TOSHIBA TRANSISTOR SILICON PNP TRIPLE DIFFUSED TYPE (PCT PROCESS)

# 2SA1432

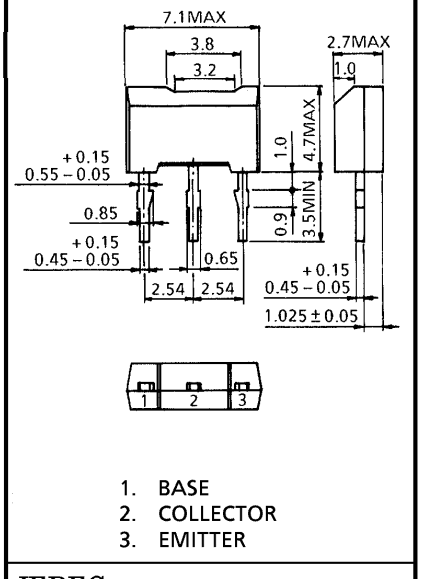
HIGH VOLTAGE CONTROL APPLICATIONS

PLASMA DISPLAY, NIXIE TUBE DRIVER APPLICATIONS

CATHODE RAY TUBE BRIGHTNESS CONTROL APPLICATIONS

- High Voltage : $V_{CBO} = -300$ V, $V_{CEO} = -300$ V
- Low Saturation Voltage : $V_{CE\,(sat)} = -0.5$ V (Max.)
- Small Collector Output Capacitance : $C_{ob} = 6$ pF (Typ.)
- Complementary to 2SC3672

Unit in mm




1. BASE
2. COLLECTOR
3. EMITTER

| | |
|---|---|
| JEDEC | — |
| EIAJ | — |
| TOSHIBA | 2-7D101A |

Weight : 0.2 g

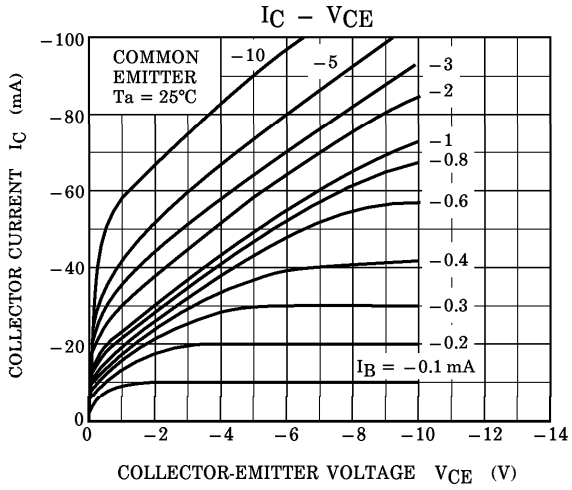
MAXIMUM RATINGS (Ta = 25°C)

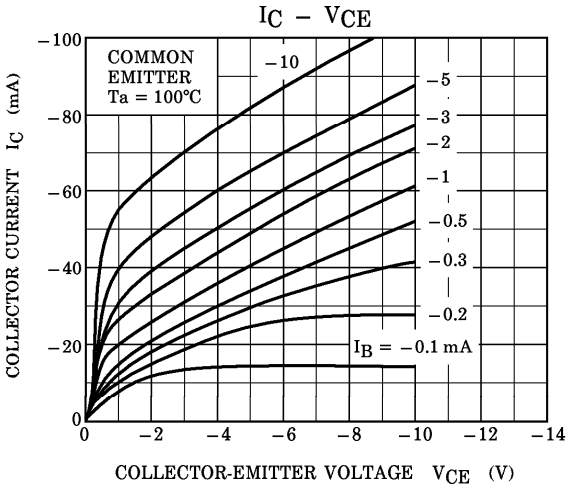
| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | −300 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | −300 | V |
| Emitter-Base Voltage | $V_{EBO}$ | −8 | V |
| Collector Current | $I_C$ | −100 | mA |
| Base Current | $I_B$ | −20 | mA |
| Collector Power Dissipation | $P_C$ | 1000 | mW |
| Junction Temperature | $T_j$ | 150 | °C |
| Storage Temperature Range | $T_{stg}$ | −55~150 | °C |

