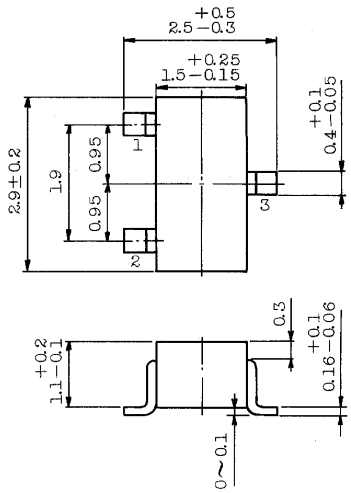
TOSHIBA TRANSISTOR SILICON PNP EPITAXIAL TYPE (PCT PROCESS)

# 2SA1162

AUDIO FREQUENCY GENERAL PURPOSE AMPLIFIER APPLICATIONS.

- High Voltage and High Current
  : $V_{CEO} = -50V$, $I_C = -150mA$ (Max.)
- Excellent $h_{FE}$ Linearity
  : $h_{FE}$ ($I_C = -0.1mA$) / $h_{FE}$ ($I_C = -2mA$) = 0.95 (Typ.)
- High $h_{FE}$ : $h_{FE} = 70 \sim 400$
- Low Noise : NF = 1dB (Typ.), 10dB (Max.)
- Complementary to 2SC2712
- Small Package

Unit in mm




1. BASE
2. EMITTER
3. COLLECTOR

| | |
|---|---|
| JEDEC | TO-236MOD |
| EIAJ | SC-59 |
| TOSHIBA | 2-3F1A |

Weight : 0.012g

MAXIMUM RATINGS (Ta = 25°C)

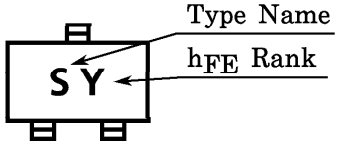
| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | −50 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | −50 | V |
| Emitter-Base Voltage | $V_{EBO}$ | −5 | V |
| Collector Current | $I_C$ | −150 | mA |
| Base Current | $I_B$ | −30 | mA |
| Collector Power Dissipation | $P_C$ | 150 | mW |
| Junction Temperature | $T_j$ | 125 | °C |
| Storage Temperature Range | $T_{stg}$ | −55~125 | °C |

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

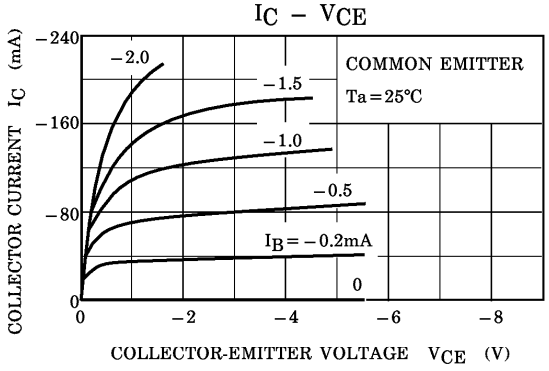
| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|
| Collector Cut-off Current | $I_{CBO}$ | $V_{CB} = -50V$, $I_E = 0$ | — | — | −0.1 | μA |
| Emitter Cut-off Current | $I_{EBO}$ | $V_{EB} = -5V$, $I_C = 0$ | — | — | −0.1 | μA |
| DC Current Gain | $h_{FE}$ (Note) | $V_{CE} = -6V$, $I_C = -2mA$ | 70 | — | 400 | |
| Collector-Emitter Saturation Voltage | $V_{CE\ (sat)}$ | $I_C = -100mA$, $I_B = -10mA$ | — | −0.1 | −0.3 | 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 | — | 4 | 7 | pF |
| Noise Figure | NF | $V_{CE} = -6V$, $I_C = 0.1mA$, f = 1kHz, Rg = 10kΩ | — | 1.0 | 10 | dB |

Note : $h_{FE}$ Classification O (O): 70~140, Y(Y): 120~240, GR (G): 200~400 ( ) Marking Symbol

