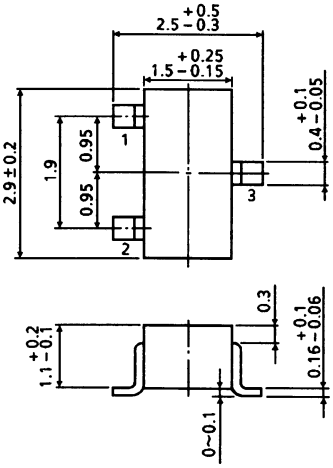
TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT process)

2SA1721

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} = 5.5 pF (typ.)
- Complementary to 2SC4497

Unit: mm



1. BASE
2. EMITTER
3. COLLECTOR

S-MINI	
JEDEC	TO-236MOD
JEITA	SC-59
TOSHIBA	2-3F1A

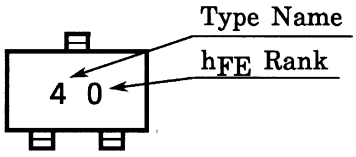
Weight: 0.012 g (typ.)

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}	−5	V
Collector current	I_C	−100	mA
Base current	I_B	−20	mA
Collector power dissipation	P_C	150	mW
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	−55 to 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).

Marking



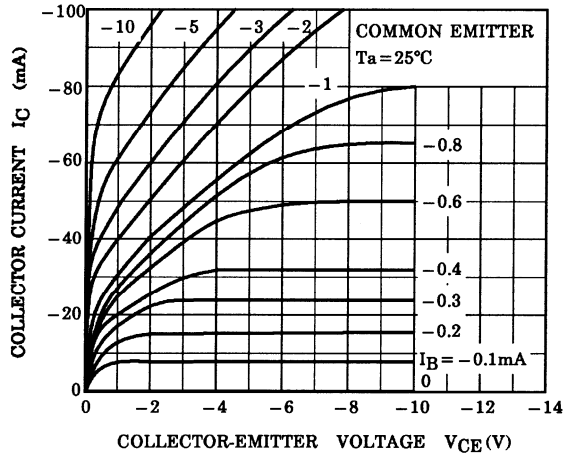
Start of commercial production
1988-09

Electrical Characteristics (Ta = 25°C)

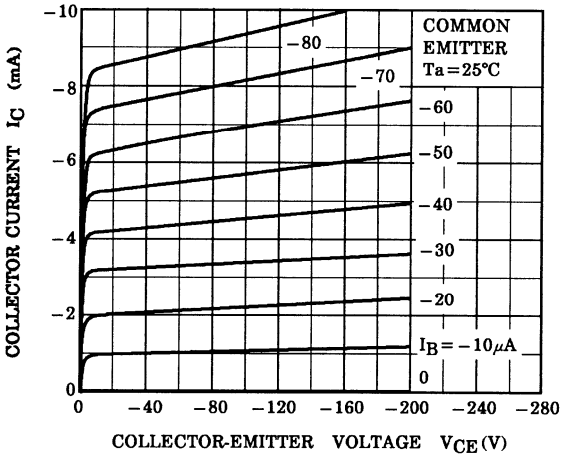
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	V_{CB} = −300 V, I_E = 0	—	—	−0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB} = −5 V, I_C = 0	—	—	−0.1	μA
Collector-base breakdown voltage	$V_{(BR)\ CBO}$	I_C = −0.1 mA, I_E = −0	−300	—	—	V
Collector-emitter breakdown 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	55	—	MHz
Collector output capacitance	C_{ob}	V_{CB} = −20 V, I_E = 0, f = 1 MHz	—	5.5	6.0	pF

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

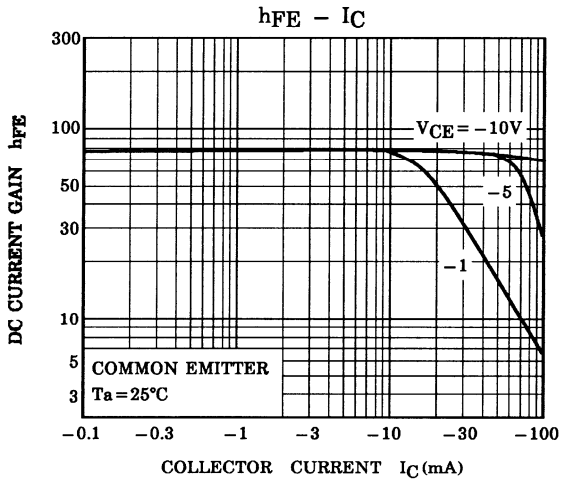
$I_C - V_{CE}$ (LOW VOLTAGE REGION)



