

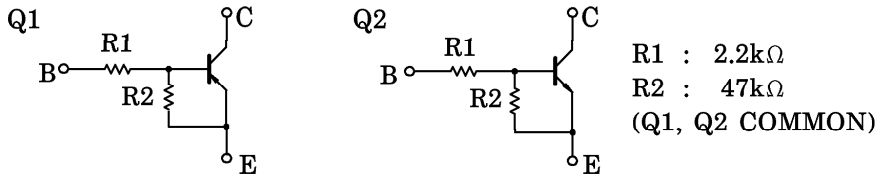
TOSHIBA TRANSISTOR  
 SILICON PNP EPITAXIAL TYPE (PCT PROCESS) SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

# RN4905

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**



**Q1 MAXIMUM RATINGS (Ta = 25°C)**

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V <sub>CB0</sub>	-50	V
Collector-Emitter Voltage	V <sub>CEO</sub>	-50	V
Emitter-Base Voltage	V <sub>EBO</sub>	-5	V
Collector Current	I <sub>C</sub>	-100	mA

**Q2 MAXIMUM RATINGS (Ta = 25°C)**

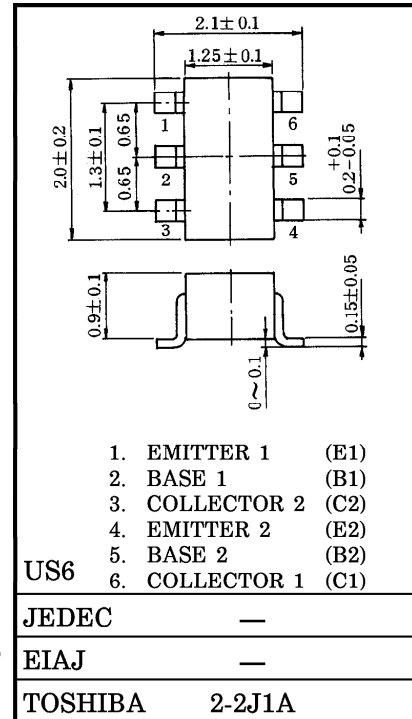
CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V <sub>CB0</sub>	50	V
Collector-Emitter Voltage	V <sub>CEO</sub>	50	V
Emitter-Base Voltage	V <sub>EBO</sub>	5	V
Collector Current	I <sub>C</sub>	100	mA

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector Power Dissipation	P <sub>C</sub> *	200	mW
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature Range	T <sub>stg</sub>	-55~150	°C

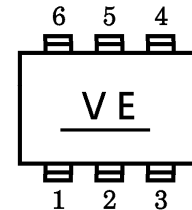
\* : Total Rating

Unit in mm

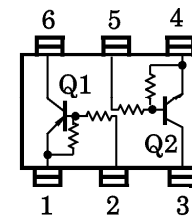


Weight : 6.8mg

**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	$I_{EBO}$	$V_{EB} = -5V, I_C = 0$	-0.078	—	-0.145	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)	$V_{I(ON)}$	$V_{CE} = -0.2V, I_C = -5mA$	-0.6	—	-1.1	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	$I_{EBO}$	$V_{EB} = 5V, I_C = 0$	0.078	—	0.145	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)	$V_{I(ON)}$	$V_{CE} = 0.2V, I_C = 5mA$	0.6	—	1.1	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	—	1.54	2.2	2.86	k $\Omega$
Resistor Ratio	R1/R2	—	0.0421	0.0468	0.0515	

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