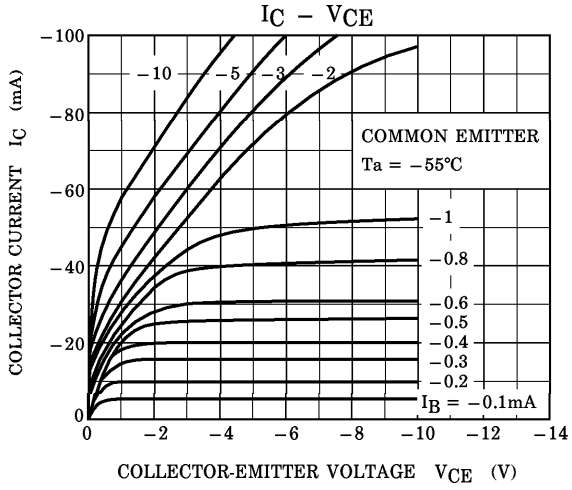
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

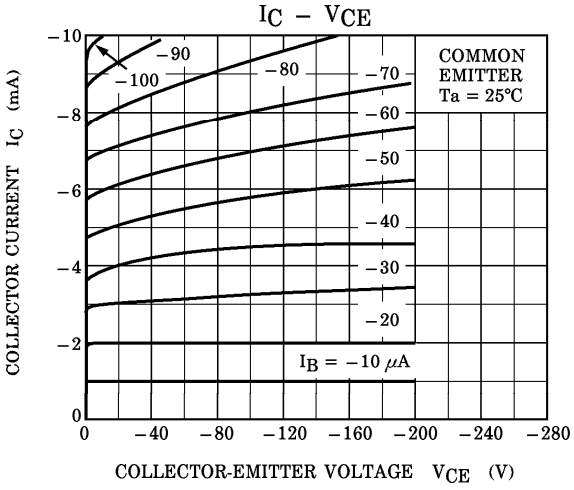
| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|
| Collector Cut-off Current | $I_{CBO}$ | $V_{CB} = -300$ V, $I_E = 0$ | — | — | −0.1 | μA |
| Emitter Cut-off Current | $I_{EBO}$ | $V_{EB} = -8$ V, $I_C = 0$ | — | — | −0.1 | μA |
| Collector-Emitter Breakdown Voltage | $V_{(BR)\,CBO}$ | $I_C = -0.1$ mA, $I_E = 0$ | −300 | — | — | V |
| Collector-Emitter Breakdown Voltage | $V_{(BR)\,CEO}$ | $I_C = -1$ mA, $I_B = 0$ | −300 | — | — | V |
| DC Current Gain | $h_{FE\,(1)}$ (Note) | $V_{CE} = -10$ V, $I_C = -20$ mA | 30 | — | 150 | |
| | $h_{FE\,(2)}$ | $V_{CE} = -10$ V, $I_C = -1$ mA | 20 | — | — | |
| Collector-Emitter Saturation Voltage | $V_{CE\,(sat)}$ | $I_C = -20$ mA, $I_B = -2$ mA | — | — | −0.5 | V |
| Base-Emitter Saturation Voltage | $V_{BE\,(sat)}$ | $I_C = -20$ mA, $I_B = -2$ mA | — | — | −1.2 | V |
| Transition Frequency | $f_T$ | $V_{CE} = -10$ V, $I_C = -20$ mA | 40 | 60 | — | MHz |
| Collector Output Capacitance | $C_{ob}$ | $V_{CB} = -20$ V, $I_E = 0$, f = 1 MHz | — | 6 | 8 | pF |

