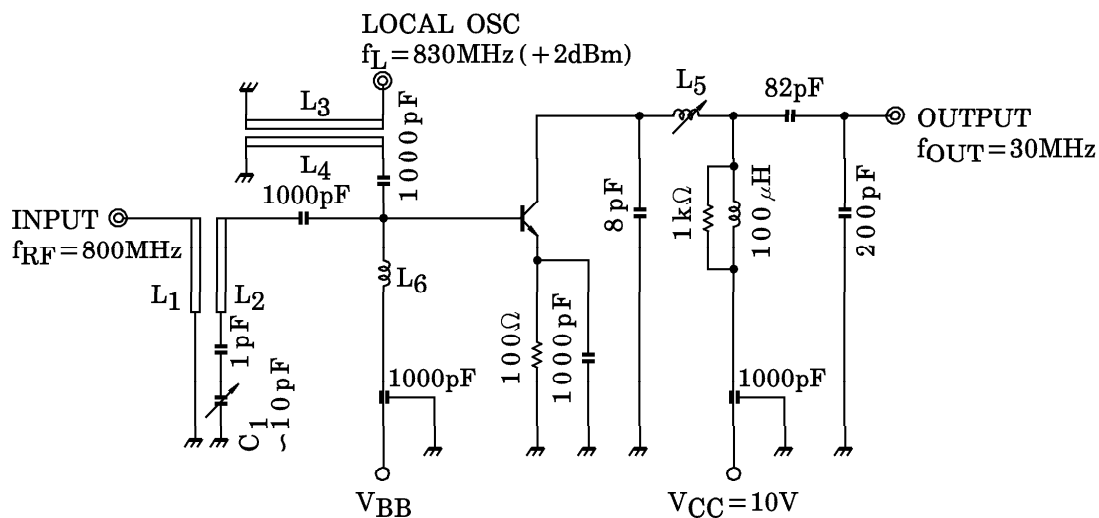
Marking

Type Name



961001EAA2

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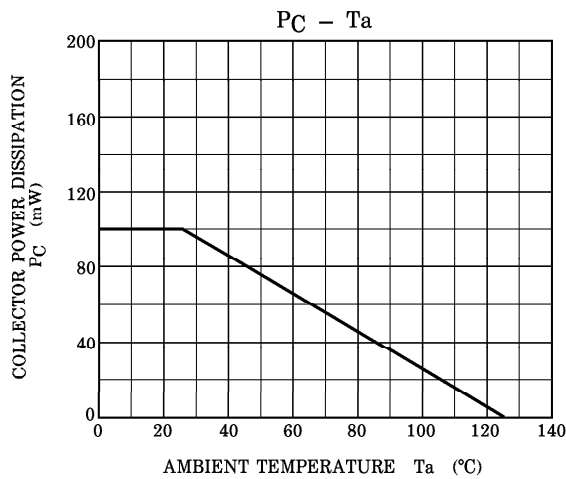
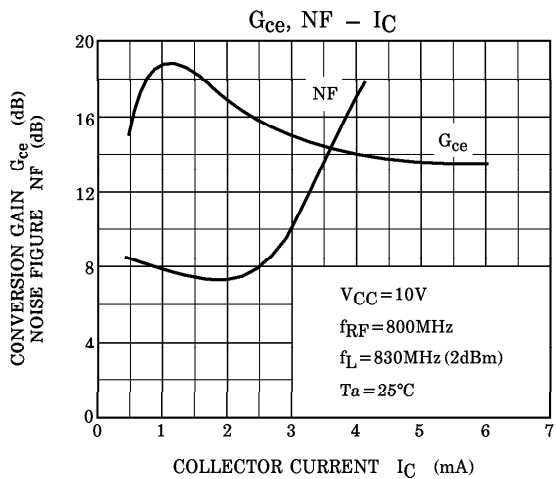
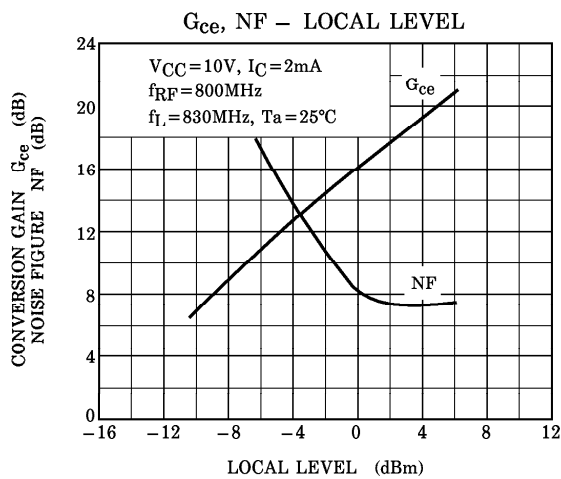
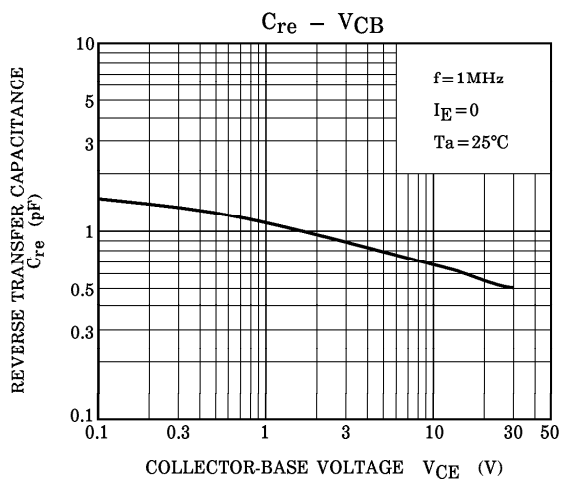
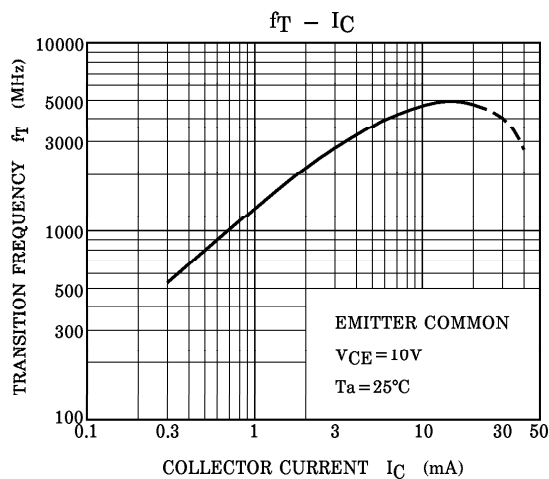
