

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

2SC1815

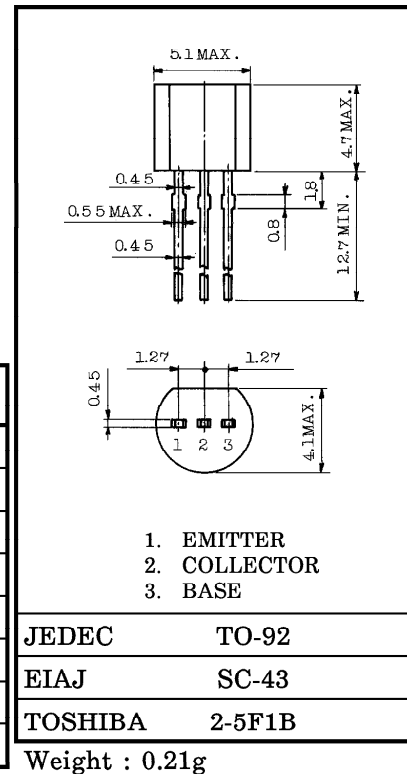
AUDIO FREQUENCY GENERAL PURPOSE AMPLIFIER APPLICATIONS.
DRIVER STAGE AMPLIFIER APPLICATIONS.

Unit in mm

- High Voltage and High Current
: $V_{CEO} = 50V$ (Min.), $I_C = 150mA$ (Max.)
- Excellent h_{FE} Linearity
: $h_{FE(2)} = 100$ (Typ.) at $V_{CE} = 6V$, $I_C = 150mA$
: $h_{FE} (I_C = 0.1mA) / h_{FE} (I_C = 2mA) = 0.95$ (Typ.)
- Low Noise : $NF = 1dB$ (Typ.) at $f = 1kHz$
- Complementary to 2SA1015 (O, Y, GR class)

MAXIMUM RATINGS ($T_a = 25^\circ C$)

| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|-----------------------------|-----------|---------|------------|
| Collector-Base Voltage | V_{CBO} | 60 | V |
| Collector-Emitter Voltage | V_{CEO} | 50 | V |
| Emitter-Base Voltage | V_{EBO} | 5 | V |
| Collector Current | I_C | 150 | mA |
| Base Current | I_B | 50 | mA |
| Collector Power Dissipation | P_C | 400 | mW |
| Junction Temperature | T_j | 125 | $^\circ C$ |
| Storage Temperature Range | T_{stg} | -55~125 | $^\circ C$ |