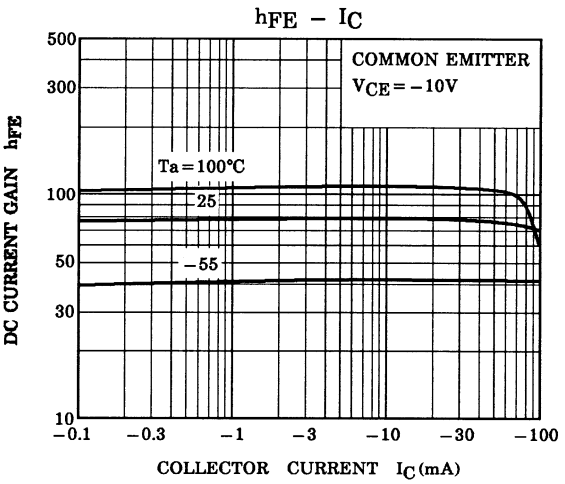
$I_C - V_{CE}$ (LOW CURRENT REGION)



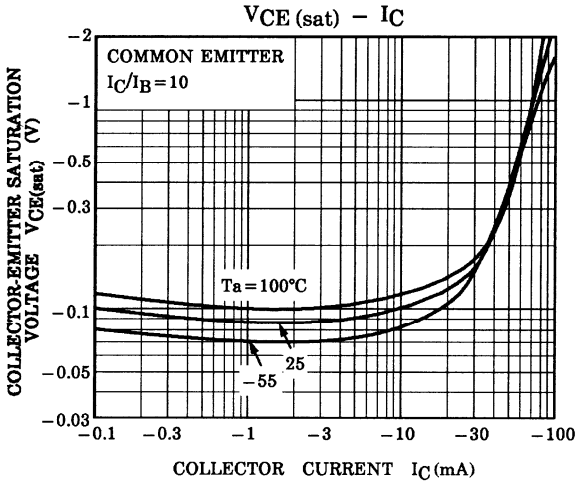
$h_{FE} - I_C$



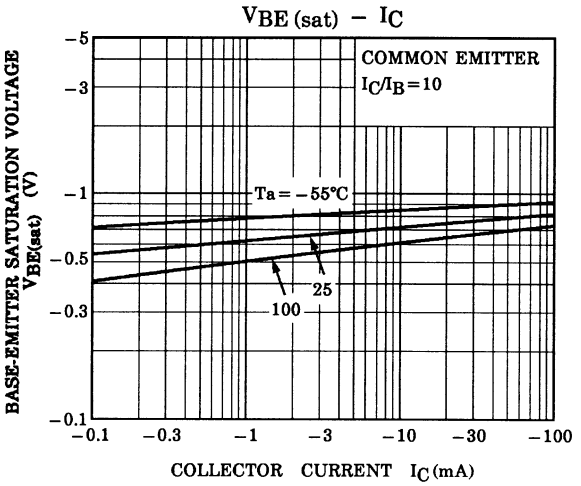
$h_{FE} - I_C$

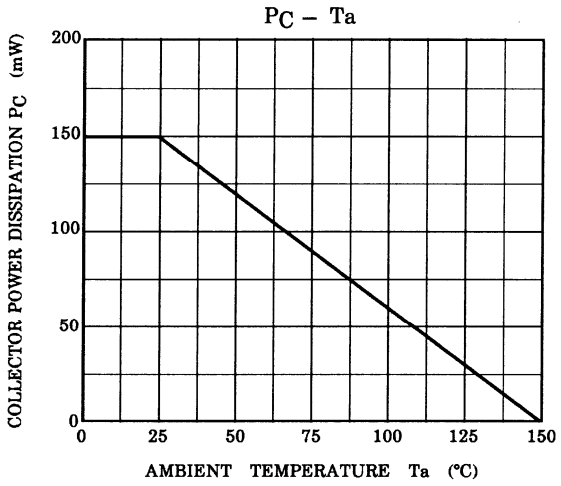


$V_{CE\,(sat)} - I_C$



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




P_C – Ta
COLLECTOR POWER DISSIPATION P_C (mW)
200
150
100
50
0
0
25
50
75
100
125
150
AMBIENT TEMPERATURE Ta (°C)

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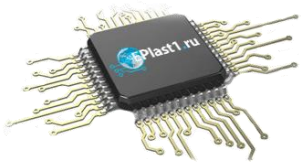

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