

TOSHIBA Transistor Silicon NPN Epitaxial Planar Type

# 2SC4253

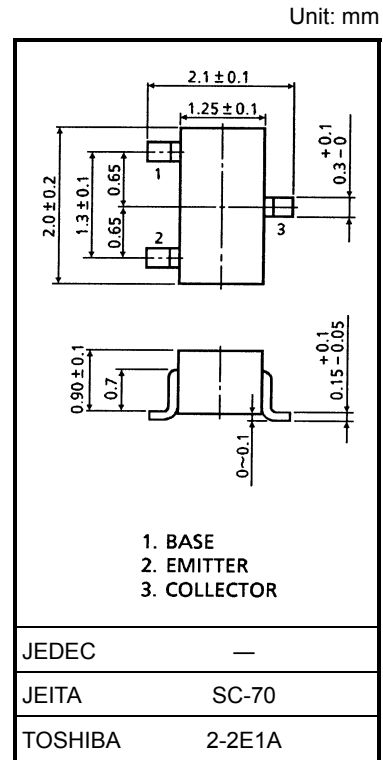
TV Final Picture IF Amplifier Applications

- Good linearity of  $f_T$

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

Characteristics	Symbol	Rating	Unit
Collector-base voltage	$V_{CB0}$	30	V
Collector-emitter voltage	$V_{CEO}$	25	V
Emitter-base voltage	$V_{EBO}$	4	V
Collector current	$I_C$	50	mA
Base current	$I_B$	25	mA
Collector power dissipation	$P_C$	100	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).

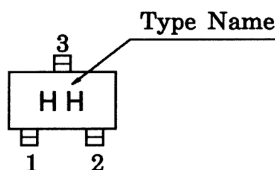


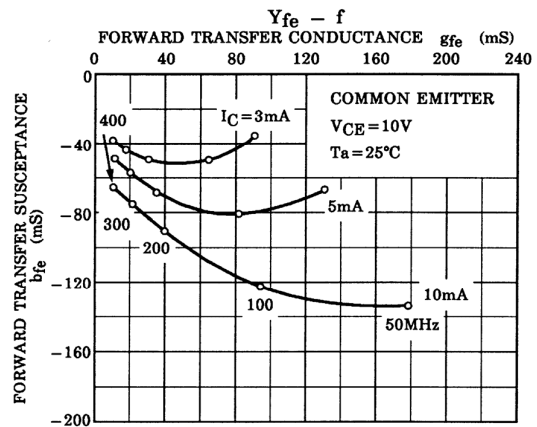
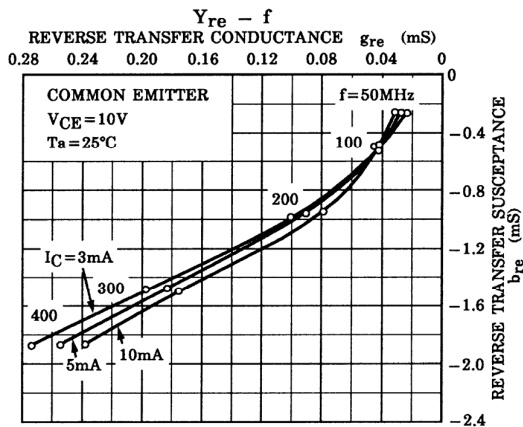
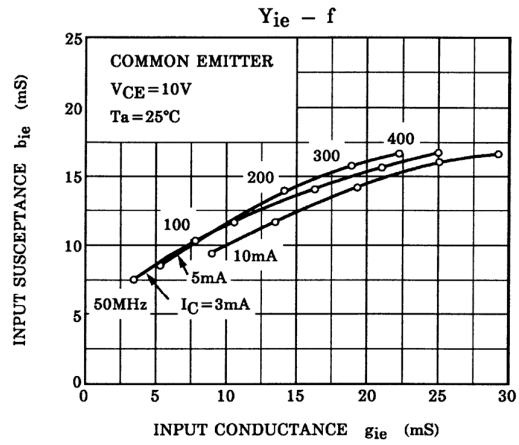
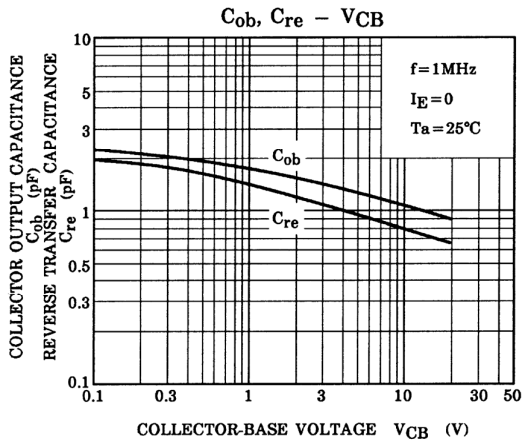
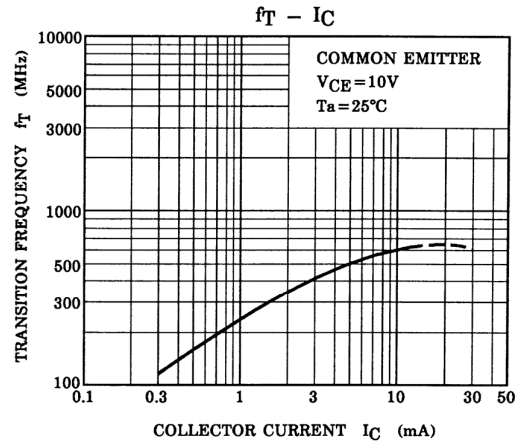
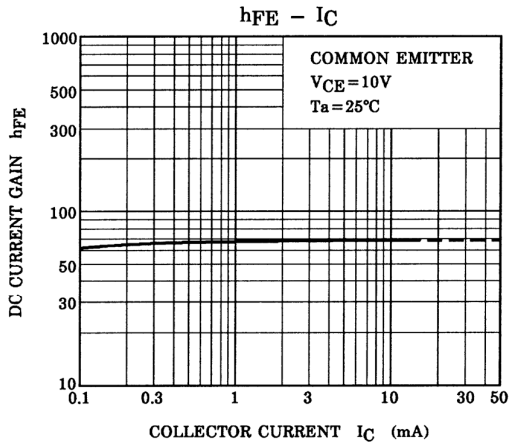
Weight: 0.006 g (typ.)

