

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

# HN3C01FU

TV TUNER, VHF CONVERTER APPLICATION  
TV VHF RF AMPLIFIER APPLICATION

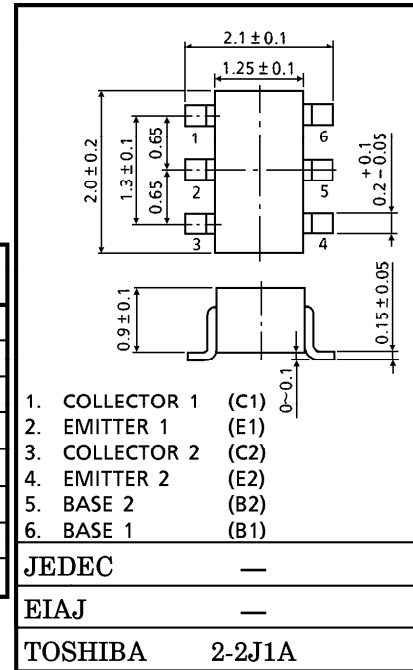
Unit in mm

- Including Two Devices in US6
- Low Reverse Transfer Capacitance :  $C_{re}=0.4\text{pF}$  (Typ.)
- High Transition Frequency :  $f_T=1400\text{MHz}$  (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	$V_{CEO}$	20	V
Emitter-Base Voltage	$V_{EB0}$	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

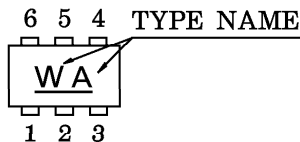
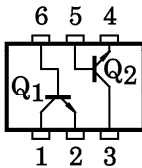


ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ ) ( $Q_1, Q_2$ )

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	$I_{CBO}$	$V_{CB}=25\text{V}, I_E=0$	—	—	0.1	$\mu\text{A}$
Emitter Cut-off Current	$I_{EBO}$	$V_{EB}=3\text{V}, I_C=0$	—	—	1.0	$\mu\text{A}$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, I_B=0$	20	—	—	V
DC Current Gain	$h_{FE}$	$V_{CE}=10\text{V}, I_C=5\text{mA}$	40	150	300	—
Transition Frequency	$f_T$	$V_{CE}=10\text{V}, I_C=5\text{mA}, f=200\text{MHz}$	900	1400	—	MHz
Reverse Transfer Capacitance $Q_1$	$C_{re}(1)$	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$	—	0.4	0.55	pF
Reverse Transfer Capacitance $Q_2$	$C_{re}(2)$	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$	—	0.45	0.55	pF
Collector-Base Time Constant $Q_1$	$C_c \cdot r_{bb'}(1)$	$V_{CB}=10\text{V}, I_C=5\text{mA}, f=30\text{MHz}$	—	4.0	12.0	ps
Collector-Base Time Constant $Q_2$	$C_c \cdot r_{bb'}(2)$	$V_{CB}=10\text{V}, I_C=5\text{mA}, f=30\text{MHz}$	—	4.5	11.5	ps

PIN ASSIGNMENT (TOP VIEW)

MARKING



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