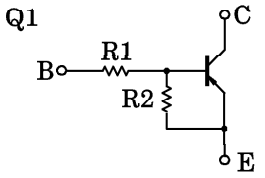
TOSHIBA TRANSISTOR
SILICON PNP EPITAXIAL TYPE (PCT PROCESS) SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

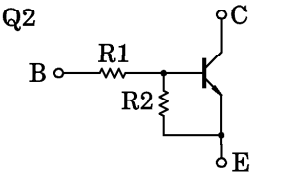
RN4906

SWITCHING, INVERTER CIRCUIT, INTERFACE CIRCUIT
AND DRIVER CIRCUIT APPLICATIONS.

- Including 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

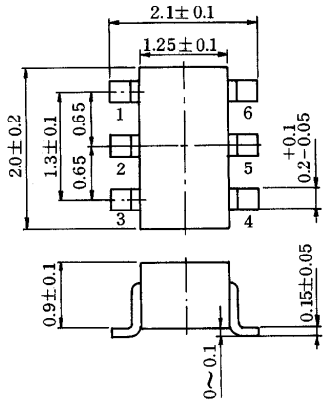
EQUIVALENT CIRCUIT AND BIAS RESISTOR VALUES





R1 : 4.7kΩ
R2 : 47kΩ
(Q1, Q2 COMMON)

Unit in mm



1. EMITTER 1 (E1)
2. BASE 1 (B1)
3. COLLECTOR 2 (C2)
4. EMITTER 2 (E2)
5. BASE 2 (B2)
6. COLLECTOR 1 (C1)

JEDEC	—
EIAJ	—
TOSHIBA	2-2J1A

Weight : 6.8mg

Q1 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}	−5	V
Collector Current	I_C	−100	mA

Q2 MAXIMUM RATINGS (Ta = 25°C)

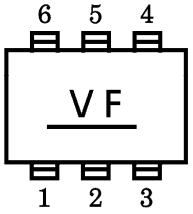
CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	I_C	100	mA

Q1, Q2 COMMON MAXIMUM RATINGS (Ta = 25°C)

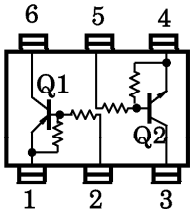
CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector Power Dissipation	P_C *	200	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	−55~150	°C

* : Total Rating

MARKING



EQUIVALENT CIRCUIT (TOP VIEW)



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Q1 ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	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}	$V_{EB}=-5V$, $I_C=0$	−0.074	—	−0.138	mA
DC Current Gain	h_{FE}	$V_{CE}=-5V$, $I_C=-10mA$	80	—	—	
Collector-Emitter Saturation Voltage	$V_{CE\,(sat)}$	$I_C=-5mA$, $I_B=-0.25mA$	—	−0.1	−0.3	V
Input Voltage (ON)	$V_{I\,(ON)}$	$V_{CE}=-0.2V$, $I_C=-5mA$	−0.7	—	−1.8	V
Input Voltage (OFF)	$V_{I\,(OFF)}$	$V_{CE}=-5V$, $I_C=-0.1mA$	−0.5	—	−0.8	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

Q2 ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	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}	$V_{EB}=5V$, $I_C=0$	0.074	—	0.138	mA
DC Current Gain	h_{FE}	$V_{CE}=5V$, $I_C=10mA$	80	—	—	
Collector-Emitter Saturation Voltage	$V_{CE\,(sat)}$	$I_C=5mA$, $I_B=0.25mA$	—	0.1	0.3	V
Input Voltage (ON)	$V_{I\,(ON)}$	$V_{CE}=0.2V$, $I_C=5mA$	0.7	—	1.3	V
Input Voltage (OFF)	$V_{I\,(OFF)}$	$V_{CE}=5V$, $I_C=0.1mA$	0.5	—	0.8	V
Transition Frequency	f_T	$V_{CE}=10V$, $I_C=5mA$	—	250	—	MHz
Collector Output Capacitance	C_{ob}	$V_{CB}=10V$, $I_E=0$, f=1MHz	—	3	6	pF

Q1, Q2 COMMON ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Resistor	R1		3.29	4.7	6.11	kΩ
Resistor Ratio	R1/R2		0.09	0.1	0.11	

