TOSHIBA TRANSISTOR SILICON PNP TRIPLE DIFFUSED TYPE (PCT PROCESS)

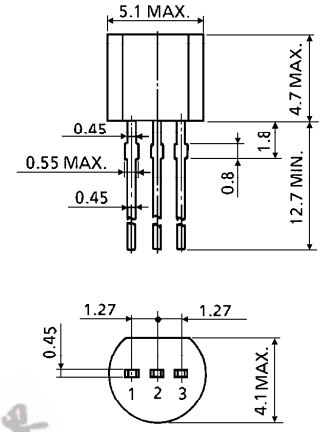
# 2SA1320

HIGH VOLTAGE SWITCHING APPLICATIONS

COLOR TV CHROMA OUTPUT APPLICATIONS

- High Voltage : $V_{CEO} = -250V$
- Low $C_{re}$ : 1.8pF (Max.)
- Complementary to 2SC3333

Unit in mm




1. EMITTER
2. COLLECTOR
3. BASE

| | |
|---|---|
| JEDEC | TO-92 |
| EIAJ | SC-43 |
| TOSHIBA | 2-5F1B |

Weight : 0.21g

MAXIMUM RATINGS (Ta = 25°C)

| CHARACTERISTIC | | SYMBOL | RATING | UNIT |
|---|---|---|---|---|
| Collector-Base Voltage | | $V_{CBO}$ | −250 | V |
| Collector-Emitter Voltage | | $V_{CEO}$ | −250 | V |
| Emitter-Base Voltage | | $V_{EBO}$ | −5 | V |
| Collector Current | DC | $I_C$ | −50 | mA |
| | Pulsed | $I_{CP}$ | −100 | |
| Base Current | | $I_B$ | −20 | mA |
| Collector Power Dissipation | | $P_C$ | 0.6 | W |
| Junction Temperature | | $T_j$ | 150 | °C |
| Storage Temperature Range | | $T_{stg}$ | −55~150 | °C |

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|
| Collector Cut-off Current | $I_{CBO}$ | $V_{CB} = -200V$, $I_E = 0$ | — | — | −0.1 | μA |
| Emitter Cut-off Current | $I_{EBO}$ | $V_{EB} = -5V$, $I_C = 0$ | — | — | −0.1 | μA |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C = -1mA$, $I_B = 0$ | −250 | — | — | V |
| DC Current Gain | $h_{FE}$ | $V_{CE} = -20V$, $I_C = -25mA$ | 50 | — | — | |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = -10mA$, $I_B = -1mA$ | — | — | −1.5 | V |
| Base-Emitter Voltage | $V_{BE}$ | $V_{CE} = -20V$, $I_C = -25mA$ | — | −0.75 | — | V |
| Transition Frequency | $f_T$ | $V_{CE} = -10V$, $I_C = -10mA$ | 60 | 80 | — | MHz |
| Reverse Transfer Capacitance | $C_{re}$ | $V_{CB} = -30V$, $I_E = 0$, f = 1MHz | — | — | 1.8 | pF |

