

TOSHIBA Transistor Silicon NPN Epitaxial Planar Type

# 2SC3862

TV Tuner, UHF Mixer Applications  
VHF~UHF Band RF Amplifier Applications

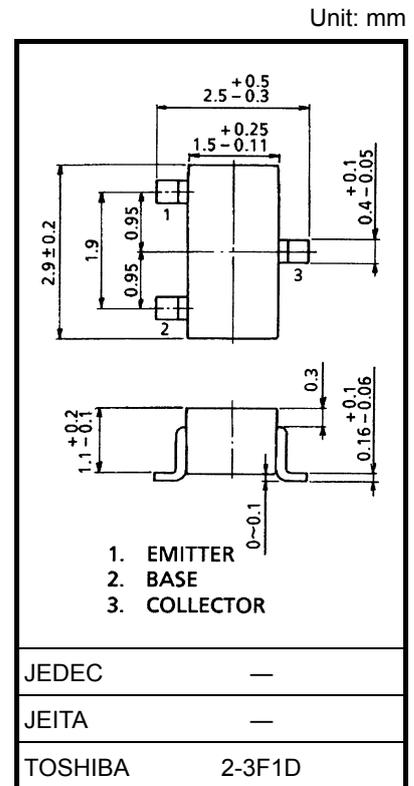
- Exchange of emitter for base in 2SC3120

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

Characteristics	Symbol	Rating	Unit
Collector-base voltage	$V_{CBO}$	30	V
Collector-emitter voltage	$V_{CEO}$	15	V
Emitter-base voltage	$V_{EBO}$	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	°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).

