

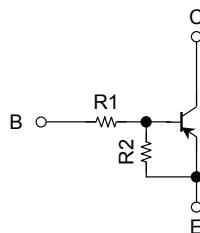
TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT process) (Bias Resistor Built-in Transistor)

# RN2975

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

- 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 kΩ (Q1, Q2 common)

R2: 10 kΩ (Q1, Q2 common)

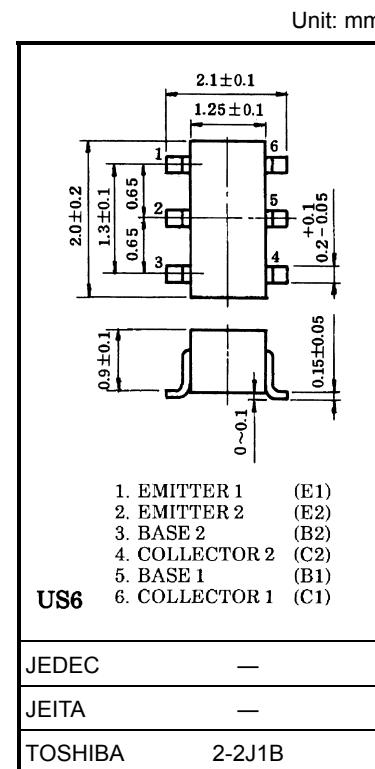
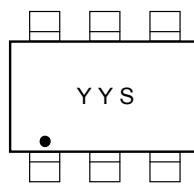
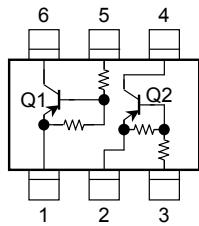
## Maximum Ratings (Ta = 25°C) (Q1, Q2 common)

Characteristics	Symbol	Rating	Unit
Collector-base voltage	V <sub>CBO</sub>	-50	V
Collector-emitter voltage	V <sub>CEO</sub>	-50	V
Emitter-base voltage	V <sub>EBO</sub>	-6	V
Collector current	I <sub>C</sub>	-100	mA
Collector power dissipation	P <sub>C</sub> (Note)	200	mW
Junction temperature	T <sub>j</sub>	150	°C
Storage temperature range	T <sub>stg</sub>	-55~150	°C

Note: Total rating

## Equivalent Circuit (top view)

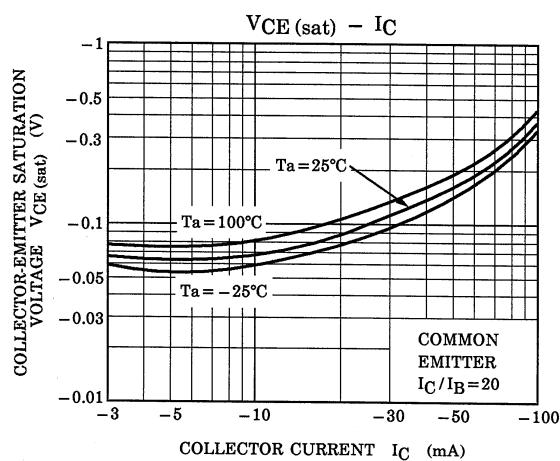
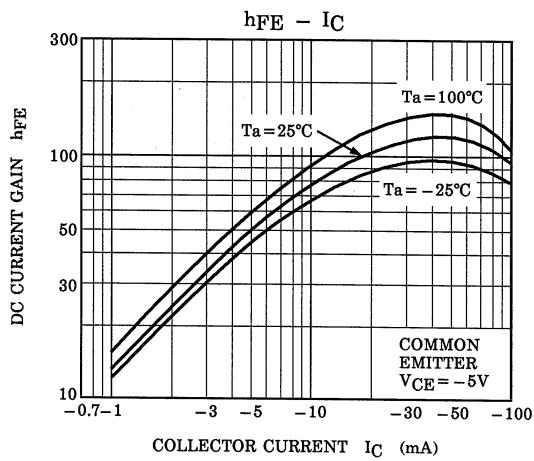
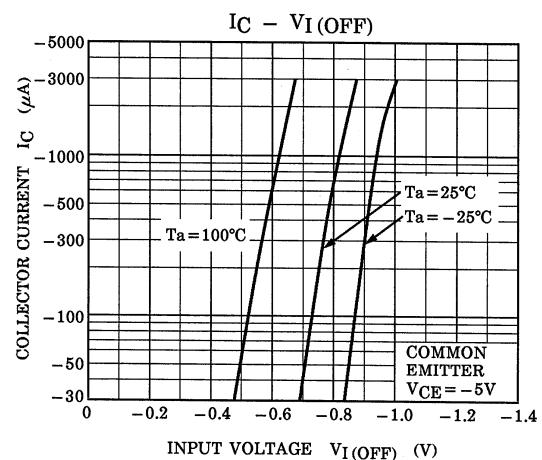
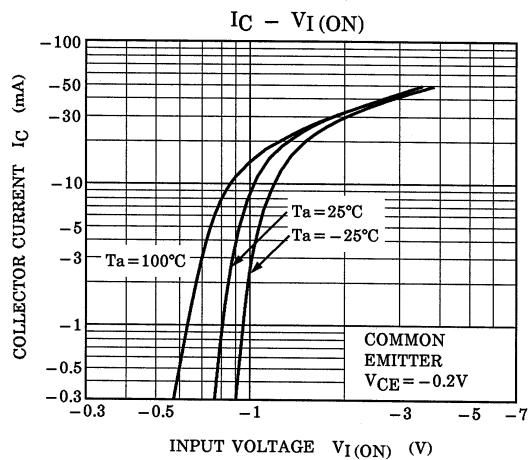
## Marking



Weight: 0.0068 g (typ.)

## 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	$V_{CE(\text{sat})}$	$I_C = -5\text{ mA}$ , $I_B = -0.25\text{ mA}$	—	-0.1	-0.3	V
Input voltage (ON)	$V_I(\text{ON})$	$V_{CE} = -0.2\text{ V}$ , $I_C = -5\text{ mA}$	-0.6	—	-2.5	V
Input voltage (OFF)	$V_I(\text{OFF})$	$V_{CE} = -5\text{ V}$ , $I_C = -0.1\text{ mA}$	-0.3	—	-1.0	V
Input resistor	$R_1$	—	1.54	2.2	2.86	k $\Omega$
Resistor ratio	$R_1/R_2$	—	—	0.22	—	



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