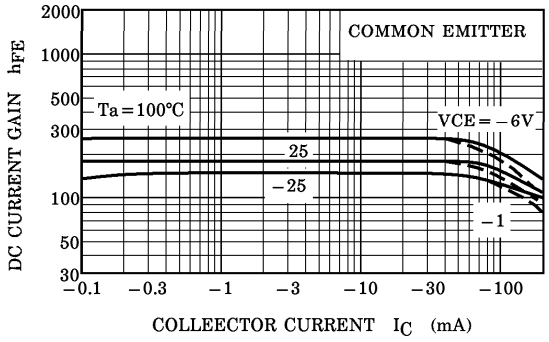
MARKING



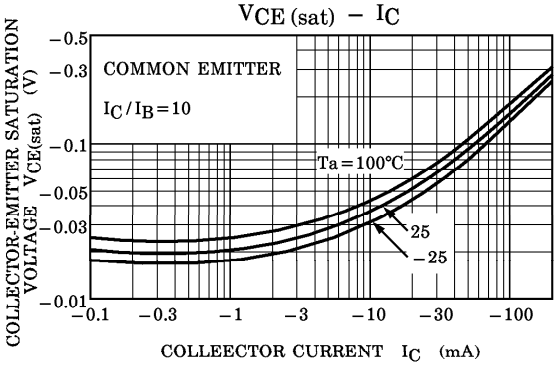
$I_C - V_{CE}$



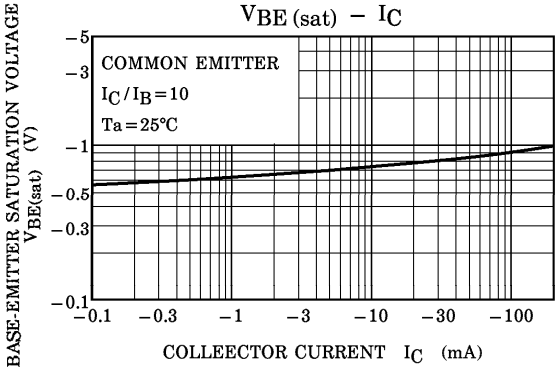

$h_{FE} - I_C$



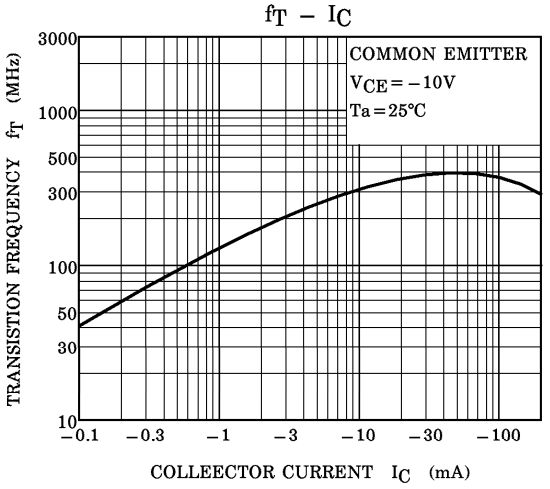

$V_{CE\,(sat)} - I_C$



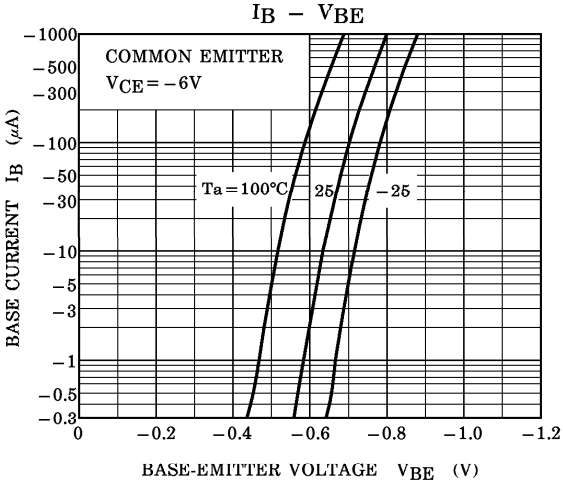

$V_{BE\,(sat)} - I_C$



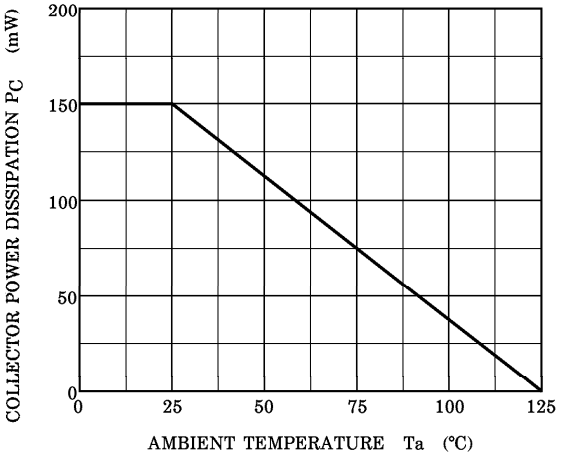

$f_T - I_C$




$I_B - V_{BE}$




$P_C - Ta$



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