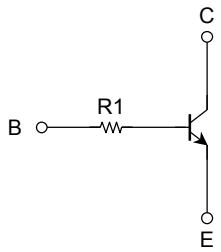
TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT process) (Bias Resistor built-in Transistor)

RN1973

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 parts count. Reducing the parts count enable the manufacture of ever more compact equipment and save assembly cost.

Equivalent Circuit and Bias Resistor Values



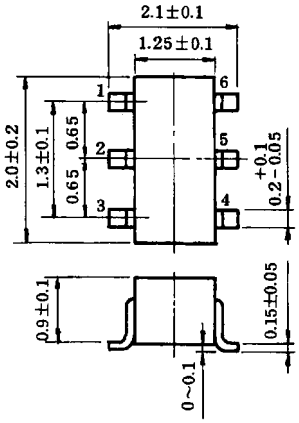
R1: 47 kΩ (Q1, Q2 common)

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}	5	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

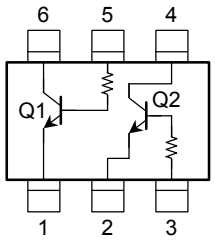
Unit: mm



JEDEC	—
JEITA	—
TOSHIBA	2-2J1B

Weight: g (typ.)

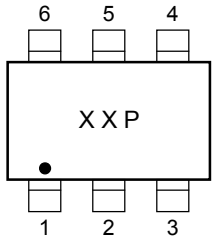
Equivalent Circuit (top view)



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 V, I_E = 0	—	—	100	nA
Emitter cut-off current	I_{EBO}	V_{EB} = 5 V, I_C = 0	—	—	100	nA
DC current gain	h_{FE}	V_{CE} = 5 V, I_C = 1 mA	120	—	700	
Collector-emitter saturation voltage	$V_{CE\ (sat)}$	I_C = 5 mA, I_B = 0.25 mA	—	0.1	0.3	V
Input resistor	R1	—	32.9	47	61.1	kΩ

Marking



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