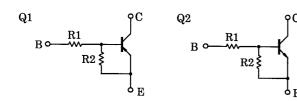
TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT Process) Silicon NPN Epitaxial Type (PCT Process)

RN4902

Switching, Inverter Circuit, Interface Circuit And Driver Circuit Applications

- Includeing two devices in US6 (ultra super mini type with 6 leads)
- With built-in bias resistors
- Simplify circuit design
- Reduce a quantity of parts and manufacturing process

Equivalent Circuit and Bias Resister Values



R1: 10kΩ R2: 10kΩ

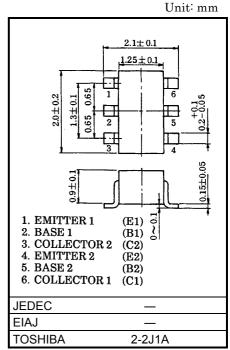
(Q1, Q2 Common)

Q1 Maximum Ratings (Ta = 25°C)

Characteristic	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	-50	V
Collector-emitter voltage	V_{CEO}	-50	٧
Emitter-base voltage	V_{EBO}	-10	٧
Collector current	IC	-100	mA

Q2 Maximum Ratings (Ta = 25°C)

Characteristic	Symbol	Rating	Unit
Collector-base voltage	V _{CBO}	50	V
Collector-emitter voltage	V _{CEO}	50	V
Emitter-base voltage	V _{EBO}	10	V
Collector current	IC	100	mA



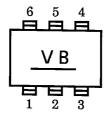
Weight: 6.8mg

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

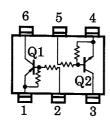
Characteristic	Symbol	Rating	Unit
Collector power dissipation	P _C *	200	mW
Junction temperature	Tj	150	°C
Storage temperature range	T _{stg}	-55~150	°C

^{*} Total rating

Marking



Equivalent Circuit (Top View)



Q1 Electrical Characteristics (Ta = 25°C)

Characteristic	Symbol	Test Circuit	Test Condition	Min	Тур.	Max	Unit
Collector cut-off current	I _{CBO}	_	$V_{CB} = -50V$, $I_E = 0$	-	-	-100	nA
	I _{CEO}	_	$V_{CE} = -50V$, $I_B = 0$	-	_	-500	IIA
Emitter cut-off current	I _{EBO}	_	$V_{EB} = -10V, I_C = 0$	-0.38	_	-0.71	mA
DC current gain	h _{FE}	_	$V_{CE} = -5V$, $I_{C} = -10$ mA	50	_	_	_
Collector-emitter saturation voltage	V _{CE (sat)}	_	$I_C = -5mA$, $I_B = -0.25mA$	_	-0.1	-0.3	V
Input voltage (ON)	V _{I (ON)}	_	$V_{CE} = -0.2V$, $I_{C} = -5mA$	-1.2	_	-2.4	V
Input voltage (OFF)	V _{I (OFF)}	_	$V_{CE} = -5V$, $I_{C} = -0.1$ mA	-1.0	_	-1.5	V
Transition frequency	f _T	_	$V_{CE} = -10V, I_{C} = -5mA$	_	200	_	MHz
Collector output capacitance	C _{ob}	_	$V_{CB} = -10V$, $I_E = 0$, $f = 1MHz$	_	3	6	pF

2

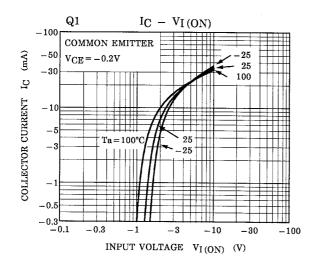
Q2 Electrical Characteristics (Ta = 25°C)

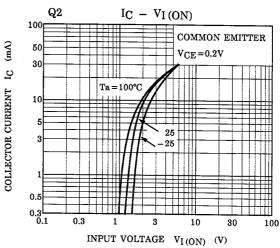
Characteristic	Symbol	Test Circuit	Test Condition	Min	Тур.	Max	Unit
Collector cut-off current	I _{CBO}	_	V _{CB} = 50V, I _E = 0	_	_	100	nA
	I _{CEO}	_	V _{CE} = 50V, I _B = 0	_	_	500	
Emitter cut-off current	I _{EBO}	_	V _{EB} = 10V, I _C = 0	0.38	_	0.71	mA
DC current gain	h _{FE}	_	V _{CE} = 5V, I _C = 10mA	50	_	_	_
Collector-emitter saturation voltage	V _{CE (sat)}	_	I _C = 5mA, I _B = 0.25mA	_	0.1	0.3	V
Input voltage (ON)	V _{I (ON)}	_	V _{CE} = 0.2V, I _C = 5mA	1.2	_	2.4	V
Input voltage (OFF)	V _{I (OFF)}	_	V _{CE} = 5V, I _C = 0.1mA	1.0	_	1.5	V
Transition frequency	f _T	_	V _{CE} = 10V, I _C = 5mA	_	250	_	MHz
Collector output capacitance	C _{ob}	_	V _{CB} = 50V, I _E = 0	_	3	6	pF

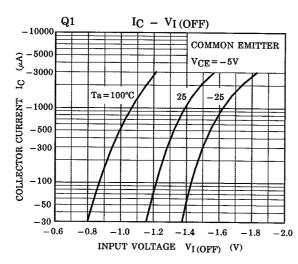
Q1, Q2 Common Electrical Characteristics (Ta = 25°C)

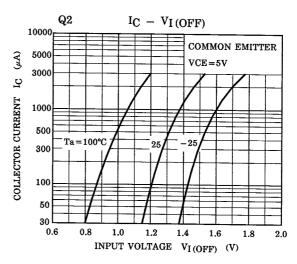
Characteristic	Symbol	Test Circuit	Test Condition	Min	Тур.	Max	Unit
Input resistor	R1	_	_	7	10	13	kΩ
Resistor ratio	R1/R2	_		0.9	1.0	1.1	_

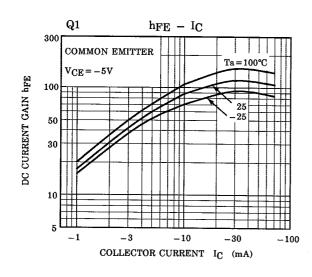
3 2001-06-07

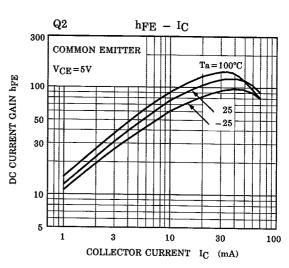












4

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