

TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT process) (Bias Resistor Built-in Transistor)

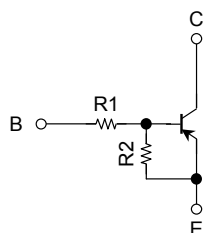
RN2975

Switching, Inverter Circuit, Interface Circuit and Driver Circuit Applications.

Unit: mm

- Two devices are incorporated into an Ultra-Super-Mini (6-pin) package
- Incorporating a bias resistor into a transistor reduces the parts count.
Reducing the parts count enables the manufacture of ever more compact equipment and lowers assembly cost.

Equivalent Circuit and Bias Resistor Values



R1: 2.2 k Ω (Q1, Q2 common)

R2: 10 k Ω (Q1, Q2 common)

Maximum Ratings (Ta = 25°C) (Q1, Q2 common)

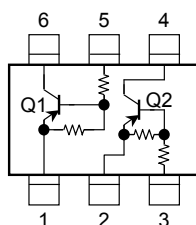
Characteristics	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	-50	V
Collector-emitter voltage	V_{CEO}	-50	V
Emitter-base voltage	V_{EBO}	-6	V
Collector current	I_C	-100	mA
Collector power dissipation	P_C (Note)	200	mW
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	-55~150	°C

Note: Total rating

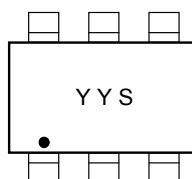
1. EMITTER 1 (E1)	
2. EMITTER 2 (E2)	
3. BASE 2 (B2)	
4. COLLECTOR 2 (C2)	
5. BASE 1 (B1)	
6. COLLECTOR 1 (C1)	
US6	
JEDEC	—
JEITA	—
TOSHIBA	2-2J1B

Weight: 0.0068 g (typ.)

Equivalent Circuit (top view)

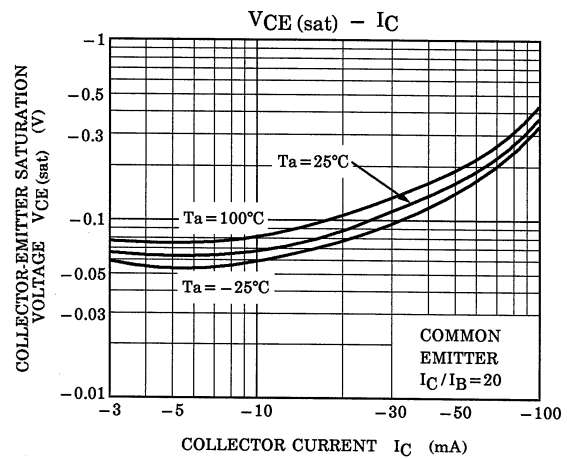
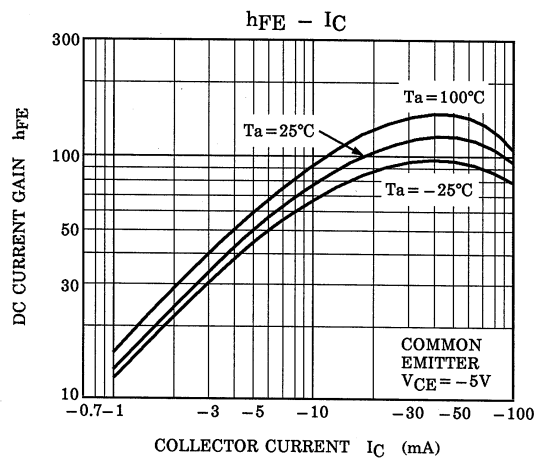
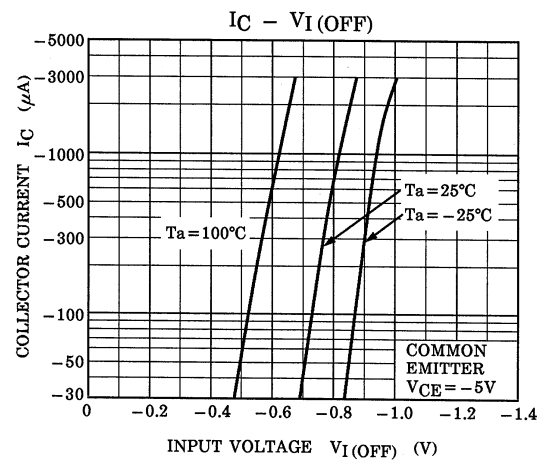
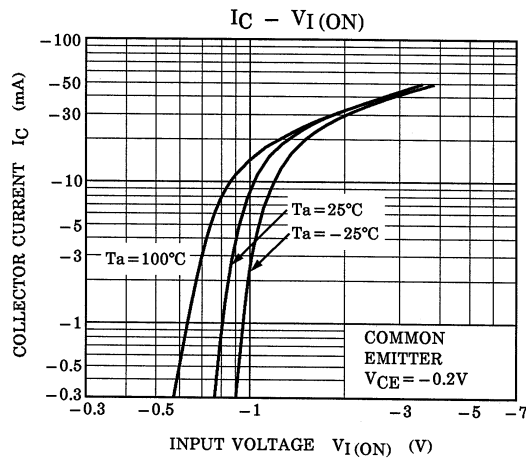


Marking



Electrical Characteristics (Ta = 25°C) (Q1, Q2 common)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	$V_{CB} = -50\text{ V}, I_E = 0$	—	—	-100	nA
	I_{CEO}	$V_{CE} = -50\text{ V}, I_B = 0$	—	—	-500	
Emitter cut-off current	I_{EBO}	$V_{EB} = -6\text{ V}, I_C = 0$	-0.37	—	-0.71	mA
DC current gain	h_{FE}	$V_{CE} = -5\text{ V}, I_C = -10\text{ mA}$	50	—	—	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -5\text{ mA}, I_B = -0.25\text{ mA}$	—	-0.1	-0.3	V
Input voltage (ON)	$V_{I(ON)}$	$V_{CE} = -0.2\text{ V}, I_C = -5\text{ mA}$	-0.6	—	-2.5	V
Input voltage (OFF)	$V_{I(OFF)}$	$V_{CE} = -5\text{ V}, I_C = -0.1\text{ mA}$	-0.3	—	-1.0	V
Input resistor	R1	—	1.54	2.2	2.86	k Ω
Resistor ratio	R1/R2	—	—	0.22	—	



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