

HIGH FREQUENCY AMPLIFIER APPLICATIONS.
FM, RF, MIX, IF AMPLIFIER APPLICATIONS.

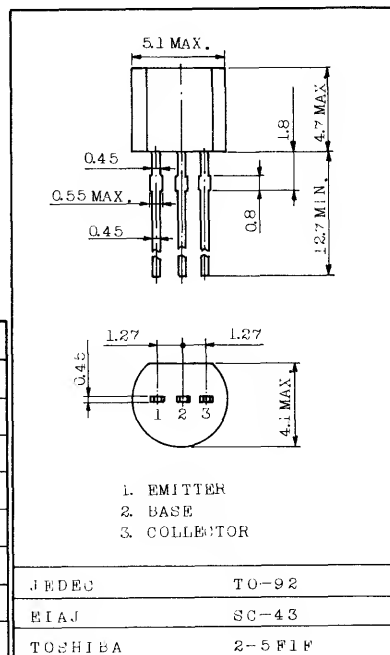
Unit in mm

FEATURES:

- Small Collector Output Capacitance : $C_{ob}=1.2\text{pF(Typ.)}$
- Low Noise Figure : $NF=2.5\text{dB(Typ.)}$ ($f=100\text{MHz}$)

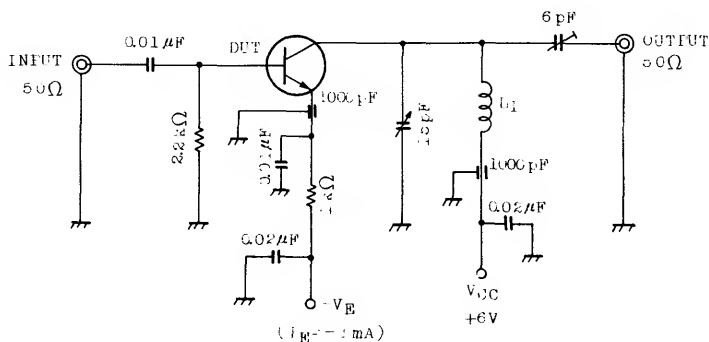
MAXIMUM RATINGS ($T_a=25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	40	V
Collector-Emitter Voltage	V_{CEO}	30	V
Emitter-Base Voltage	V_{EBO}	4	V
Collector Current	I_C	25	mA
Base Current	I_B	2.5	mA
Collector Power Dissipation	P_C	400	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 ~ 150	$^\circ\text{C}$

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	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB}=4\text{V}, I_C=0$	-	-	0.1	μA
DC Current Gain	h_{FE} (Note)	$V_{CE}=5\text{V}, I_C=1\text{mA}$	54	-	198	
Collector Output Capacitance	C_{ob}	$V_{CE}=10\text{V}, f=1\text{MHz}, I_E=0$	-	1.2	1.6	pF
Transition Frequency	f_T	$V_{CE}=5\text{V}, I_C=1\text{mA}$	400	620	-	MHz
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, I_B=0$	30	-	-	V
Noise Figure	NF	$V_{CE}=6\text{V}, I_E=-1\text{mA}$	-	2.5	5.0	dB
Power Gain	G_{pe}	$f=100\text{MHz}, \text{Fig.}$	15	18	-	dB
Base-Emitter Voltage	V_{BE}	$V_{CE}=5\text{V}, I_C=1\text{mA}$	-	0.72	-	V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=10\text{mA}, I_B=1\text{mA}$	-	0.1	0.3	V

Note : h_{FE} Classification F : 54 ~ 80, G : 72 ~ 108, H : 97 ~ 146, I : 132 ~ 198

Fig. NF, G_{pe} TEST CIRCUIT

L_1 : 0.8mm ϕ SILVER PLATED COPPER WIRE, 4T, 10ID, 8 LENGTH

y PARAMETER (Typ.)

(1) COMMON EMITTER ($V_{CE}=6V$, $I_E=-1mA$, $f=100MHz$)

CHARACTERISTIC	SYMBOL	TYP.	UNIT
Input Conductance	g_{ie}	2.9	m Ω
Input Capacitance	C_{ie}	10.2	pF
Reverse Transfer Admittance	$ y_{re} $	0.33	m Ω
Phase Angle of Reverse Transfer Admittance	θ_{re}	-90	°
Forward Transfer Admittance	$ y_{fe} $	40	m Ω
Phase Angle of Forward Transfer Admittance	θ_{fe}	-20	°
Output Conductance	g_{oe}	45	$\mu\Omega$
Output Capacitance	C_{oe}	1.1	pF

(2) COMMON BASE ($V_{CE}=6V$, $I_E=-1mA$, $f=100MHz$)

CHARACTERISTIC	SYMBOL	TYP.	UNIT
Input Conductance	g_{ib}	34	m Ω
Input Capacitance	C_{ib}	-10	pF
Reverse Transfer Admittance	$ y_{rb} $	0.27	m Ω
Phase Angle of Reverse Transfer Admittance	θ_{rb}	-105	°
Forward Transfer Admittance	$ y_{fb} $	34	m Ω
Phase Angle of Forward Transfer Admittance	θ_{fb}	165	°
Output Conductance	g_{ob}	45	$\mu\Omega$
Output Capacitance	C_{ob}	1.1	pF

STATIC CHARACTERISTICS

