TOSHIBA Transistor Silicon NPN Epitaxial Planar Type

2SC3125

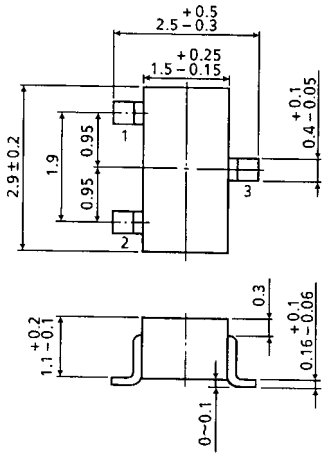
TV Final Picture IF Amplifier Applications

- Good linearity of f_T

Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	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	150	mW
Junction temperature	T_j	125	°C
Storage temperature range	T_{stg}	−55~125	°C

Unit: mm



1. BASE
2. EMITTER
3. COLLECTOR

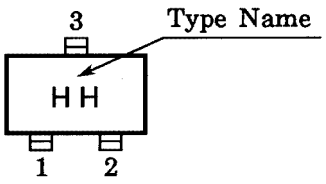
JEDEC	—
JEITA	SC-59
TOSHIBA	2-3F1A

Weight: 0.012 g (typ.)

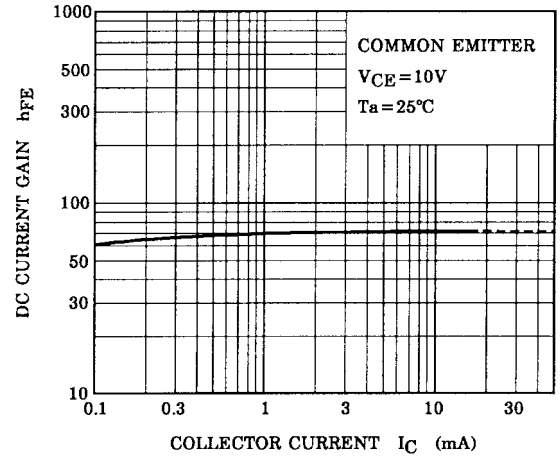
Electrical Characteristics (Ta = 25°C)

Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current		I_{CBO}	V_{CB} = 30 V, I_E = 0	—	—	0.1	μA
Emitter cut-off current		I_{EBO}	V_{EB} = 3 V, I_C = 0	—	—	0.1	μA
Collector-emitter breakdown voltage		$V_{(BR)CEO}$	I_C = 10 mA, I_B = 0	25	—	—	V
DC current gain		h_{FE}	V_{CE} = 10 V, I_C = 10 mA	20	70	200	
Saturation voltage	Collector-emitter	$V_{CE (sat)}$	I_C = 15 mA, I_B = 1.5 mA	—	—	0.2	V
	Base-emitter	$V_{BE (sat)}$		—	—	1.5	
Collector output capacitance		C_{ob}	V_{CB} = 10 V, I_E = 0, f = 1 MHz	—	1.1	1.6	pF
Collector-base time constant		C_c.rbb'	V_{CB} = 10 V, I_C = 1 mA, f = 30 MHz	—	—	25	ps
Transition frequency		f_T	V_{CE} = 10 V, I_C = 10 mA	250	600	—	MHz

