

# 2SC3123

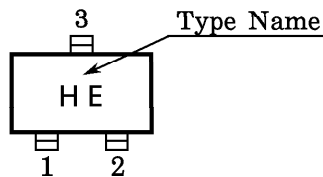
TV VHF MIXER APPLICATIONS

- High Conversion Gain :  $G_{ce}=23\text{dB}$  (Typ.)
- Low Reverse Transfer Capacitance :  $C_{re}=0.4\text{pF}$  (Typ.)

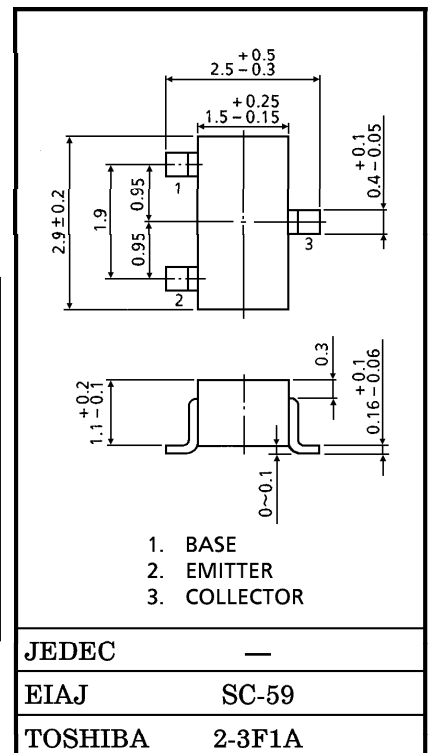
MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	$V_{CB0}$	30	V
Collector-Emitter Voltage	$V_{CEO}$	20	V
Emitter-Base Voltage	$V_{EB0}$	3	V
Collector Current	$I_C$	50	mA
Base Current	$I_B$	25	mA
Collector Power Dissipation	$P_C$	150	mW
Junction Temperature	$T_j$	125	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55~125	$^\circ\text{C}$

