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TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT process)

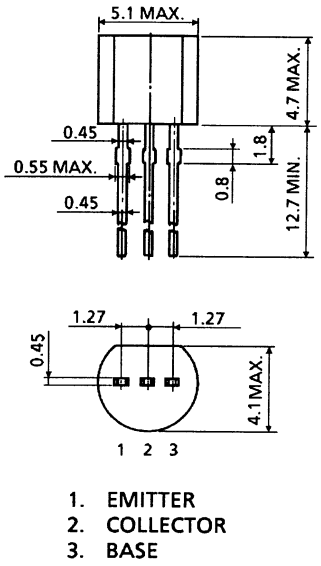
2SC2551

Industrial Applications

Hight 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} = 3 pF (typ.)
- Complementary to 2SA1091.

Unit: mm



JEDEC	TO-92
JEITA	SC-43
TOSHIBA	2-5F1B

Weight: 0.21 g (typ.)

Absolute 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}	6	V
Collector current	I_C	100	mA
Base current	I_B	20	mA
Collector power dissipation	P_C	400	mW
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	−55~150	°C

Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings. Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook (“Handling Precautions”/“Derating Concept and Methods”) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

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} = 6 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)	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	50	80	—	MHz
Collector output capacitance	C_{ob}	V_{CB} = 20 V, I_E = 0, f = 1 MHz	—	3	4	pF

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

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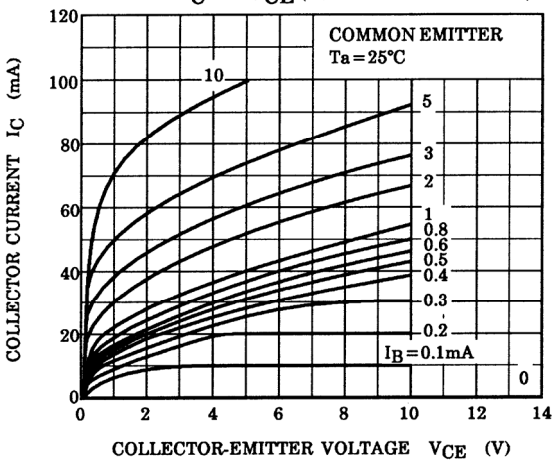
I_C – V_{CE} (LOW VOLTAGE REGION)



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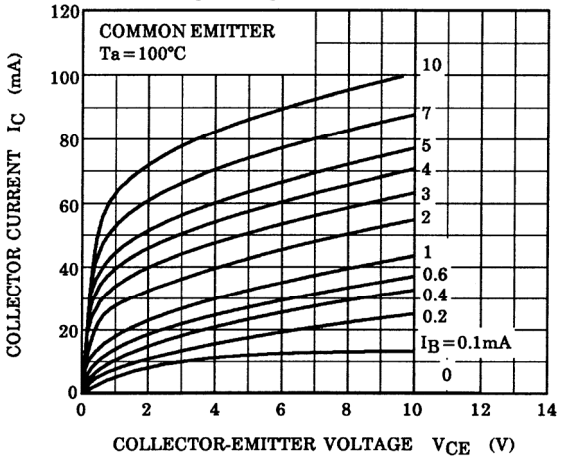

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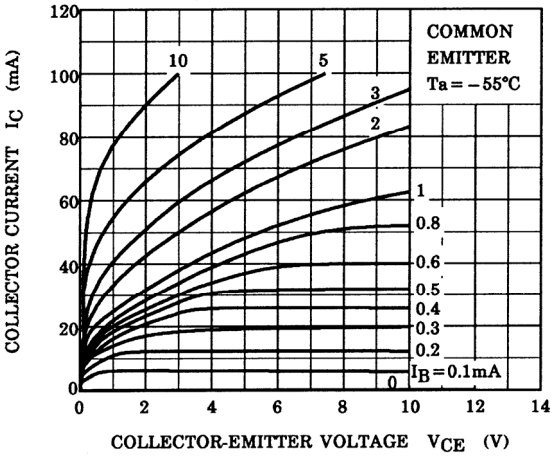