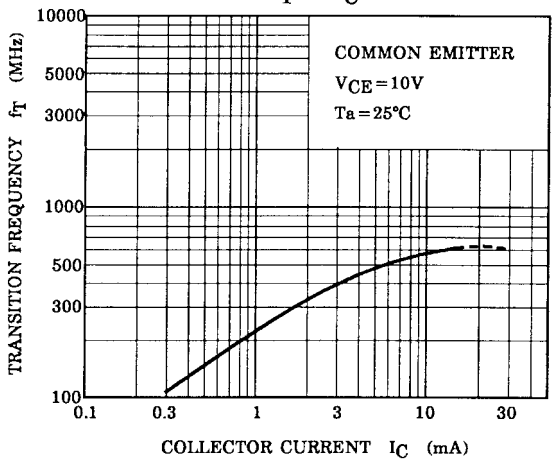
Marking



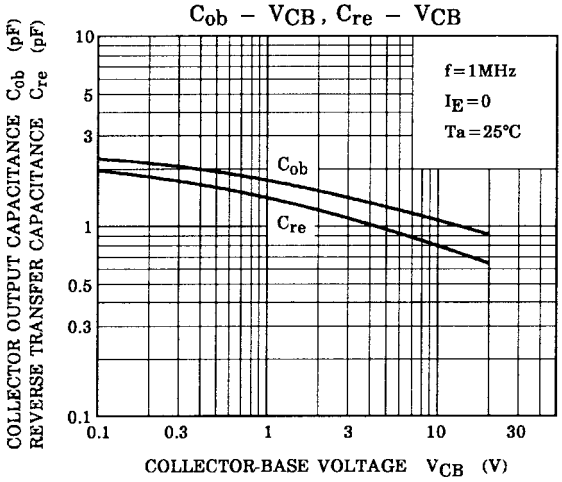
h_{FE} – I_C



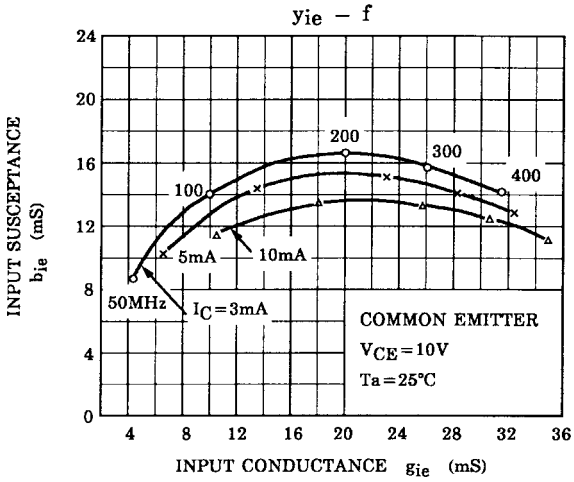
f_T – I_C



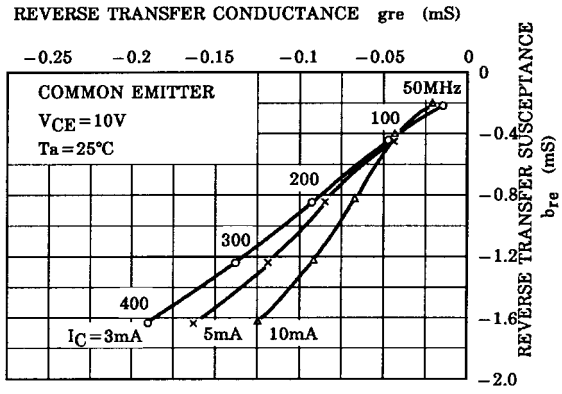
C_{ob} – V_{CB}, C_{re} – V_{CB}



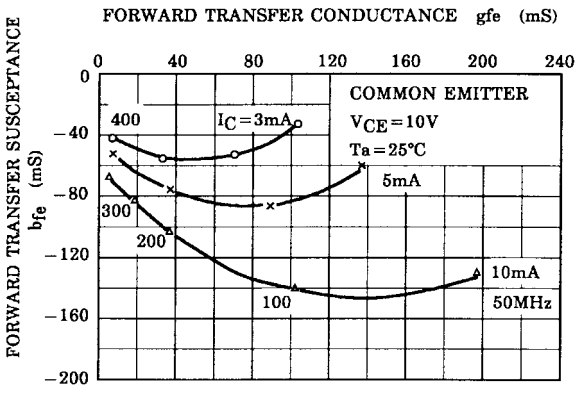
y_{ie} – f



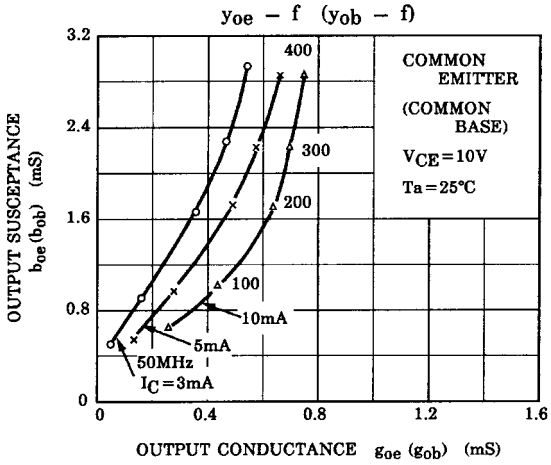