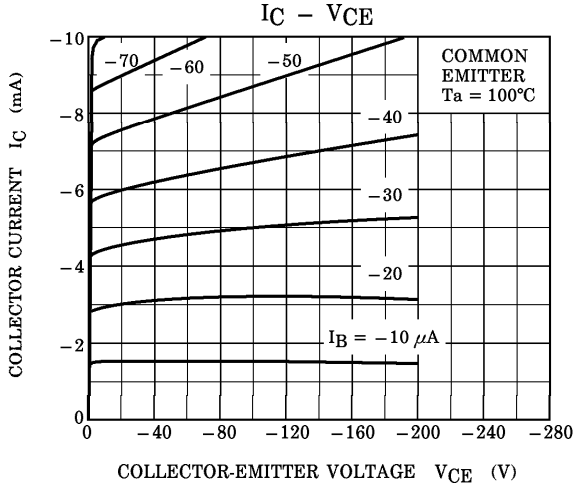
(Note) : $h_{FE\,(1)}$ Classification R : 30~90, O : 50~150

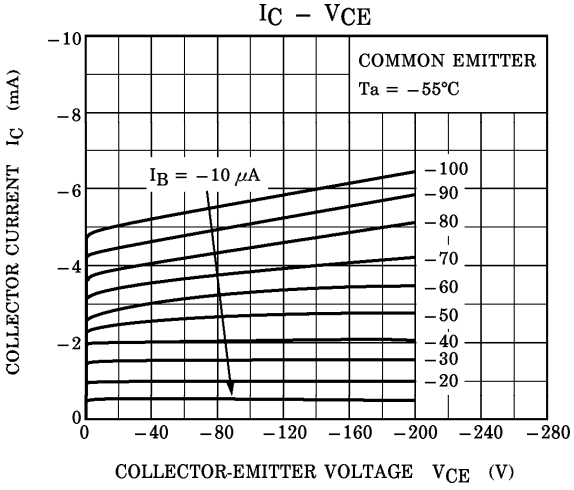

$I_C - V_{CE}$
COMMON EMITTER
Ta = 25°C
−10
−5
−3
−2
−1
−0.8
−0.6
−0.4
−0.3
−0.2
$I_B$ = −0.1 mA
COLLECTOR CURRENT $I_C$ (mA)
COLLECTOR-EMITTER VOLTAGE $V_{CE}$ (V)


$I_C - V_{CE}$
COMMON EMITTER
Ta = 100°C
−10
−5
−3
−2
−1
−0.5
−0.3
−0.2
$I_B$ = −0.1 mA
COLLECTOR CURRENT $I_C$ (mA)
COLLECTOR-EMITTER VOLTAGE $V_{CE}$ (V)

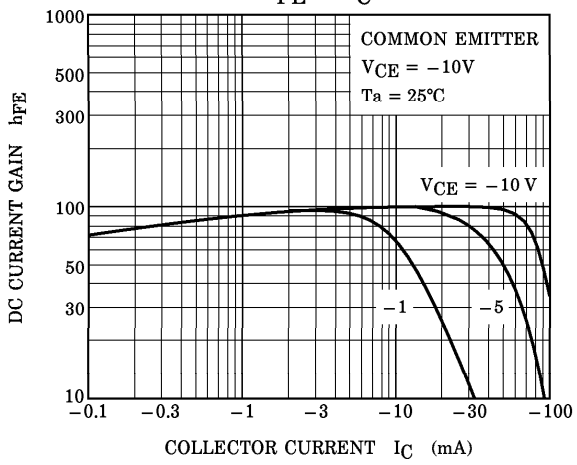

$I_C - V_{CE}$
COMMON EMITTER
Ta = −55°C
−10
−5
−3
−2
−1
−0.8
−0.6
−0.5
−0.4
−0.3
−0.2
$I_B$ = −0.1mA
COLLECTOR CURRENT $I_C$ (mA)
COLLECTOR-EMITTER VOLTAGE $V_{CE}$ (V)


$I_C - V_{CE}$
COMMON EMITTER
Ta = 25°C
−90
−100
−80
−70
−60
−50
−40
−30
−20
$I_B$ = −10 μA
COLLECTOR CURRENT $I_C$ (mA)
COLLECTOR-EMITTER VOLTAGE $V_{CE}$ (V)