Marking



Unit in mm



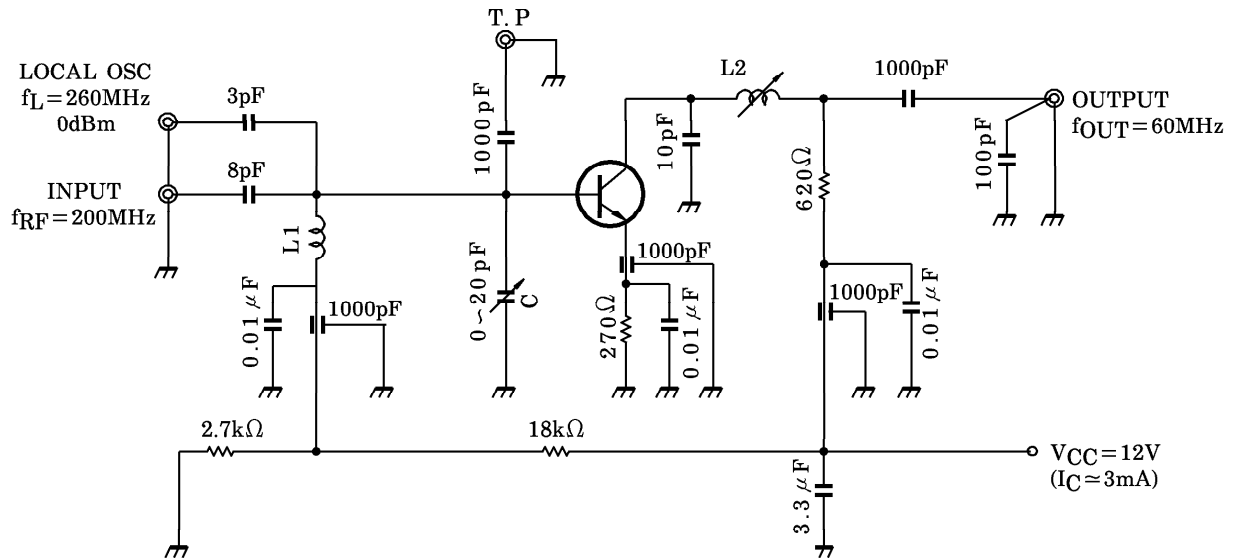
JEDEC	—
EIAJ	SC-59
TOSHIBA	2-3F1A

Weight : 0.012g

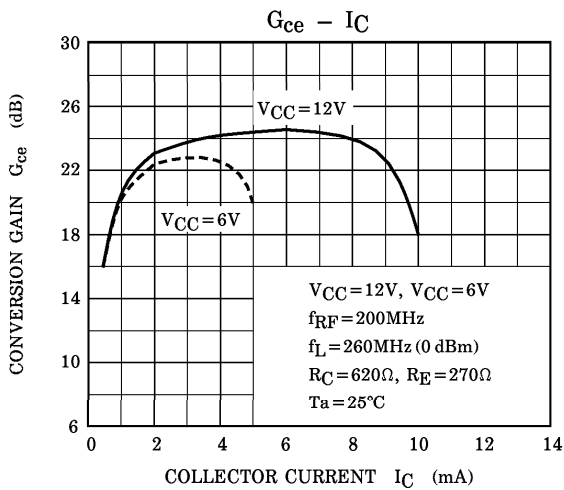
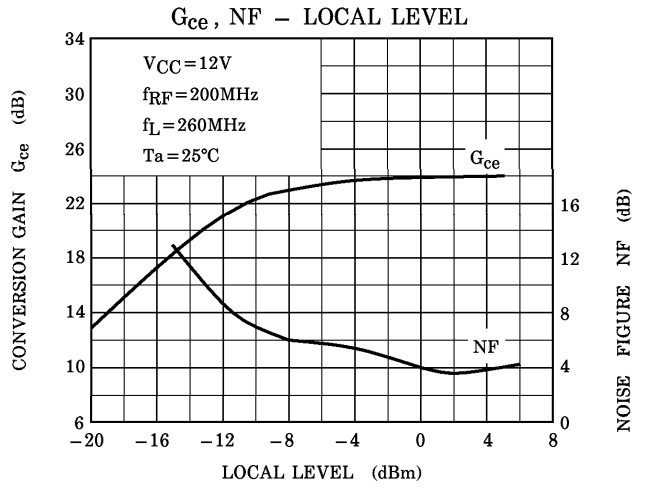
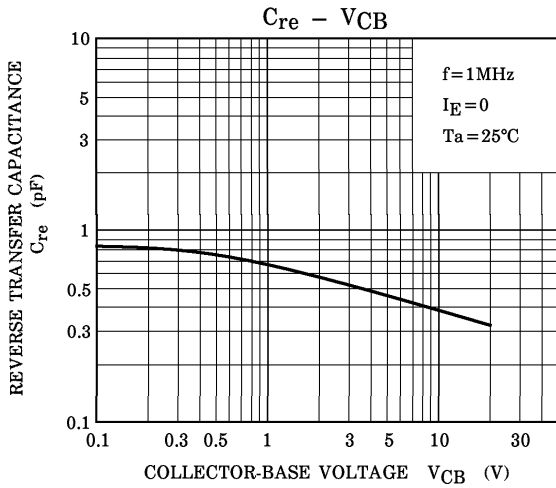
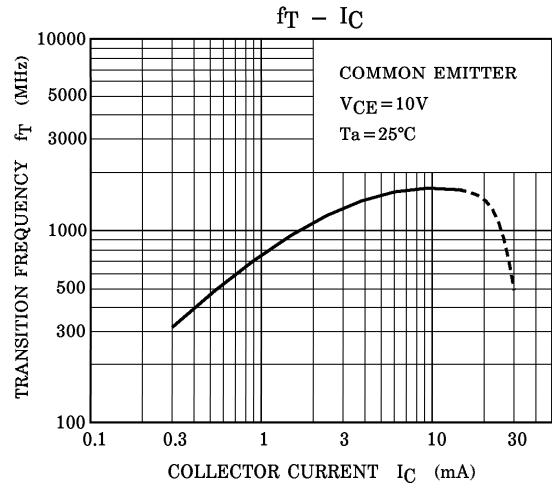
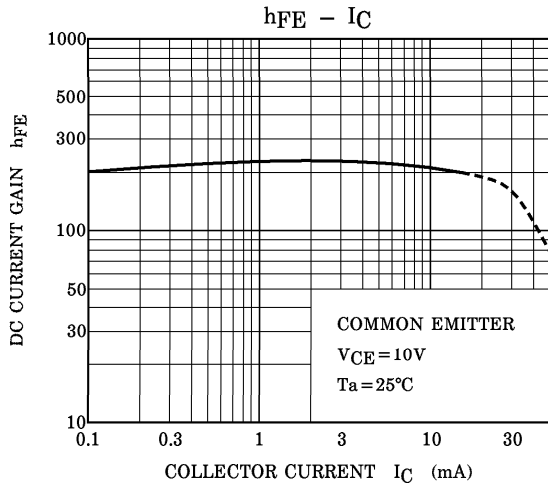
ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	$I_{CBO}$	$V_{CB}=25\text{V}, I_E=0$	—	—	100	nA
Emitter Cut-off Current	$I_{EBO}$	$V_{EB}=3\text{V}, I_C=0$	—	—	1000	nA
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, I_B=0$	20	—	—	V
DC Current Gain	$h_{FE}$	$V_{CE}=10\text{V}, I_C=5\text{mA}$	40	150	300	
Reverse Transfer Capacitance	$C_{re}$	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$	—	0.4	0.5	pF
Transition Frequency	$f_T$	$V_{CE}=10\text{V}, I_C=5\text{mA}$	900	1400	—	MHz
Conversion Gain	$G_{ce}$	$V_{CC}=12\text{V}, f=200\text{MHz}$	20	23	—	dB
Noise Figure	NF	$f_L=260\text{MHz}$	—	3.8	5.5	dB