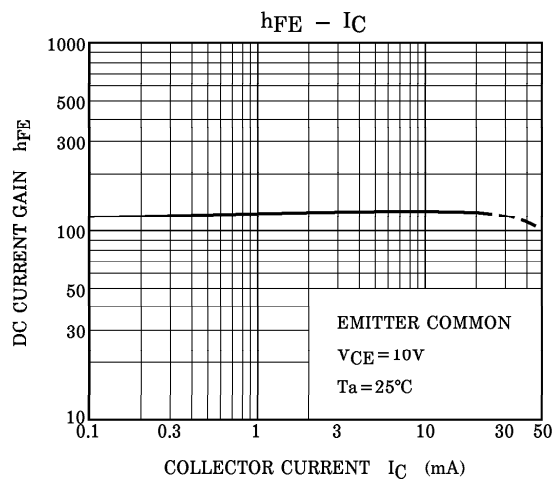


- $L_1 \sim L_4$  :  $\phi 0.8\text{mm}$  SILVER PLATED COPPER WIRE  
 $L_5$  : COIL WITH CORE SCN-5948①-③ TOKO OR EQUIVALENT  
 $L_6$  :  $\phi 0.2\text{mm}$  COPPER WIRE 10T 5mm  $I_D$   
 $C_1$  : AIR TRIMMER TTA23A100 MURATA MFC. Co., LTD. OR EQUIVALENT