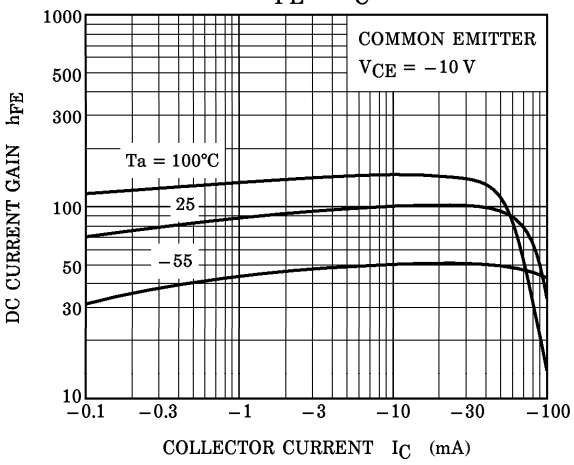

$I_C - V_{CE}$
COMMON EMITTER
Ta = 100°C
−70
−60
−50
−40
−30
−20
$I_B$ = −10 μA
COLLECTOR CURRENT $I_C$ (mA)
COLLECTOR-EMITTER VOLTAGE $V_{CE}$ (V)


$I_C - V_{CE}$
COMMON EMITTER
Ta = −55°C
$I_B$ = −10 μA
−100
−90
−80
−70
−60
−50
−40
−30
−20
COLLECTOR CURRENT $I_C$ (mA)
COLLECTOR-EMITTER VOLTAGE $V_{CE}$ (V)