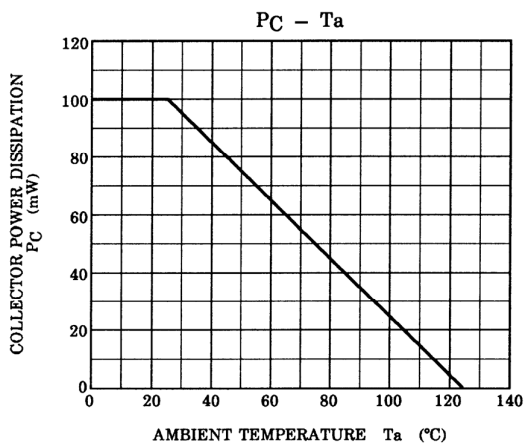
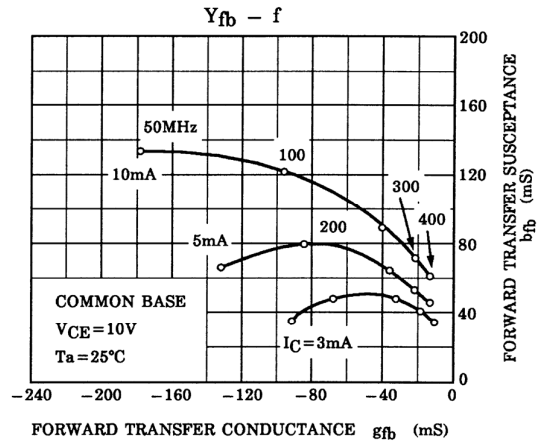
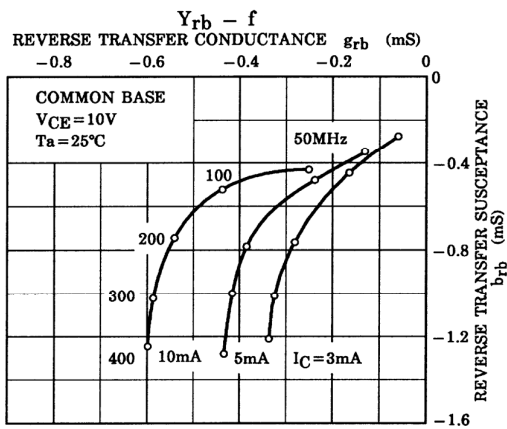
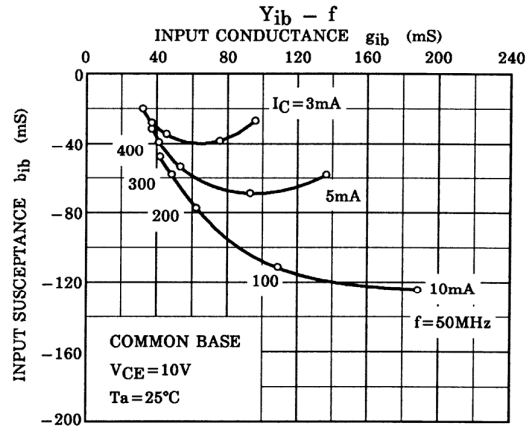
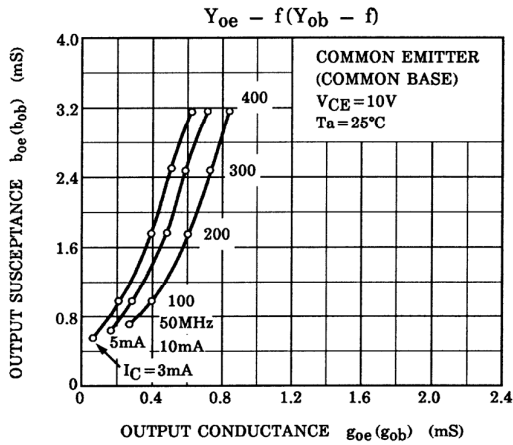
## Electrical Characteristics (Ta = 25°C)

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		$I_{EBO}$	$V_{EB} = 3\text{ V}, I_C = 0$	—	—	0.1	$\mu\text{A}$
Collector-emitter breakdown voltage		$V_{(BR)CEO}$	$I_C = 1\text{ mA}, I_B = 0$	25	—	—	V
DC current gain		$h_{FE}$	$V_{CE} = 10\text{ V}, I_C = 10\text{ mA}$	20	70	200	
Saturation voltage	Collector-emitter	$V_{CE(sat)}$	$I_C = 15\text{ mA}, I_B = 1.5\text{ mA}$	—	—	0.2	V
	Base-emitter	$V_{BE(sat)}$		—	—	1.5	
Collector output capacitance		$C_{ob}$	$V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$	—	1.1	1.6	pF
Collector-base time constant		$C_c, r_{bb}'$	$V_{CB} = 10\text{ V}, I_C = 1\text{ mA}, f = 30\text{ MHz}$	—	—	25	ps
Transition frequency		$f_T$	$V_{CE} = 10\text{ V}, I_C = 10\text{ mA}$	250	600	—	MHz

## Marking







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20070701-EN GENERAL

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