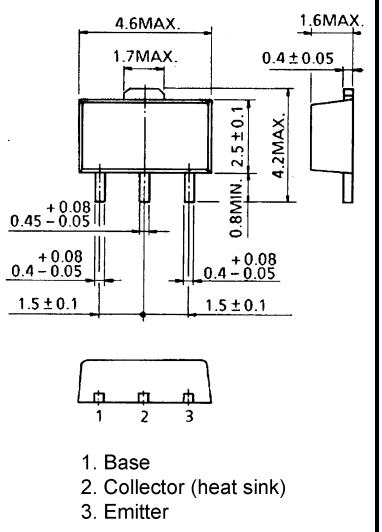
TOSHIBA Transistor Silicon PNP Triple Diffused Type (PCT process)

2SA1384

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 2SC3515
- Small flat package
- P_C = 1.0 to 2.0 W (mounted ceramic substrate)

Unit: mm



1. Base
2. Collector (heat sink)
3. Emitter

PW-MINI	
JEDEC	—
JEITA	SC-62
TOSHIBA	2-5K1A

Weight: 0.05 g (typ.)

Maximum Ratings (Ta = 25°C)

Characteristics	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	500	mW
	P_C (Note 1)	1000	
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	−55 to 150	°C

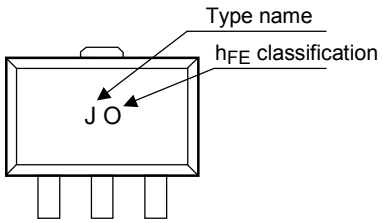
Note 1: 2SA1384 mounted on ceramic substrate (250 mm^2 × 0.8 t)

Electrical Characteristics (Ta = 25°C)

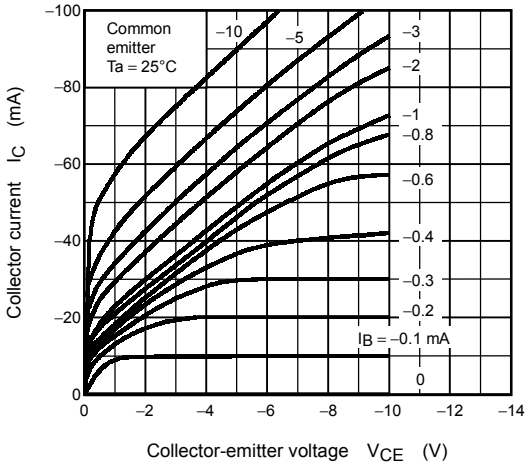
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	V_{CB} = −300 V, I_E = 0	—	—	−0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB} = −8 V, I_C = 0	—	—	−0.1	μA
Collector-base breakdown voltage	$V_{(BR)\ CBO}$	I_C = −0.1 mA, I_E = 0	−300	—	—	V
Collector-emitter breakdown voltage	$V_{(BR)\ CEO}$	I_C = −1 mA, I_B = 0	−300	—	—	V
DC current gain	$h_{FE\ (1)}$ (Note 2)	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	—	—	−1.0	V
Transition frequency	f_T	V_{CE} = −10 V, I_C = −20 mA	50	70	—	MHz
Collector output capacitance	C_{ob}	V_{CB} = −20 V, I_E = 0, f = 1 MHz	—	6	8	pF

Note 2: $h_{FE\ (1)}$ classification R: 30 to 90, O: 50 to 150

Marking



$I_C - V_{CE}$
(low voltage region)



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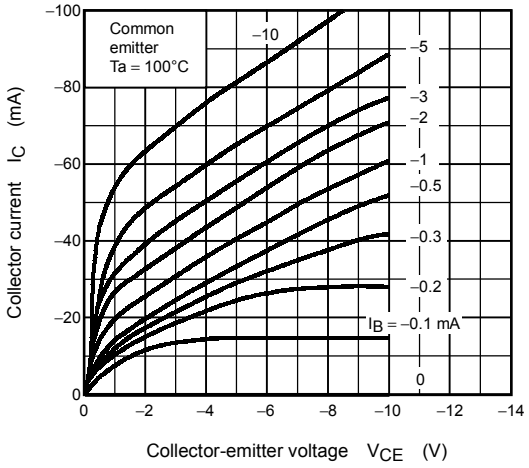
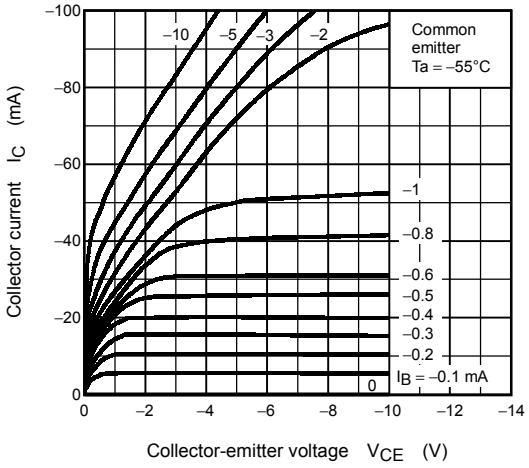
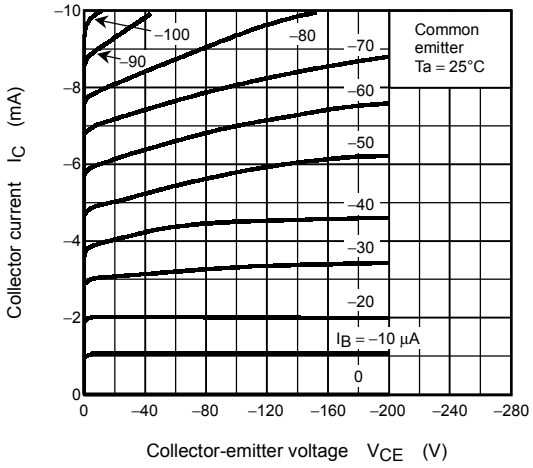