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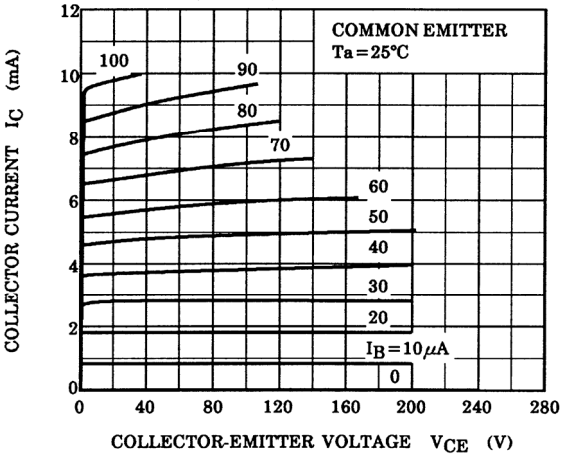

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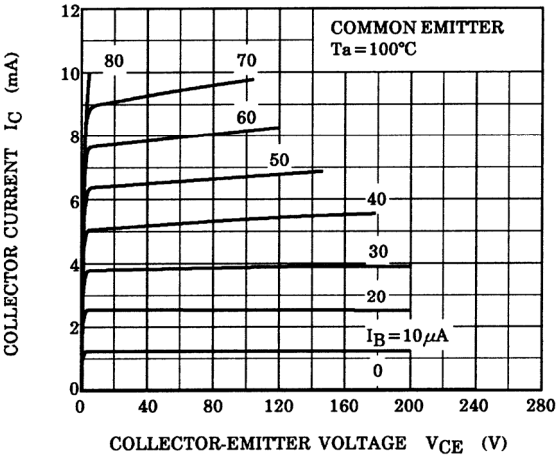

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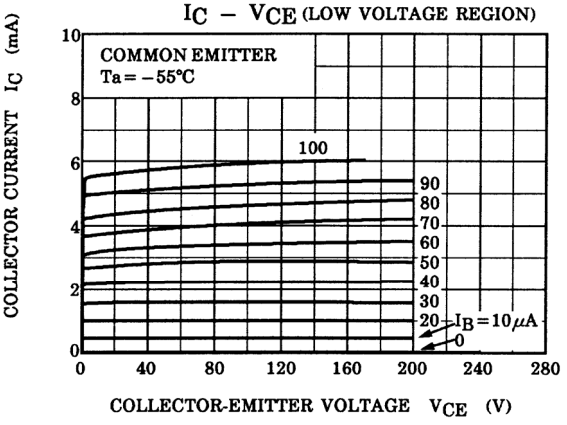

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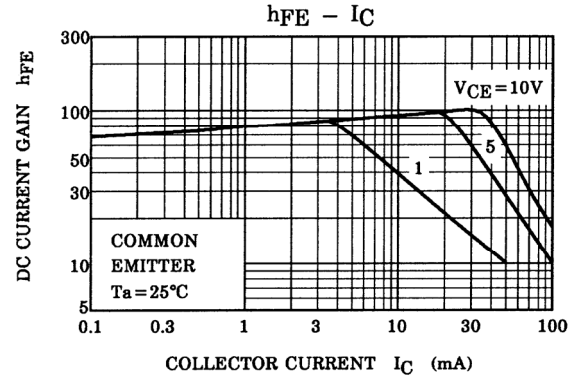
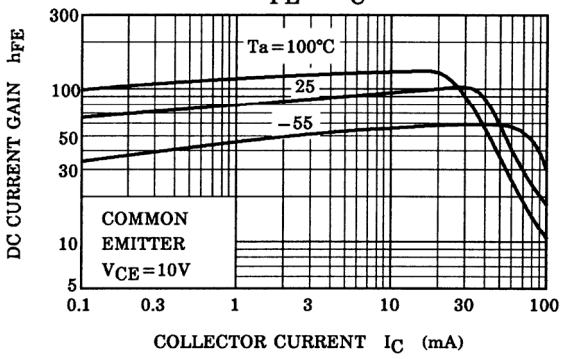
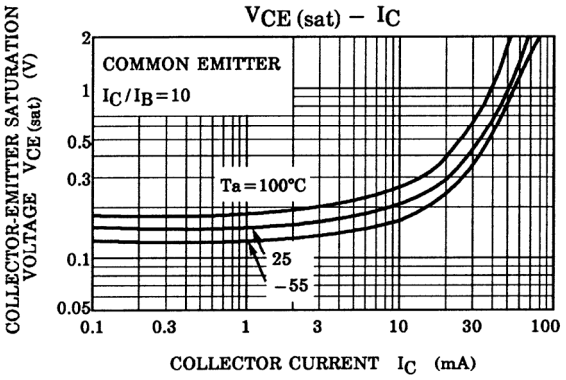
h_{FE} – I_C