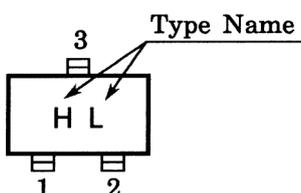


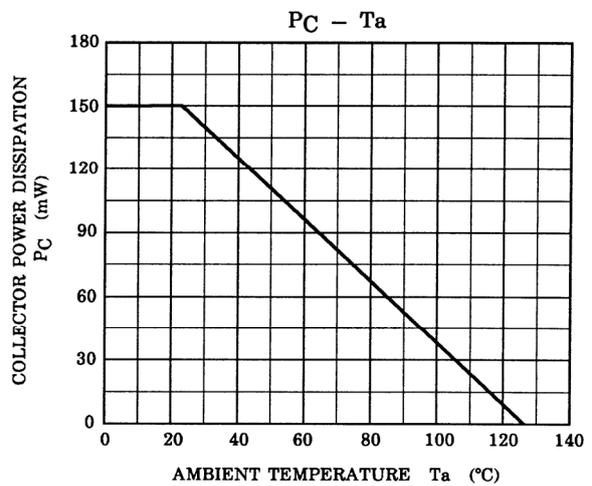
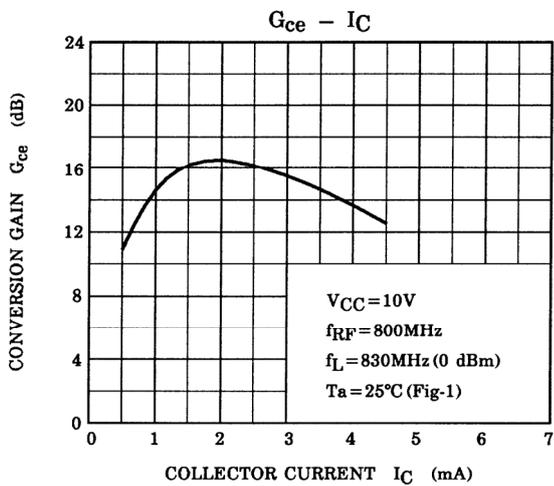
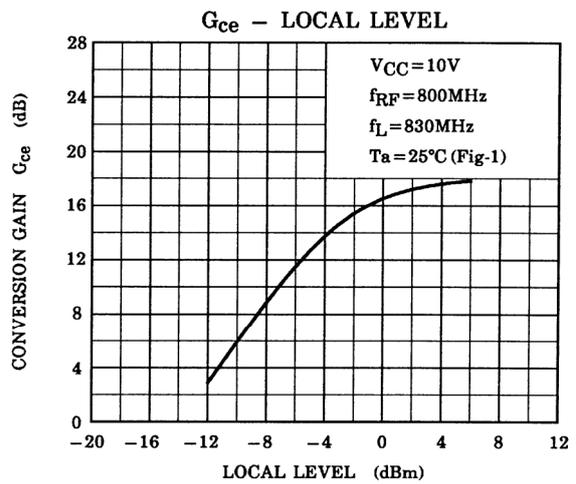
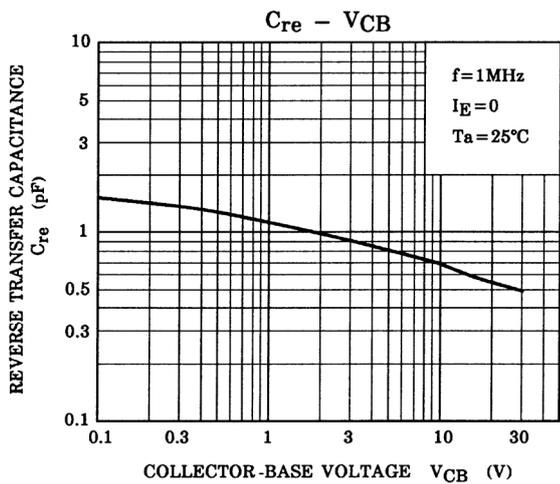
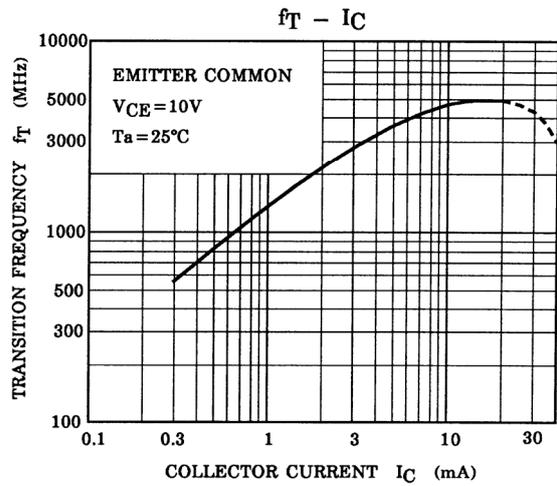
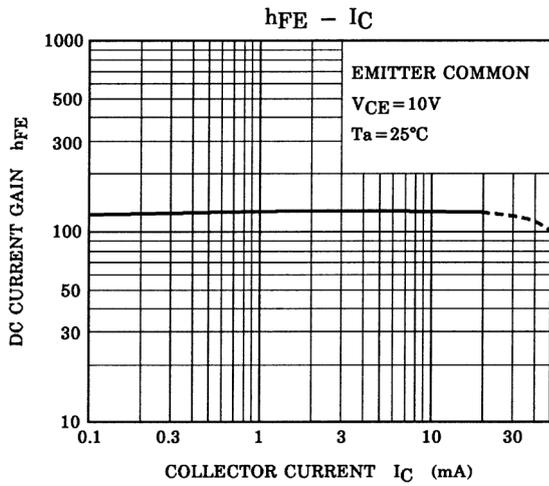
Weight: 0.012 g (typ.)

## Electrical Characteristics (Ta = 25°C)

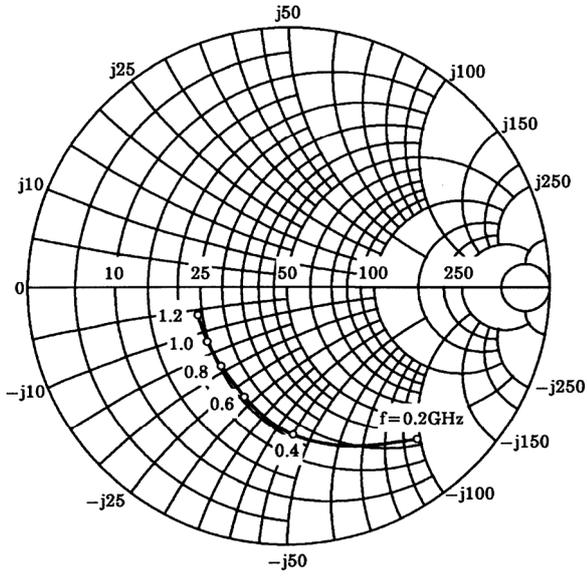
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	$I_{CBO}$	$V_{CB} = 30\text{ V}, I_E = 0$	—	—	0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = 2\text{ V}, I_C = 0$	—	—	1.0	$\mu\text{A}$
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 1\text{ mA}, I_B = 0$	15	—	—	V
DC current gain	$h_{FE}$	$V_{CE} = 10\text{ V}, I_C = 5\text{ mA}$	40	100	200	
Reverse transfer capacitance	$C_{re}$	$V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$	—	0.6	0.9	pF
Transition frequency	$f_T$	$V_{CE} = 10\text{ V}, I_C = 2\text{ mA}$	1500	2400	—	MHz