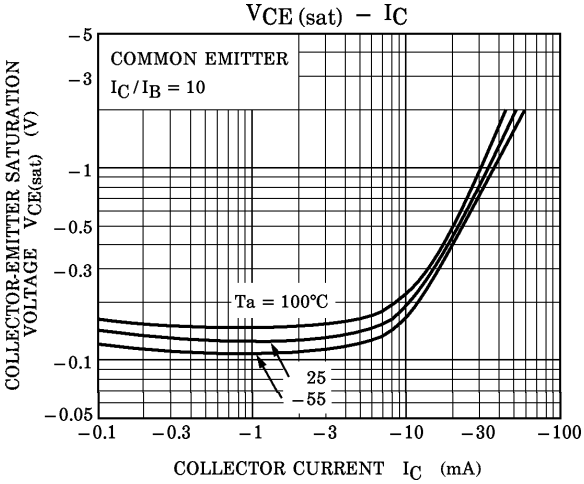
$h_{FE}$ – $I_C$



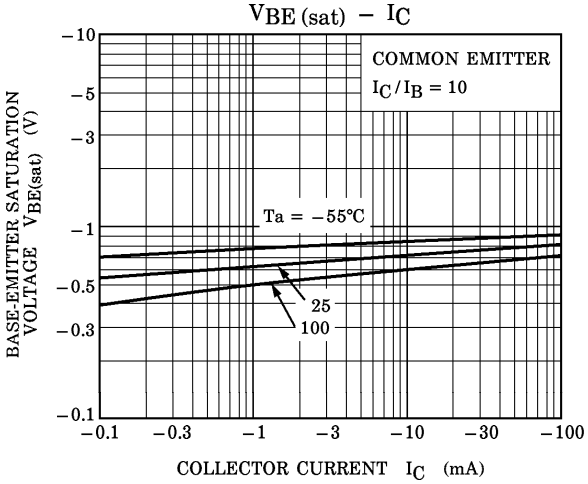

$h_{FE}$ – $I_C$



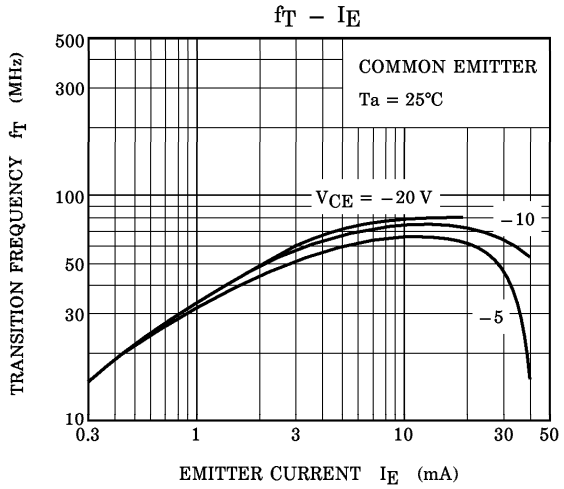

$V_{CE\,(sat)}$ – $I_C$



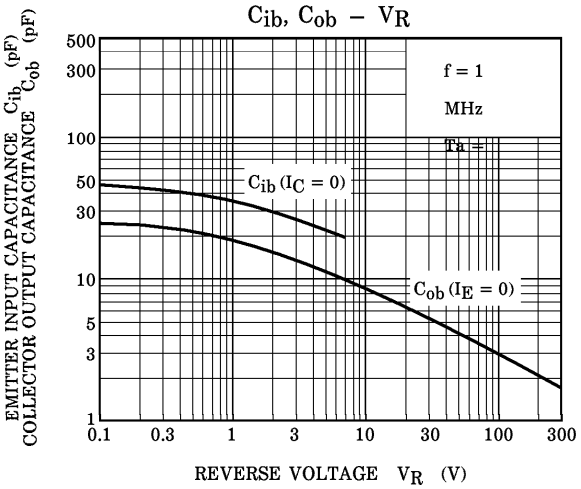

$V_{BE\,(sat)}$ – $I_C$



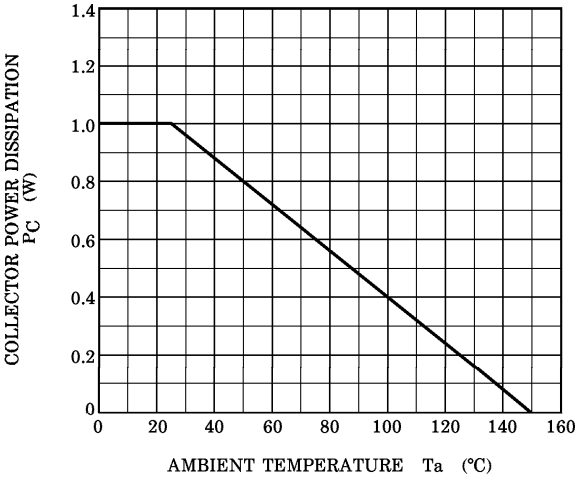

$f_T$ – $I_E$



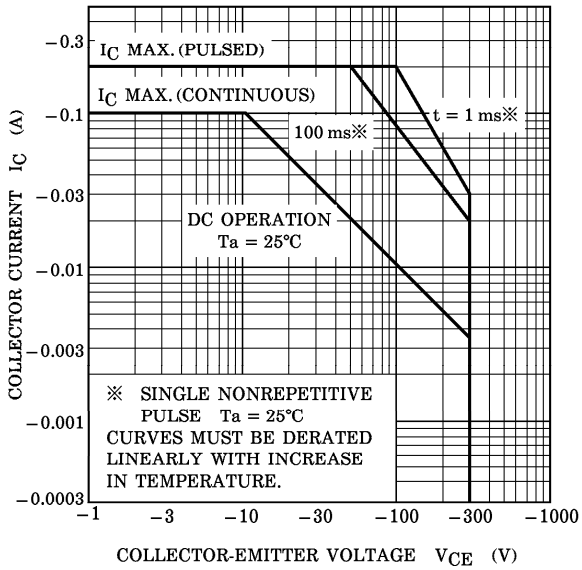

$C_{ib}$, $C_{ob}$ – $V_R$



$P_C$ – Ta




SAFE OPERATING AREA



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