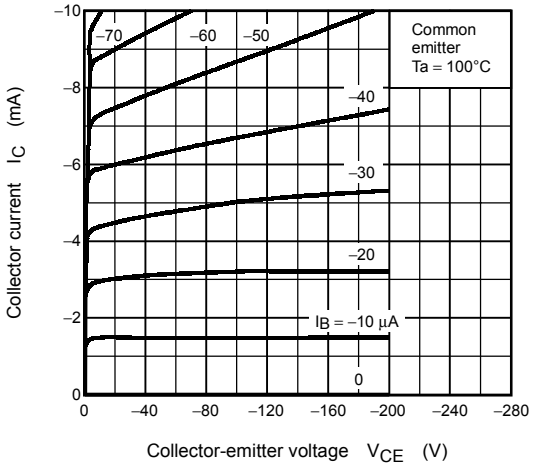
$I_C - V_{CE}$
(low voltage region)



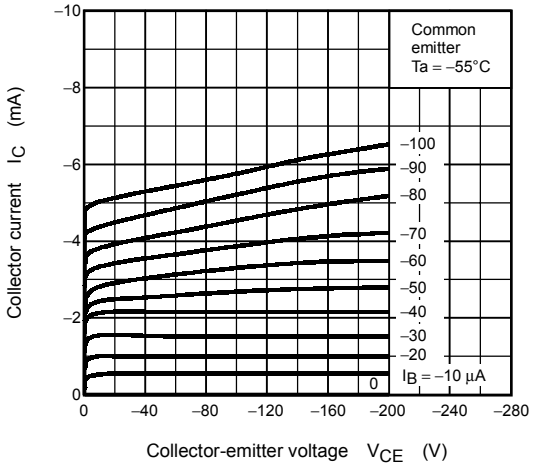
$I_C - V_{CE}$
(low current region)



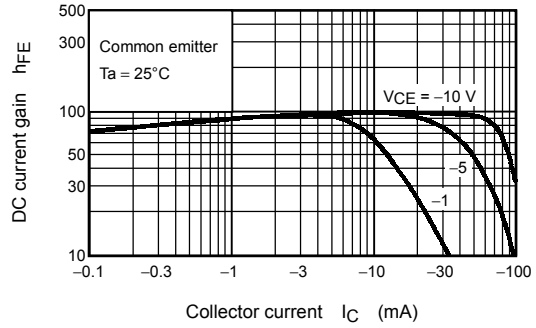
$I_C - V_{CE}$
(low current region)



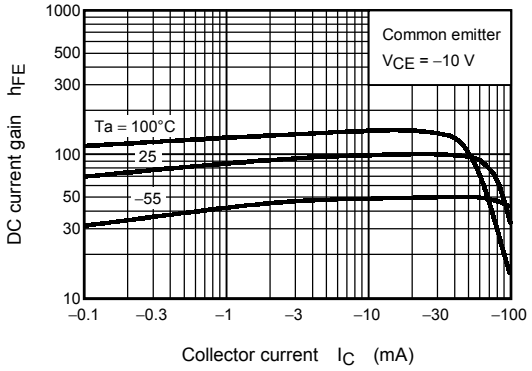
$I_C - V_{CE}$
(low current region)