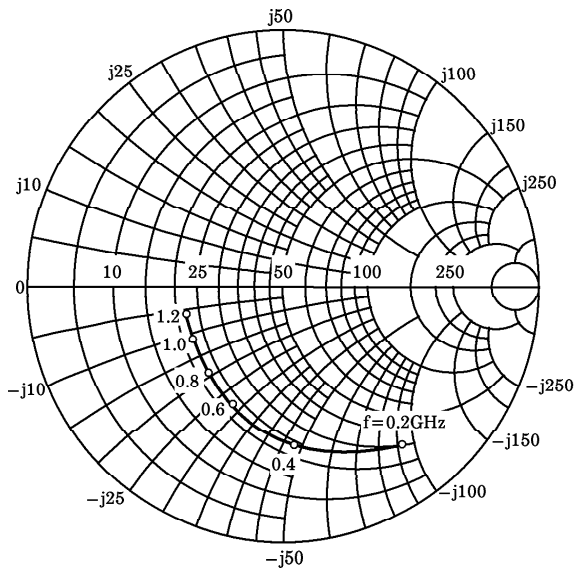
Fig.1 800MHz  $G_{ce}$ , NF TEST CIRCUIT

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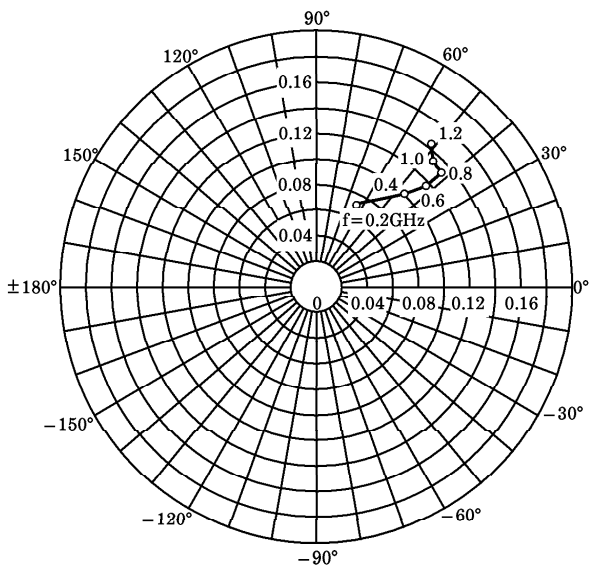
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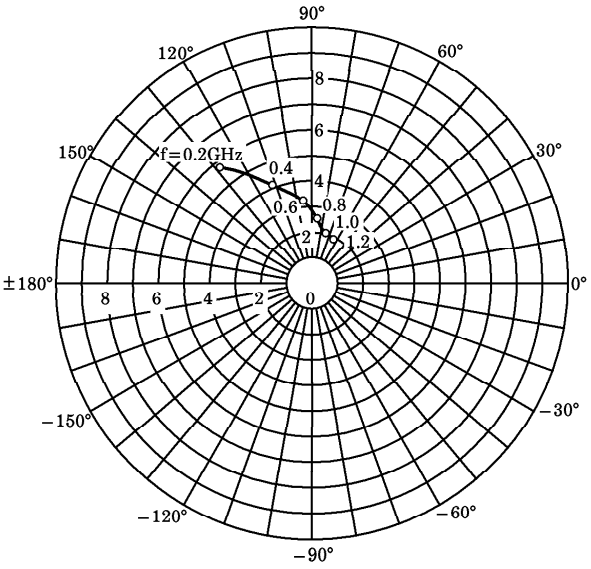
S<sub>11e</sub>  
V<sub>CE</sub>=10V  
I<sub>C</sub>=2mA  
T<sub>a</sub>=25°C  
(UNIT : Ω)



S<sub>12e</sub>  
V<sub>CE</sub>=10V  
I<sub>C</sub>=2mA  
T<sub>a</sub>=25°C



S<sub>21e</sub>  
V<sub>CE</sub>=10V  
I<sub>C</sub>=2mA  
T<sub>a</sub>=25°C



S<sub>22e</sub>  
V<sub>CE</sub>=10V  
I<sub>C</sub>=2mA  
T<sub>a</sub>=25°C  
(UNIT : Ω)

