

TOSHIBA Transistor Silicon NPN Epitaxial Planar Type

# 2SC3121

TV Tuner, UHF Oscillator Applications (common base)  
 TV Tuner, UHF Converter Applications (common base)

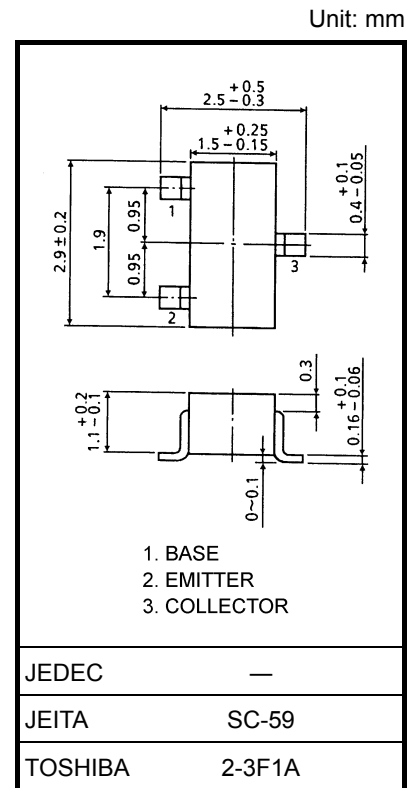
- High transition frequency:  $f_T = 1500$  MHz (typ.)
- Excellent linearity

### Absolute Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Collector-base voltage	$V_{CB0}$	30	V
Collector-emitter voltage	$V_{CEO}$	15	V
Emitter-base voltage	$V_{EBO}$	3	V
Collector current	$I_C$	25	mA
Base current	$I_B$	50	mA
Collector power dissipation	$P_C$	150	mW
Junction temperature	$T_j$	125	°C
Storage temperature range	$T_{stg}$	-55~125	°C

Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.

Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

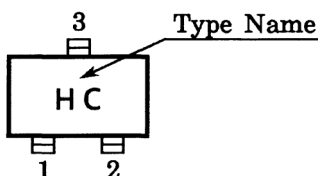


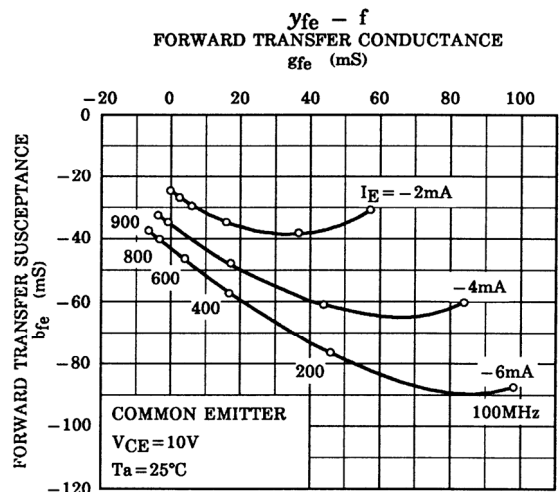
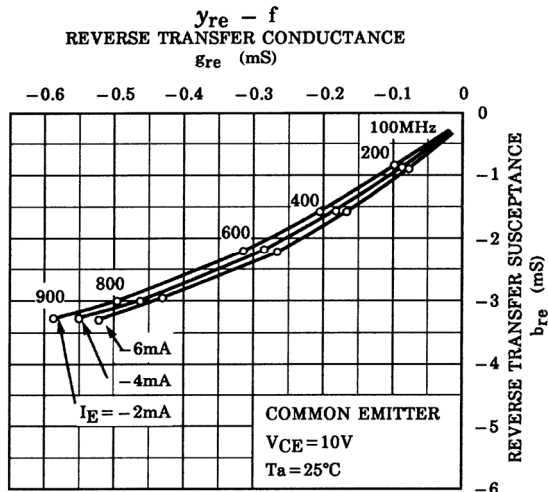
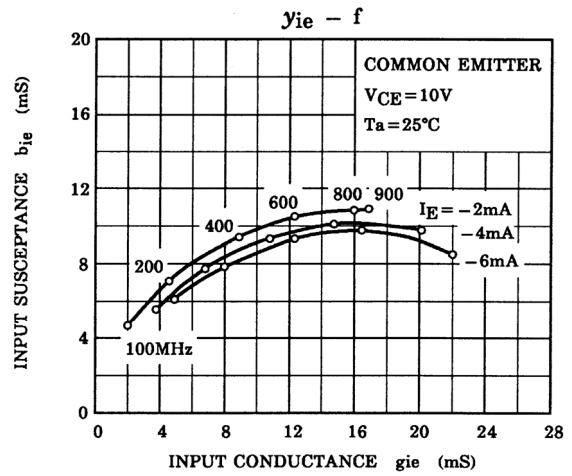
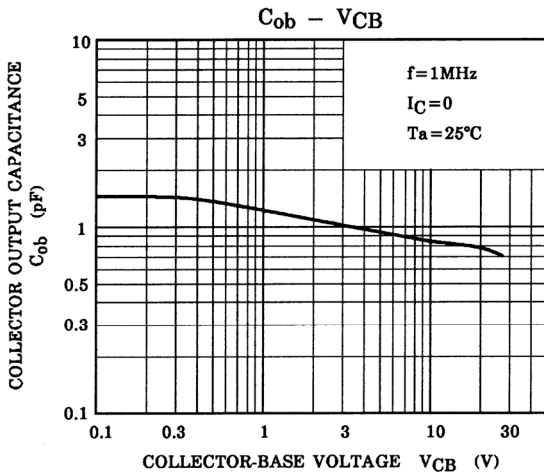
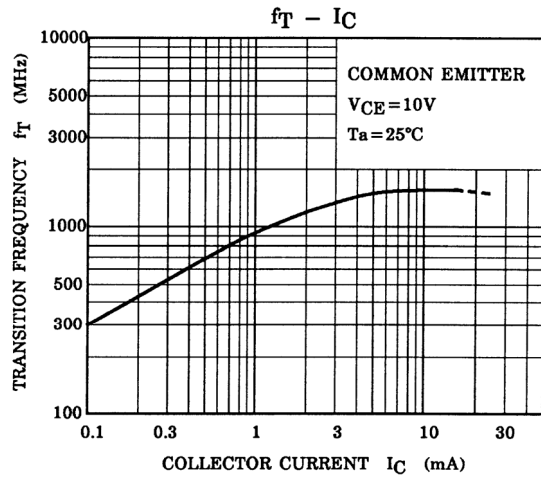
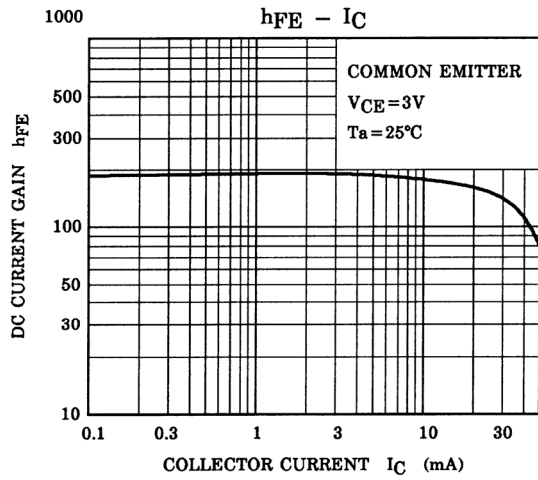
Weight: 0.012 g (typ.)

