

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

HN3C02FU

TV TUNER, UHF CONVERTER APPLICATION
TV UHF RF AMPLIFIER APPLICATION

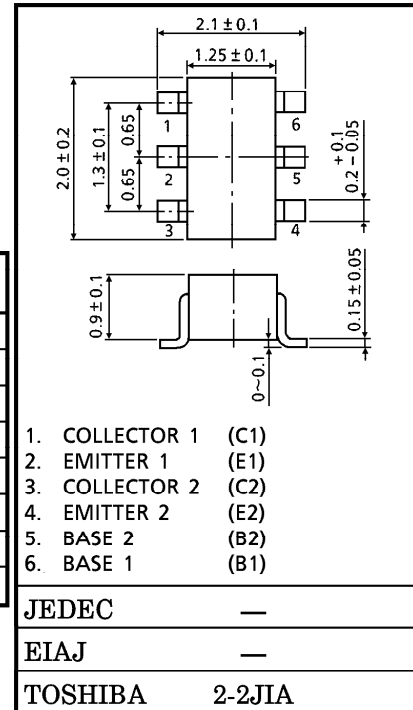
Unit in mm

- Including Two Devices in US6
- Low Reverse Transfer Capacitance : $C_{re}=0.53\text{pF}$ (Typ.)
- High Transition Frequency : $f_T=2400\text{MHz}$ (Typ.)

MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$) (Q_1, Q_2)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CB0}	30	V
Collector-Emitter Voltage	V_{CEO}	15	V
Emitter-Base Voltage	V_{EBO}	3	V
Collector Current	I_C	50	mA
Base Current	I_B	25	mA
Collector Power Dissipation	P_C^*	200	mW
Junction Temperature	T_j	125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55~125	$^\circ\text{C}$

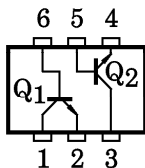
* : Total



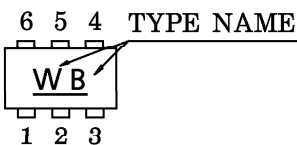
ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$) (Q_1, Q_2)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB} = 30\text{V}, I_E = 0$	—	—	0.1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 2\text{V}, I_C = 0$	—	—	1.0	μA
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1\text{mA}, I_B = 0$	15	—	—	V
DC Current Gain	h_{FE}	$V_{CE} = 10\text{V}, I_E = 5\text{mA}$	40	100	200	—
Transition Frequency	f_T	$V_{CE} = 10\text{V}, I_C = 2\text{mA}, f = 800\text{MHz}$	1500	2400	—	MHz
Reverse Transfer Capacitance Q_1	$C_{re(1)}$	$V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$	—	0.53	0.85	pF
Reverse Transfer Capacitance Q_2	$C_{re(2)}$	$V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$	—	0.48	0.80	pF
Collector-Base Time Constant Q_1	$C_c \cdot r_{bb'(1)}$	$V_{CB} = 10\text{V}, I_C = 2\text{mA}, f = 30\text{MHz}$	—	15.0	22.0	ps
Collector-Base Time Constant Q_2	$C_c \cdot r_{bb'(2)}$	$V_{CB} = 10\text{V}, I_C = 2\text{mA}, f = 30\text{MHz}$	—	14.5	21.5	ps

PIN ASSIGNMENT (TOP VIEW)



MARKING



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