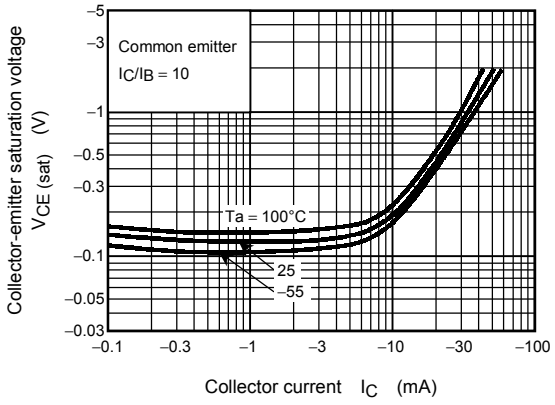
$h_{FE} - I_C$



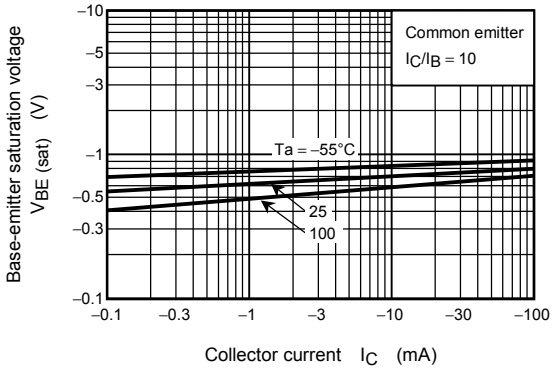
$h_{FE} - I_C$



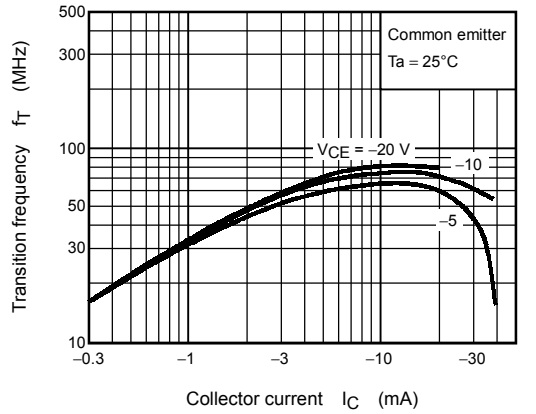
$V_{CE\ (sat)} - I_C$



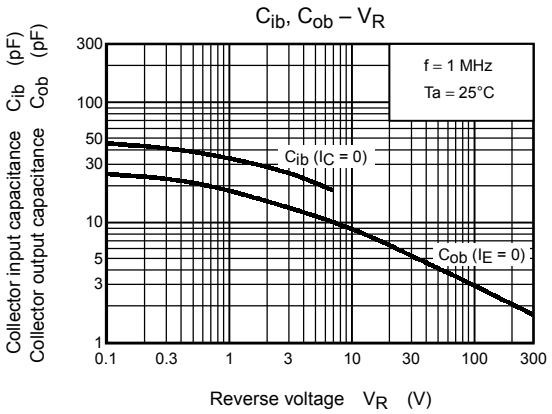
$V_{BE\ (sat)} - I_C$



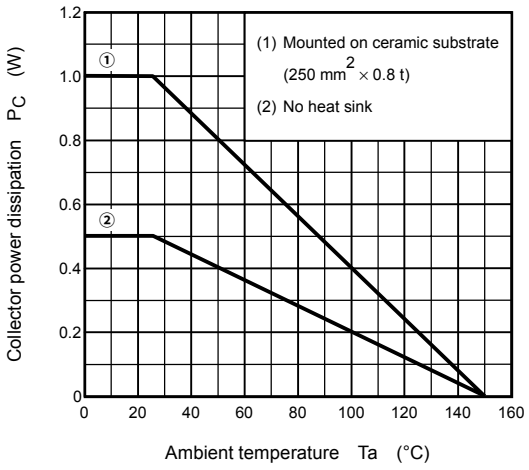
$f_T - I_C$



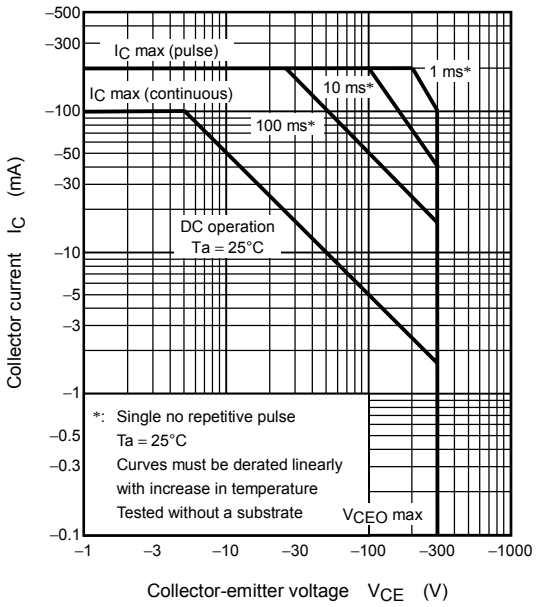
$C_{ib}, C_{ob} - V_R$



P_C – Ta



Safe Operating Area



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