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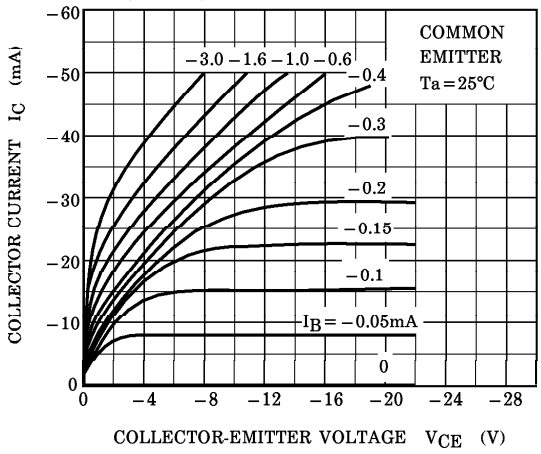
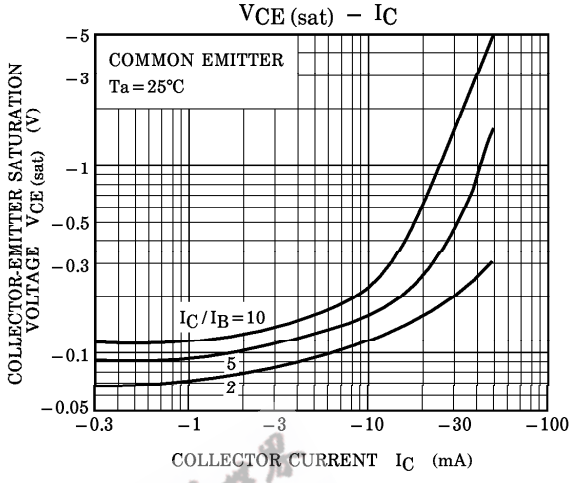
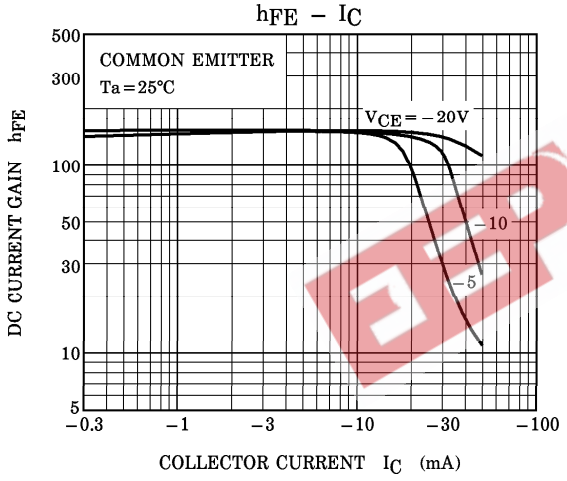
$I_C$ – $V_{CE}$ (LOW VOLTAGE REGION)