y_{re} – f



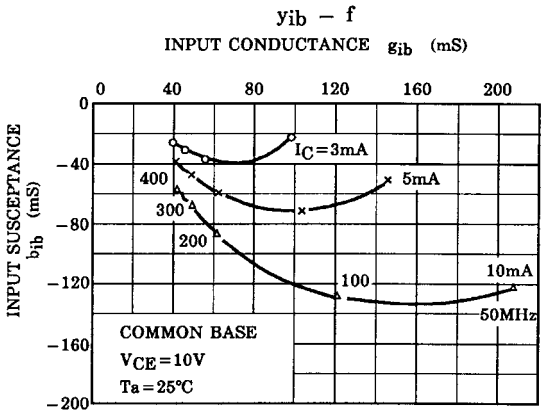
y_{fe} – f



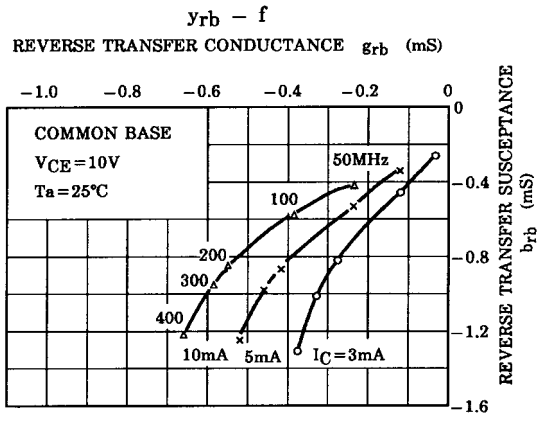
y_{oe} – f (y_{ob} – f)



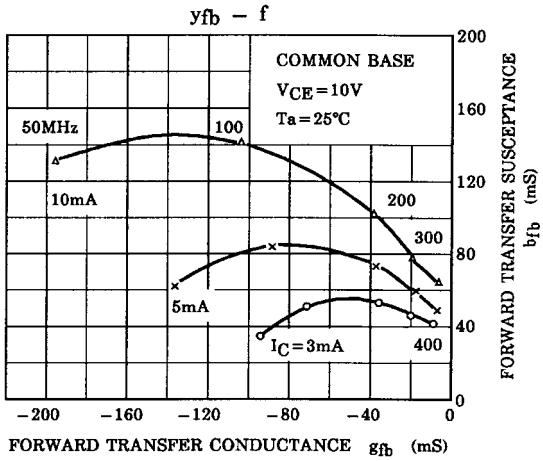
y_{ib} – f



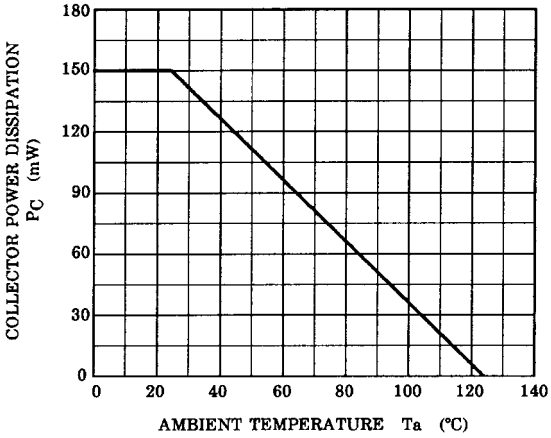
y_{rb} – f



y_{fb} – f



P_C – Ta



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