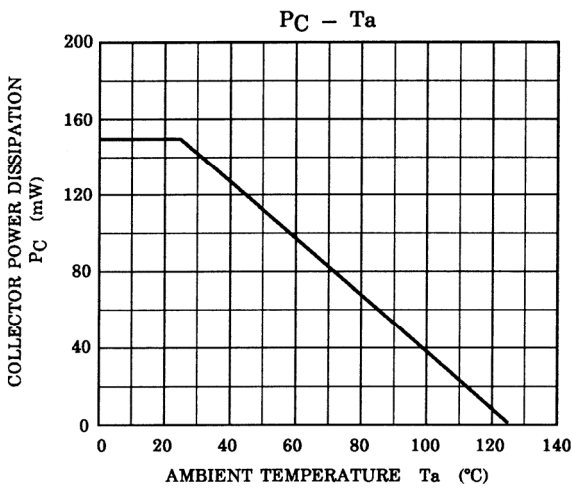
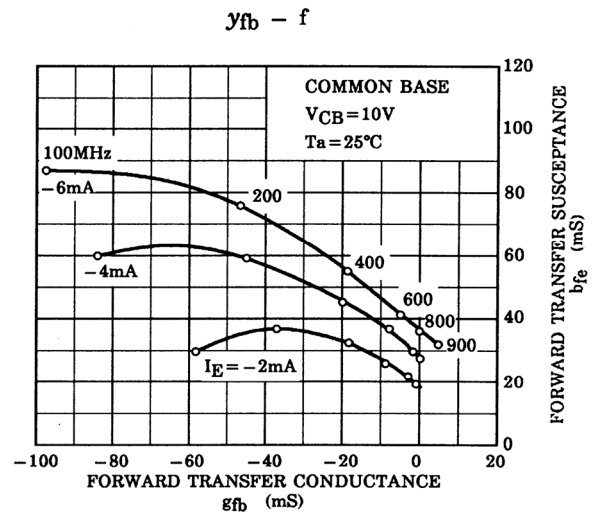
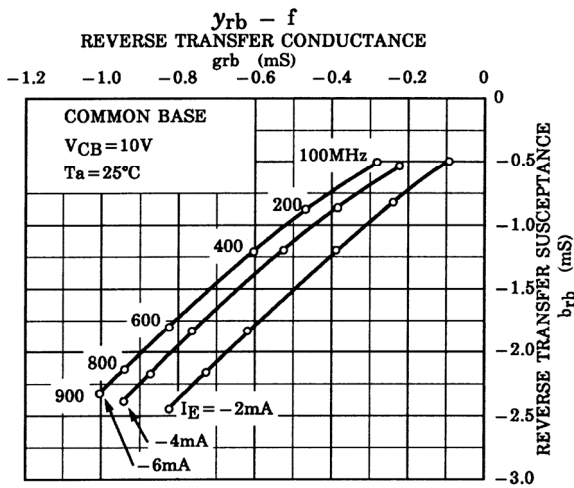
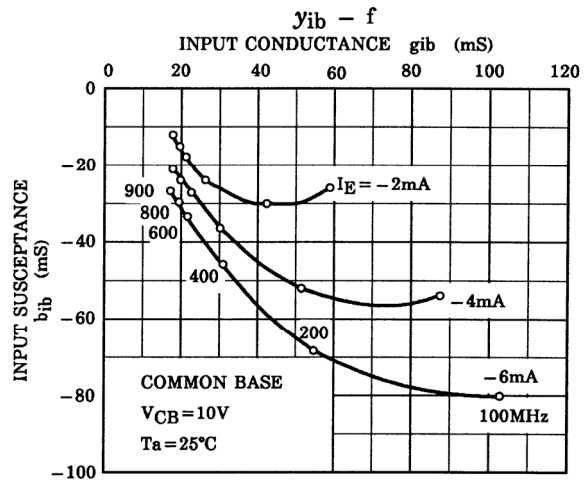
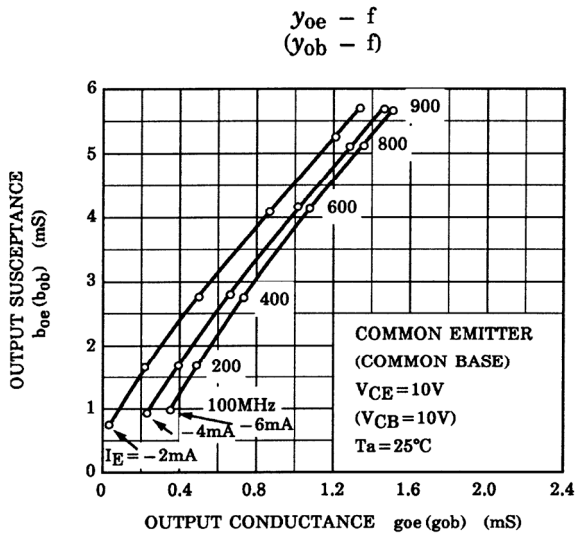
### Electrical Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	$I_{CBO}$	$V_{CB} = 15$ V, $I_E = 0$	—	—	0.1	$\mu$ A
Emitter cut-off current	$I_{EBO}$	$V_{EB} = 3$ V, $I_C = 0$	—	—	1.0	$\mu$ A
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 1$ mA, $I_B = 0$	15	—	—	V
DC current gain	$h_{FE}$	$V_{CE} = 3$ V, $I_C = 8$ mA	60	150	320	
Transition frequency	$f_T$	$V_{CE} = 10$ V, $I_C = 8$ mA	1100	1500	—	MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = 10$ V, $I_E = 0$ , $f = 1$ MHz	—	0.9	1.3	pF
Collector-base time constant	$C_c \cdot r_{bb'}$	$V_{CB} = 10$ V, $I_C = 8$ mA, $f = 30$ MHz	—	7	12	ps

### Marking







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20070701-EN GENERAL

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