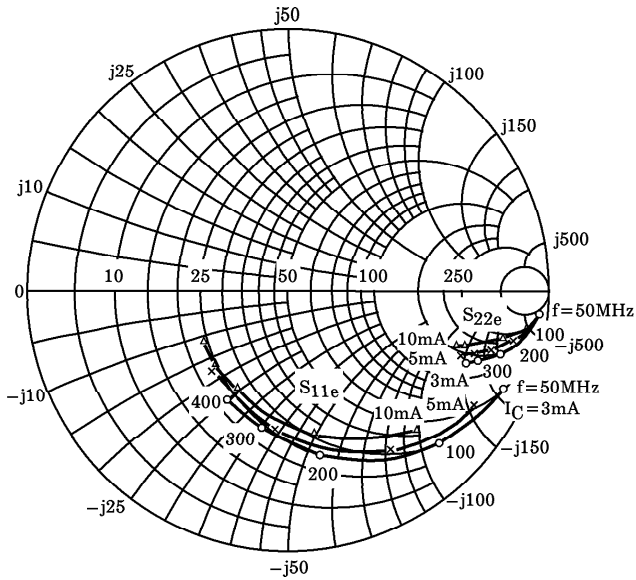
Fig.1 200MHz  $G_{ce}$ , NF TEST CIRCUIT



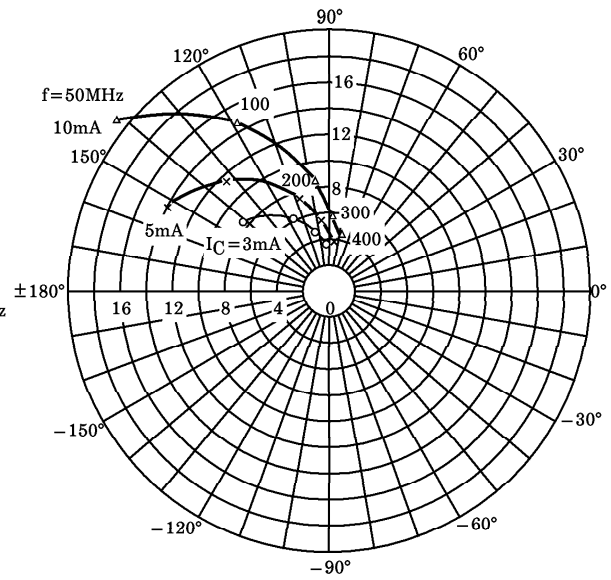
- L1 : 0.8mm $\phi$  SILVER PLATED COPPER WIRE, 1.5T 5mm ID
- L2 : COIL WITH CORE SCN-5962A ① - ③ (TOKO INC.) OR EQUIVALENT
- C : AIR TRIMMER TTA25A200A (MURATA MFG, Co., LTD.) OR EQUIVALENT



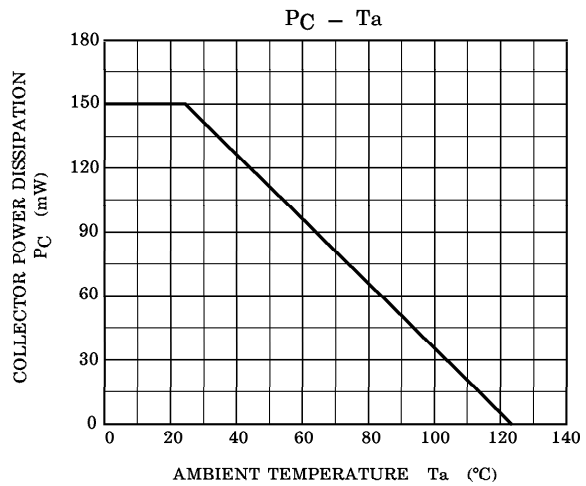
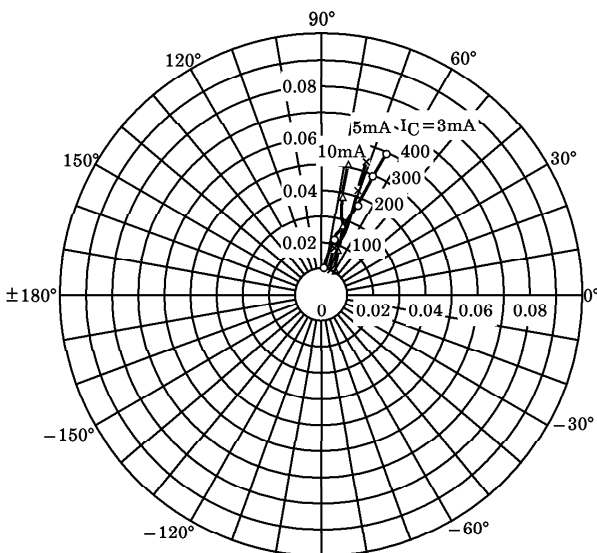
$S_{11e}, S_{22e}$   
 $V_{CE} = 10V$   
 $T_a = 25^\circ C$   
 (UNIT:  $\Omega$ )



$S_{21e}$   
 $V_{CE} = 10V$   
 $T_a = 25^\circ C$



$S_{12e}$   
 $V_{CE} = 10V$   
 $T_a = 25^\circ C$



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