

9097250 TOSHIBA (DISCRETE/OPTO)

56C 07444 D T-31-21

SILICON NPN EPITAXIAL PLANAR TYPE

**2SC1199**

HIGH FREQUENCY WIDE BAND AMPLIFIER APPLICATIONS.  
HIGH FREQUENCY LOW NOISE AMPLIFIER APPLICATIONS.

## FEATURES:

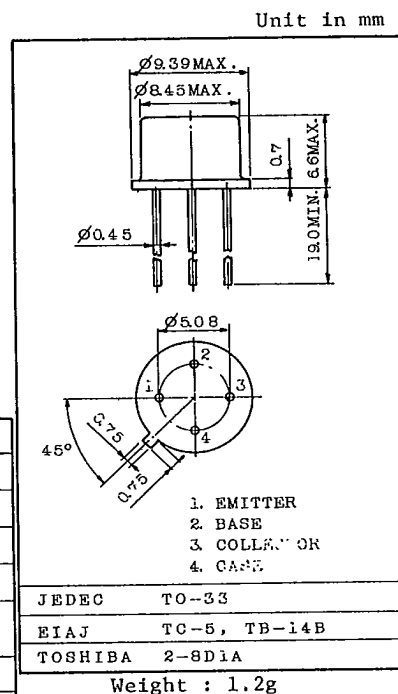
. Low Noise for High and Low Frequency

: NF=4.0dB(Max.)    f=200MHz

: NF=11dB (Max.)    f=10kHz

## MAXIMUM RATINGS (Ta=25°C)

| CHARACTERISTIC              | SYMBOL           | RATING    | UNIT |
|-----------------------------|------------------|-----------|------|
| Collector-Base Voltage      | V <sub>CB0</sub> | 50        | V    |
| Collector-Emitter Voltage   | V <sub>CEO</sub> | 35        | V    |
| Emitter-Base Voltage        | V <sub>EBO</sub> | 3         | V    |
| Collector Current           | I <sub>C</sub>   | 300       | mA   |
| Collector Power Dissipation | P <sub>C</sub>   | 600       | mW   |
| Junction Temperature        | T <sub>j</sub>   | 150       | °C   |
| Storage Temperature Range   | T <sub>stg</sub> | -65 ~ 150 | °C   |



## ELECTRICAL CHARACTERISTICS (Ta=25°C)

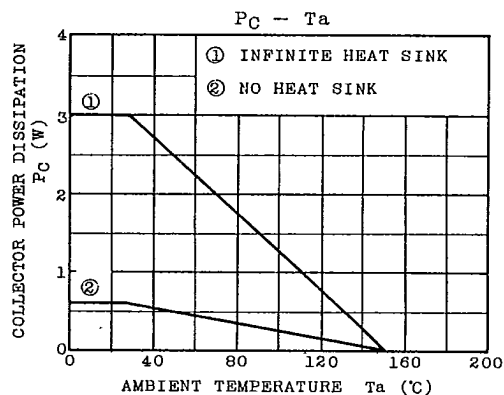
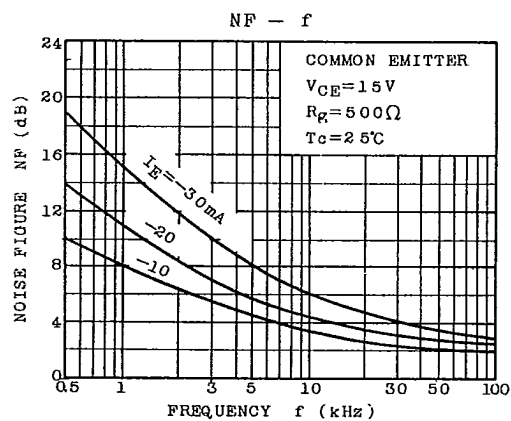
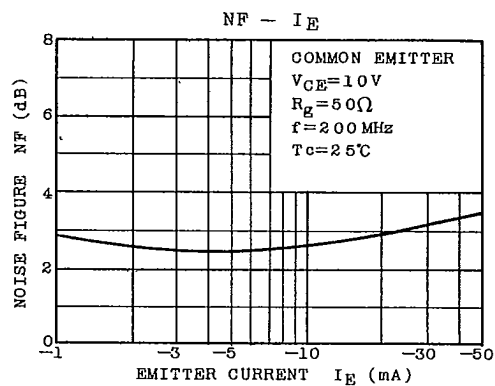
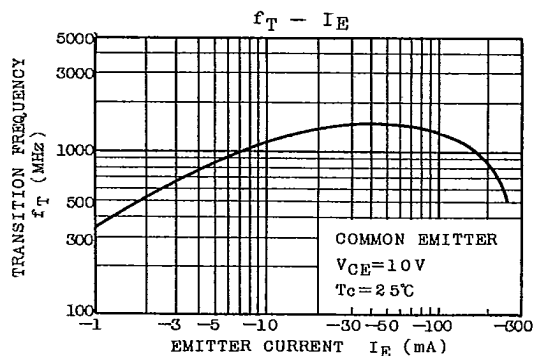
| CHARACTERISTIC                      | SYMBOL               | TEST CONDITION                                                             | MIN. | TYP. | MAX. | UNIT |
|-------------------------------------|----------------------|----------------------------------------------------------------------------|------|------|------|------|
| Collector Cut-off Current           | I <sub>CB0</sub>     | V <sub>CB</sub> =20V, I <sub>E</sub> =0                                    | -    | -    | 0.1  | μA   |
| Collector-Base Breakdown Voltage    | V <sub>(BR)CB0</sub> | I <sub>C</sub> =0.1mA, I <sub>E</sub> =0                                   | 50   | -    | -    | V    |
| Collector-Emitter Breakdown Voltage | V <sub>(BR)CEO</sub> | I <sub>C</sub> =1mA, I <sub>B</sub> =0                                     | 35   | -    | -    | V    |
| Emitter-Base Breakdown Voltage      | V <sub>(BR)EBO</sub> | I <sub>E</sub> =0.1mA, I <sub>C</sub> =0                                   | 3    | -    | -    | V    |
| DC Current Gain                     | h <sub>FE</sub>      | V <sub>CE</sub> =10V, I <sub>C</sub> =20mA                                 | 40   | 80   | 200  |      |
| Transition Frequency                | f <sub>T</sub>       | V <sub>CE</sub> =10V, I <sub>E</sub> =-20mA                                | 1000 | 1400 | -    | MHz  |
| Collector Output Capacitance        | C <sub>ob</sub>      | V <sub>CB</sub> =15V, I <sub>E</sub> =0, f=1MHz                            | -    | 2.2  | 3.0  | pF   |
| Noise Figure                        | NF(1)                | V <sub>CE</sub> =10V, I <sub>E</sub> =-10mA, R <sub>g</sub> =50Ω, f=200MHz | -    | 2.5  | 4.0  | dB   |
|                                     | NF(2)                | V <sub>CE</sub> =15V, I <sub>E</sub> =-30mA, R <sub>g</sub> =500Ω, f=10kHz | -    | 6    | 11   | dB   |

TOSHIBA CORPORATION

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