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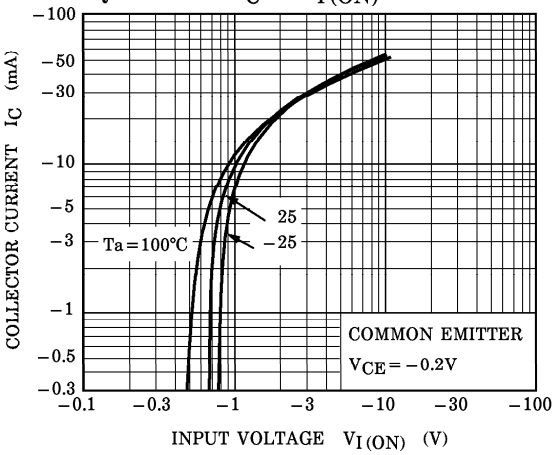
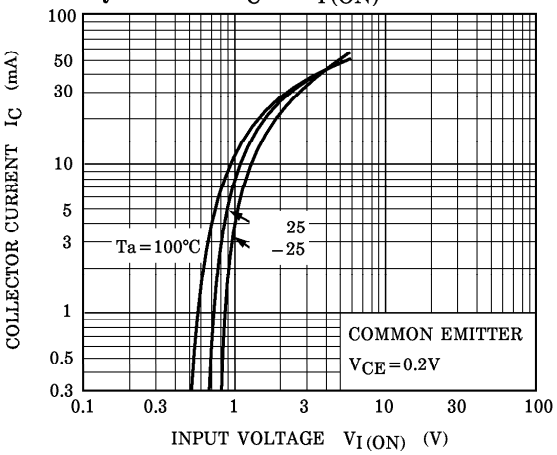
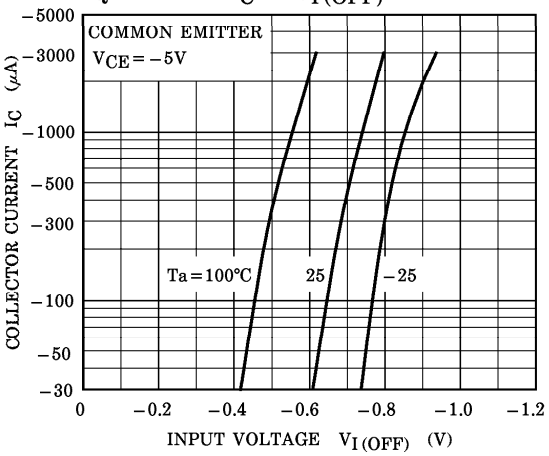
Q1 $I_C - V_{I(ON)}$



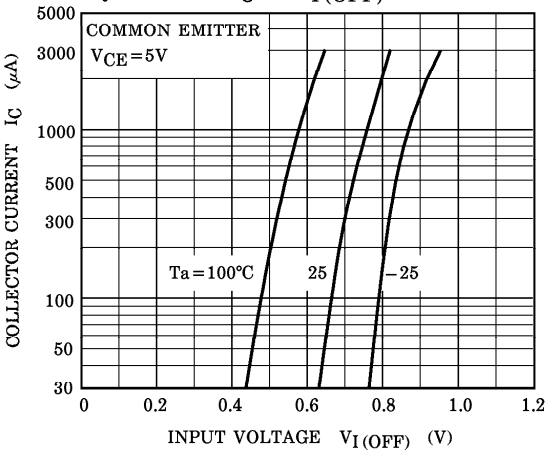
Q2 $I_C - V_{I(ON)}$



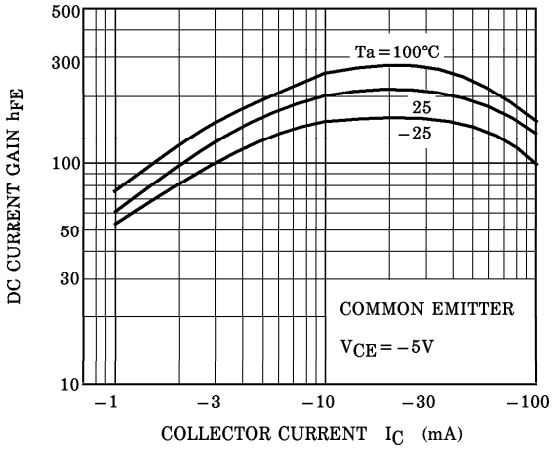
Q1 $I_C - V_{I(OFF)}$



Q2 $I_C - V_{I(OFF)}$



Q1 $h_{FE} - I_C$



Q2 $h_{FE} - I_C$