

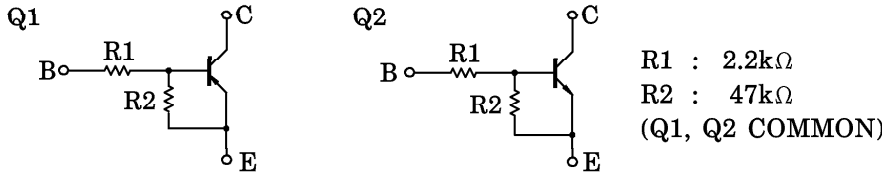
TOSHIBA TRANSISTOR
SILICON PNP EPITAXIAL TYPE (PCT PROCESS) SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

RN4605

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

- Including Two Devices in SM6 (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 _{CB0}	-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)

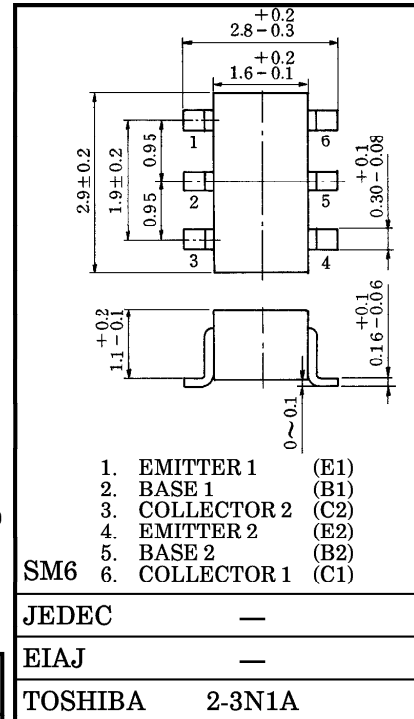
CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V _{CB0}	50	V
Collector-Emitter Voltage	V _{CEO}	50	V
Emitter-Base Voltage	V _{EBO}	5	V
Collector Current	I _C	100	mA

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector Power Dissipation	P _C *	300	mW
Junction Temperature	T _j	150	°C
Storage Temperature Range	T _{stg}	-55~150	°C

* : Total Rating

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)

SM6

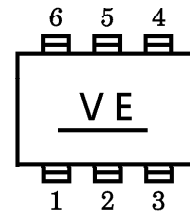
JEDEC —

EIAJ —

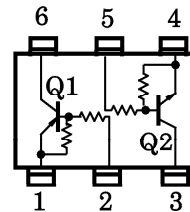
TOSHIBA 2-3N1A

Weight : 0.015g

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_{CB0}	$V_{CB} = -50V, I_E = 0$	—	—	-100	nA
	I_{CE0}	$V_{CE} = -50V, I_B = 0$	—	—	-500	
Emitter Cut-off Current	I_{EB0}	$V_{EB} = -5V, I_C = 0$	-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_{CB0}	$V_{CB} = 50V, I_E = 0$	—	—	100	nA
	I_{CE0}	$V_{CE} = 50V, I_B = 0$	—	—	500	
Emitter Cut-off Current	I_{EB0}	$V_{EB} = 10V, I_C = 0$	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	kΩ
Resistor Ratio	R1/R2	—	0.0421	0.0468	0.0515	

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