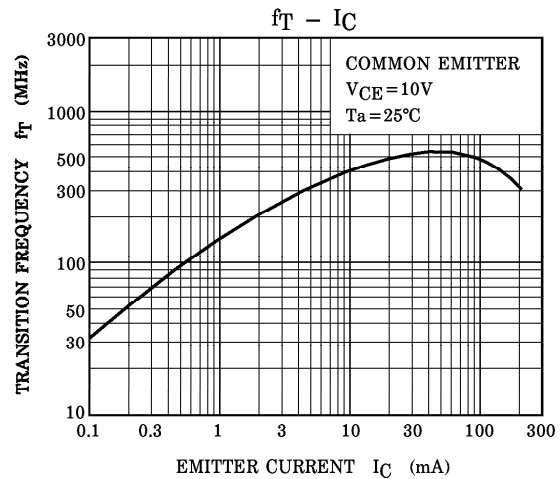
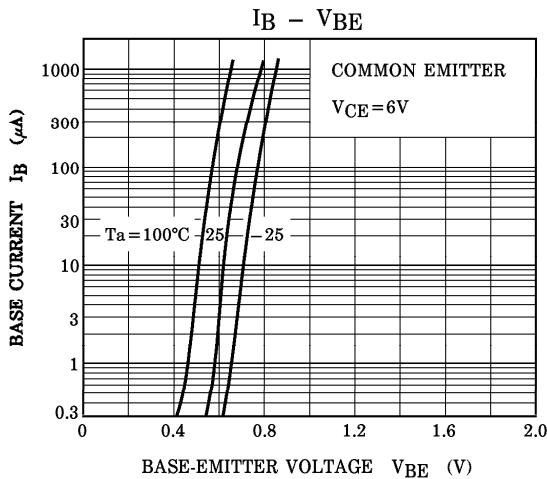
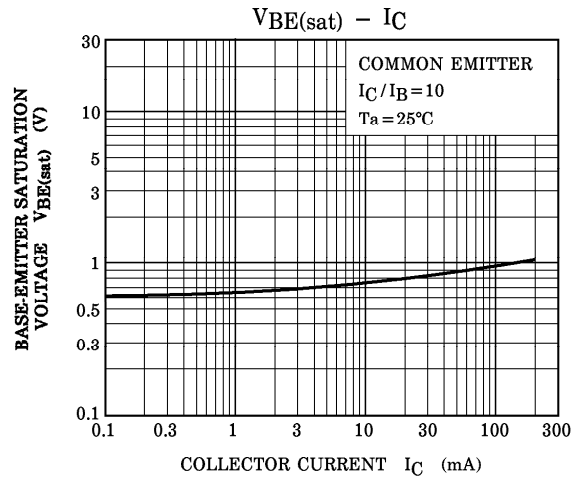
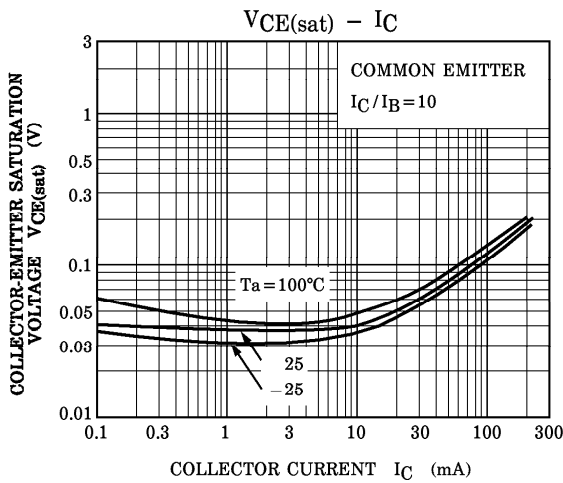
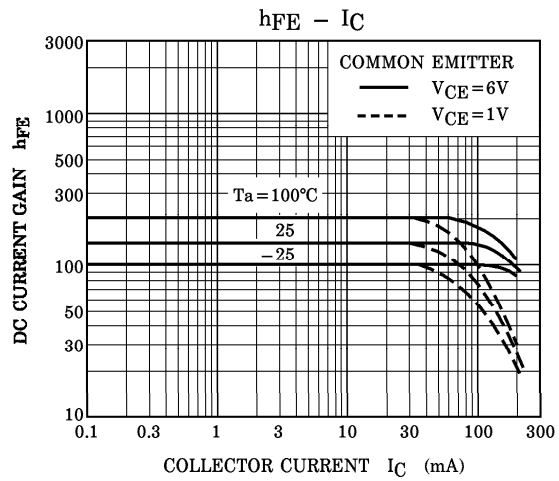
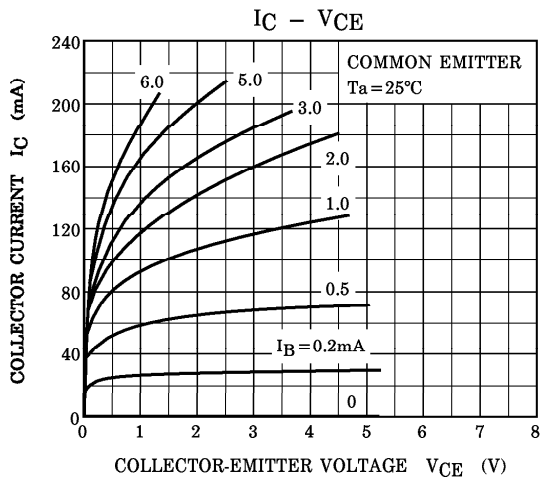
ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ C$)

| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|--------------------------------------|-----------------------|---|------|------|------|----------|
| Collector Cut-off Current | I_{CBO} | $V_{CB} = 60V, I_E = 0$ | — | — | 0.1 | μA |
| Emitter Cut-off Current | I_{EBO} | $V_{EB} = 5V, I_C = 0$ | — | — | 0.1 | μA |
| DC Current Gain | $h_{FE(1)}$ (Note) | $V_{CE} = 6V, I_C = 2mA$ | 70 | — | 700 | |
| | $h_{FE(2)}$ | $V_{CE} = 6V, I_C = 150mA$ | 25 | 100 | — | |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = 100mA, I_B = 10mA$ | — | 0.1 | 0.25 | V |
| Base-Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C = 100mA, I_B = 10mA$ | — | — | 1.0 | V |
| Transition Frequency | f_T | $V_{CE} = 10V, I_C = 1mA$ | 80 | — | | MHz |
| Collector Output Capacitance | C_{ob} | $V_{CB} = 10V, I_E = 0, f = 1MHz$ | — | 2.0 | 3.5 | pF |
| Base Intrinsic Resistance | $r_{bb'}$ | $V_{CE} = 10V, I_E = -1mA$ $f = 30MHz$ | — | 50 | — | Ω |
| Noise Figure | NF | $V_{CE} = 6V, I_C = 0.1mA$ $f = 1kHz, R_G = 10k\Omega$ | — | 1.0 | 10 | dB |

