

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

HN3C03FU

TV TUNER, UHF OSCILLATOR APPLICATION
TV UHF RF AMPLIFIER APPLICATION

Unit in mm

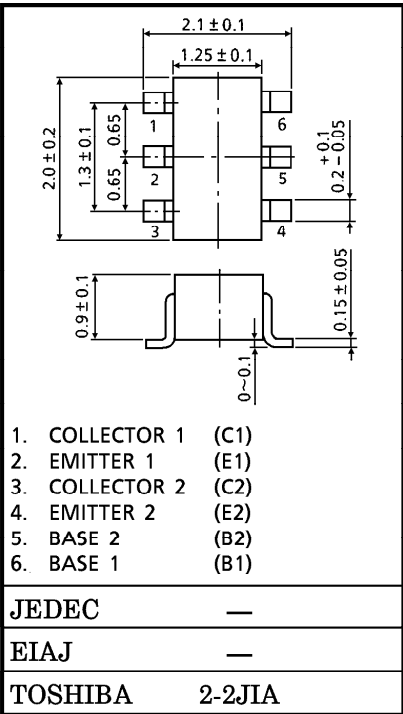
(COMMON COLLECTOR)

- Including Two Devices in US6
- Output Capacitance : $C_{ob}=1.2\text{pF}$ (Typ.)
- High Transition Frequency : $f_T=4.0\text{GHz}$ (Typ.)

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	20	V
Collector-Emitter Voltage	V_{CEO}	12	V
Emitter-Base Voltage	V_{EBO}	3	V
Collector Current	I_C	30	mA
Base Current	I_B	15	mA
Collector Power Dissipation	P_C^*	200	mW
Junction Temperature	T_j	125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	$-55\sim 125$	$^\circ\text{C}$

* : Total

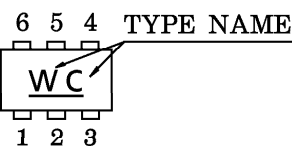
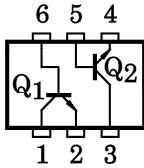


ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$) (Q_1, Q_2)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB}=10\text{V}, I_E=0$	—	—	0.1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB}=2\text{V}, I_C=0$	—	—	1.0	μA
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, I_B=0$	12	—	—	V
DC Current Gain	h_{FE}	$V_{CE}=10\text{V}, I_E=5\text{mA}$	35	—	130	—
Transition Frequency	f_T	$V_{CE}=10\text{V}, I_C=10\text{mA}, f=1\text{GHz}$	2.6	4.0	—	GHz
Output Capacitance Q_1	$C_{ob(1)}$	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$	—	1.2	1.55	pF
Output Capacitance Q_2	$C_{ob(2)}$	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$	—	1.0	1.35	pF
Collector-Base Time Constant Q_1	$C_c \cdot r_{bb'(1)}$	$V_{CB}=10\text{V}, I_C=5\text{mA}, f=30\text{MHz}$	—	3.2	8.5	ps
Collector-Base Time Constant Q_2	$C_c \cdot r_{bb'(2)}$	$V_{CB}=10\text{V}, I_C=5\text{mA}, f=30\text{MHz}$	—	2.7	8.0	ps

PIN ASSIGNMENT (TOP VIEW)

MARKING



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