

TOSHIBA

HN3C03F

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

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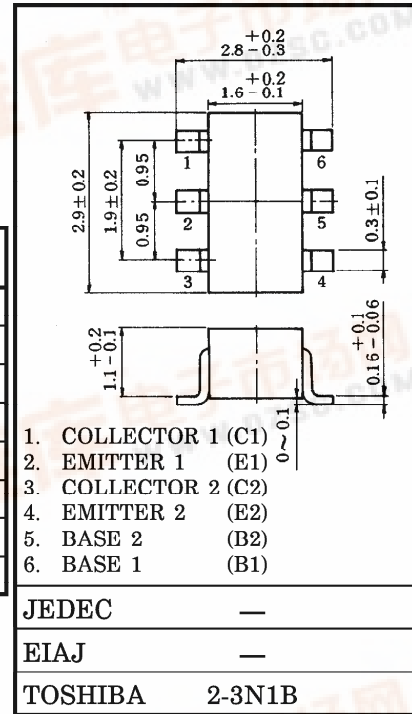
TV TUNER, UHF OSCILLATOR APPLICATION.
TV TUNER, UHF CONVERTER APPLICATION.

Unit in mm

- Including Two Devices in SM6 (Super Mini Type with 6Leads)
- 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_{CB0}	20	V
Collector-Emitter Voltage	V_{CEO}	12	V
Emitter-Base Voltage	V_{EB0}	3	V
Collector Current	I_C	30	mA
Base Current	I_B	15	mA
Collector Power Dissipation	P_C^*	300	mW
Junction Temperature	T_j	125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55~125	$^\circ\text{C}$



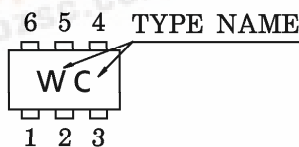
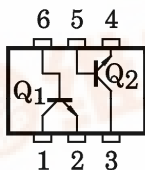
* Total

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}	$V_{CB} = 10\text{V}, I_E = 0$	—	—	0.1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 1\text{V}, I_C = 0$	—	—	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
Reverse Transfer Capacitance Q_1	$C_{ob(1)}$	$V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$	—	1.20	1.55	pF
Reverse Transfer Capacitance Q_2	$C_{ob(2)}$	$V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$	—	1.00	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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