

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

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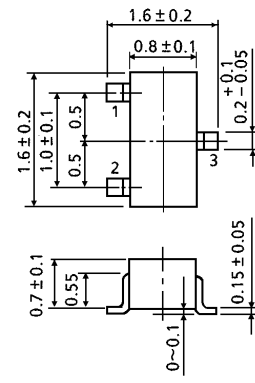
HIGH FREQUENCY AMPLIFIER APPLICATIONS

FM, RF, MIX, IF AMPLIFIER APPLICATIONS

- Small Reverse Transfer Capacitance : $C_{re}=0.55\text{pF}$ (Typ.)
- Low Noise Figure : $NF=2.3\text{dB}$ (Typ.)

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CB0}	40	V
Collector-Emitter Voltage	V_{CEO}	30	V
Emitter-Base Voltage	V_{EBO}	4	V
Collector Current	I_C	20	mA
Base Current	I_B	4	mA
Collector Power Dissipation	P_C	100	mW
Junction Temperature	T_j	125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55~125	$^\circ\text{C}$

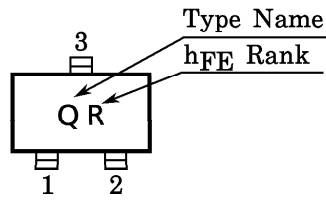


1. BASE
2. EMITTER
3. COLLECTOR

JEDEC	—
EIAJ	—
TOSHIBA	2-2H1A

Weight : 2.4mg

Marking



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

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CB0}	$V_{CB}=40\text{V}, I_E=0\text{A}$	—	—	0.1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB}=4\text{V}, I_C=0\text{A}$	—	—	0.5	μA
DC Current Gain	h_{FE} (Note)	$V_{CE}=6\text{V}, I_C=1\text{mA}$	40	—	200	
Reverse Transfer Capacitance	C_{re}	$V_{CB}=6\text{V}, f=1\text{MHz}$	—	0.55	—	pF
Transition Frequency	f_T	$V_{CE}=6\text{V}, I_C=1\text{mA}$	260	550	—	MHz
Collector-Base Time Constant	$C_c . r_{bb}'$	$V_{CE}=6\text{V}, I_E=-1\text{mA}, f=30\text{MHz}$	—	—	20	ps
Noise Figure	NF	$V_{CC}=6\text{V}, I_E=-1\text{mA},$	—	2.3	5.0	dB
Power Gain	G_{pe}	$f=100\text{MHz}, \text{Fig.1}$	17	23	—	dB

(Note) h_{FE} Classification R : 40~80, O : 70~140, Y : 100~200

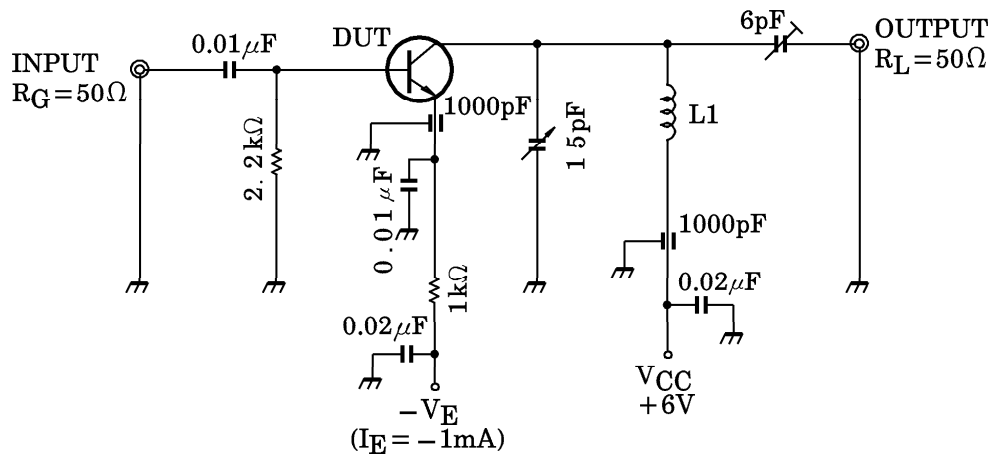
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Fig.1 NF, G_{pe} TEST CIRCUIT



L1 : 0.8mm ϕ SILVER PLATED COPPER WIRE, 4T, 10mm ID, 8mm LENGTH

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