## Marking

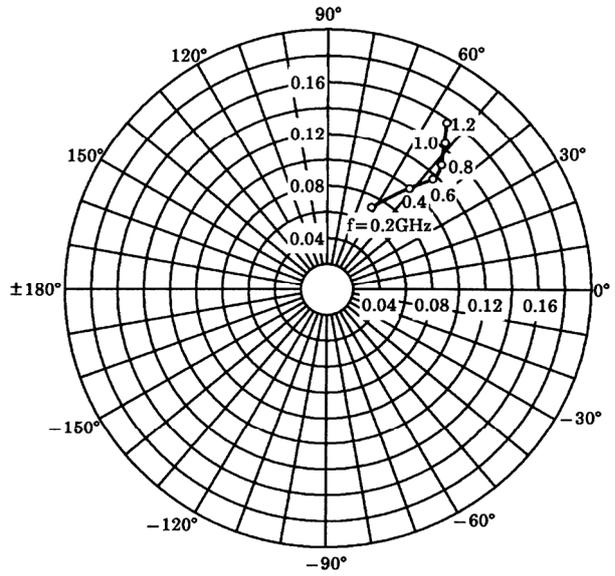




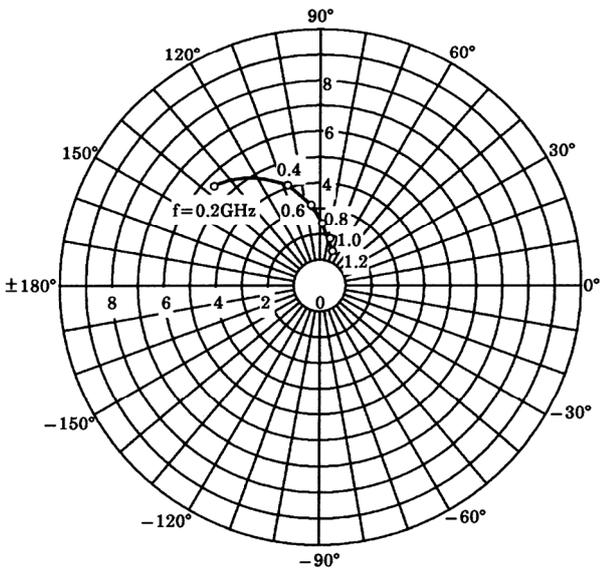
**S11e**  
 $V_{CE} = 10V$   
 $I_C = 2mA$   
 $T_a = 25^\circ C$   
 (UNIT :  $\Omega$ )



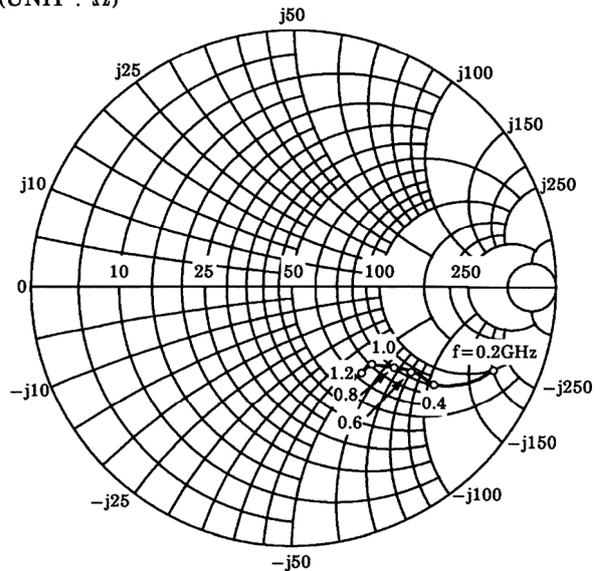
**S12e**  
 $V_{CE} = 10V$   
 $I_C = 2mA$   
 $T_a = 25^\circ C$



**S21e**  
 $V_{CE} = 10V$   
 $I_C = 2mA$   
 $T_a = 25^\circ C$



**S22e**  
 $V_{CE} = 10V$   
 $I_C = 2mA$   
 $T_a = 25^\circ C$   
 (UNIT :  $\Omega$ )



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20070701-EN GENERAL

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