Note : h_{FE} Classification 0 : 70~140 Y : 120~240 GR : 200~400 BL : 350~700

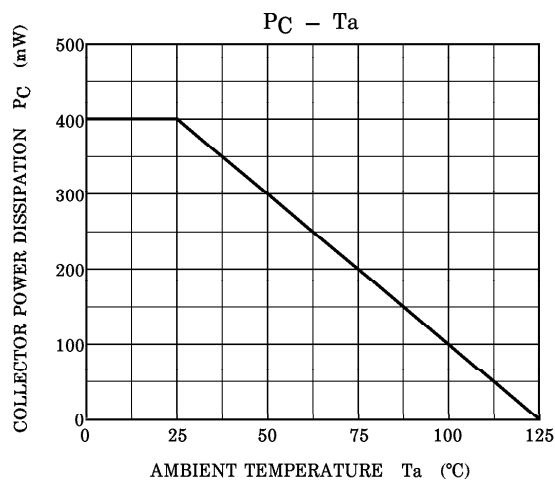
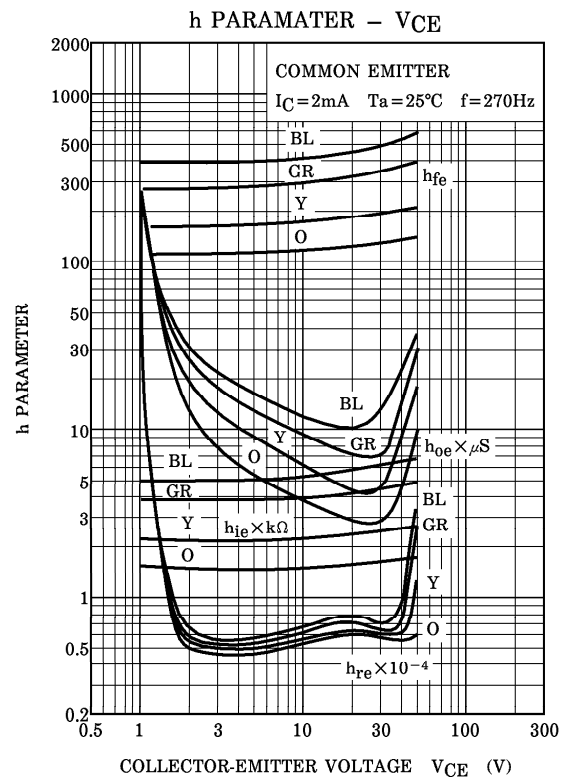
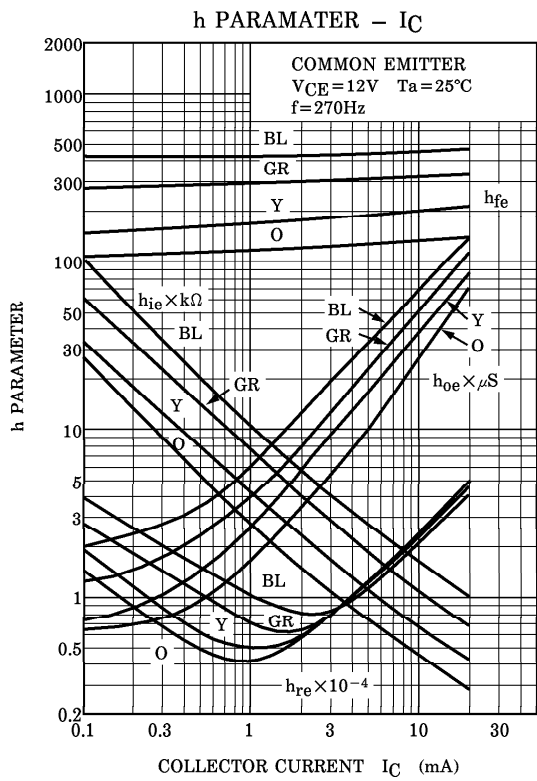
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