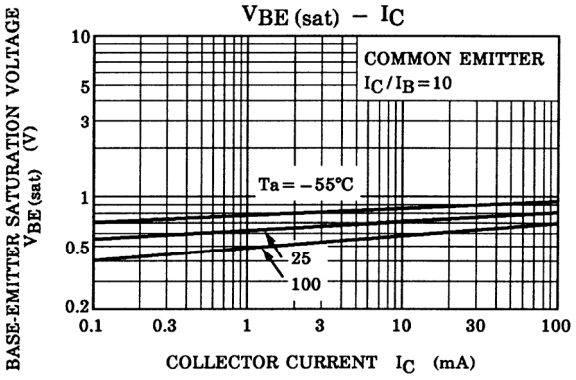
h_{FE} – I_C



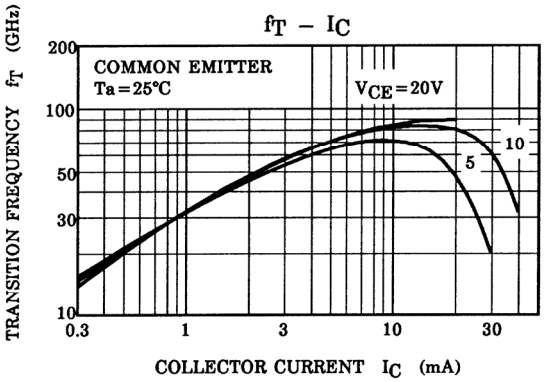
$V_{CE\,(sat)}$ – I_C



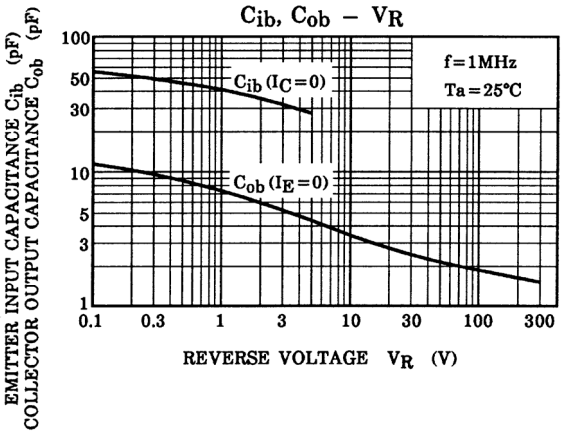
$V_{BE\,(sat)}$ – I_C



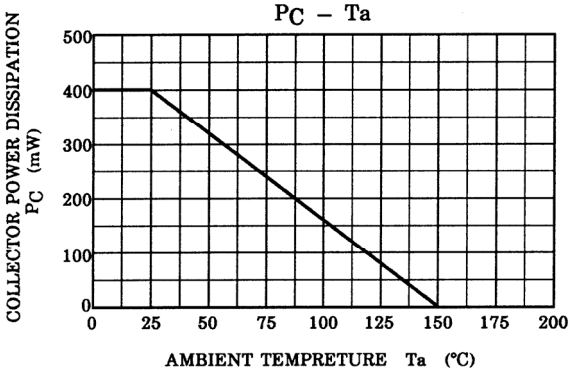
f_T – I_C



C_{ib}, C_{ob} – V_R



P_C – Ta



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20070701-EN GENERAL

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