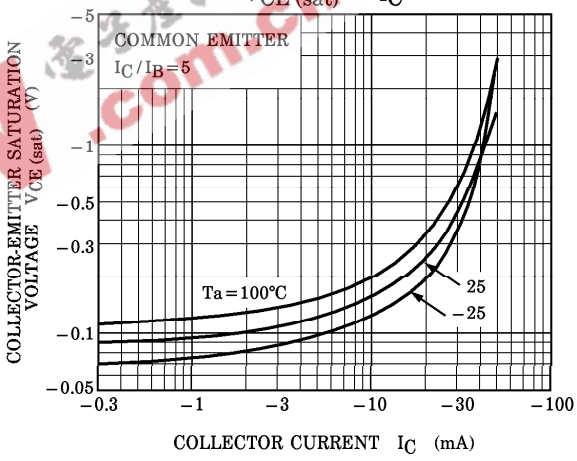

$V_{CE}$ (sat) – $I_C$



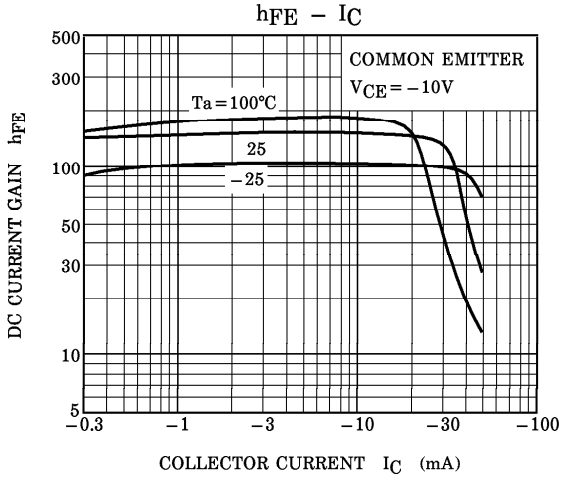

$h_{FE}$ – $I_C$



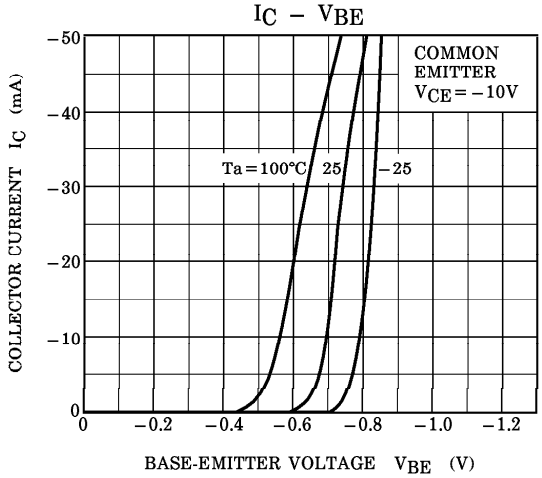

$V_{CE}$ (sat) – $I_C$



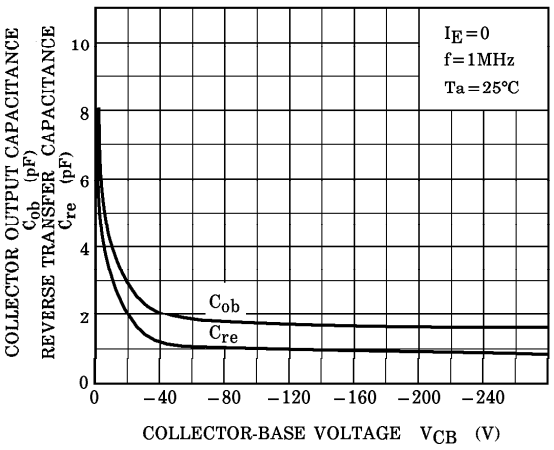

$h_{FE}$ – $I_C$



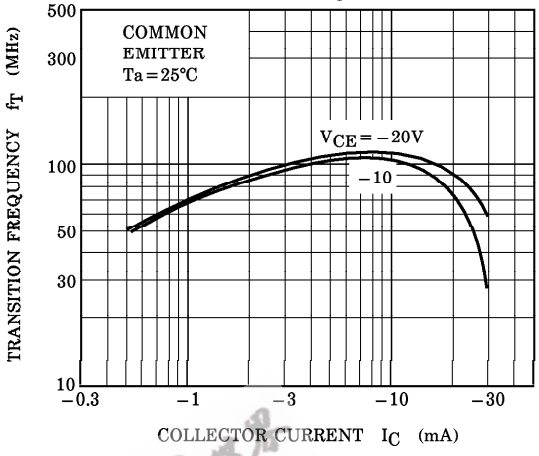

$I_C$ – $V_{BE}$



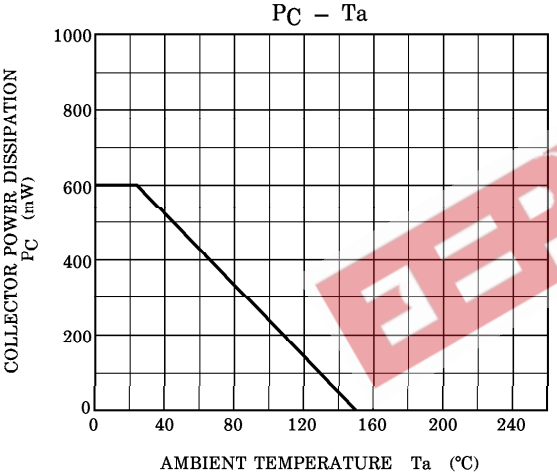
$C_{ob}$·$C_{re}$ – $V_{CB}$




$f_T$ – $I_C$




$P_C$ – Ta




SAFE OPERATING AREA