

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

# 2SC4215

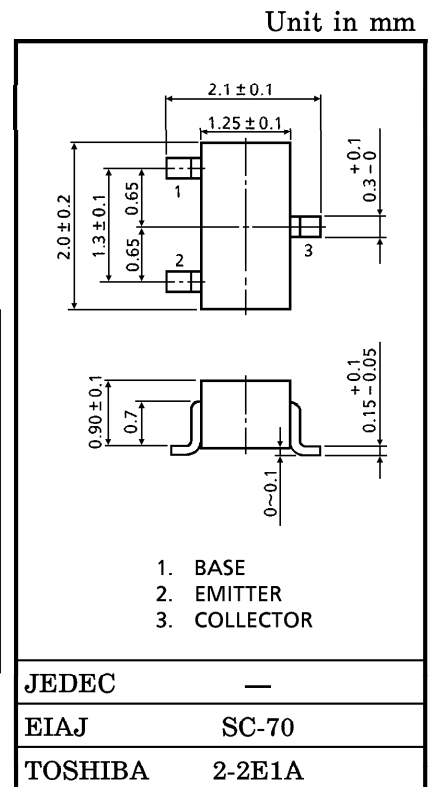
HIGH FREQUENCY AMPLIFIER APPLICATIONS

FM, RF, MIX, IF AMPLIFIER APPLICATIONS

- Small Reverse Transfer Capacitance :  $C_{re} = 0.55 \text{ pF}$  (Typ.)
- Low Noise Figure :  $NF = 2 \text{ dB}$  (Typ.) ( $f = 100 \text{ MHz}$ )

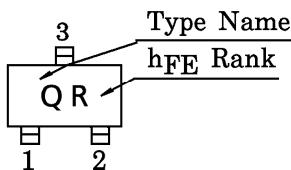
MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )

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	$^\circ\text{C}$



Weight : 0.006 g

Marking



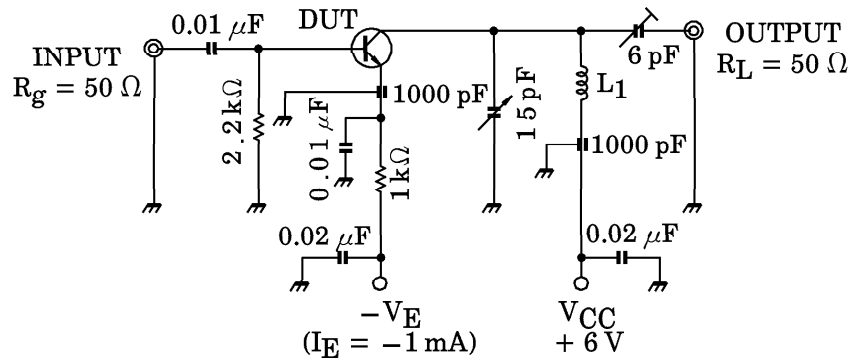
ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	$I_{CBO}$	$V_{CB} = 40 \text{ V}, I_E = 0$	—	—	0.1	$\mu\text{A}$
Emitter Cut-off Current	$I_{EBO}$	$V_{EB} = 4 \text{ V}, I_C = 0$	—	—	0.5	$\mu\text{A}$
DC Current Gain	$h_{FE}$ (Note)	$V_{CE} = 6 \text{ V}, I_C = 1 \text{ mA}$	40	—	200	—
Reverse Transfer Capacitance	$C_{re}$	$V_{CB} = 10 \text{ V}, f = 1 \text{ MHz}$	—	0.55	—	pF
Transition Frequency	$f_T$	$V_{CE} = 6 \text{ V}, I_C = 1 \text{ mA}$	260	550	—	MHz
Collector-Base Time Constant	$C_{c-rbb'}$	$V_{CE} = 6 \text{ V}, I_E = -1 \text{ mA}, f = 30 \text{ MHz}$	—	—	25	ps
Noise Figure	NF	$V_{CC} = 6 \text{ V}, I_E = -1 \text{ mA}, f = 100 \text{ MHz}, \text{Fig.1}$	—	2	5.0	dB
Power Gain	$G_{pe}$		17	23	—	dB

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

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L<sub>1</sub> : 0.8 mmφ SILVER PLATED COPPER WIRE, 4T, 10 mm ID, 8 mm LENGTH

Fig.1 NF, G<sub>pe</sub> TEST CIRCUIT

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