

<Transistor>

2SC5397

For High Frequency Amplify, Medium Frequency Amplify
Silicon NPN Epitaxial Type Micro(Frame type)

DESCRIPTION

2SC5397 is a silicon NPN epitaxial type transistor.

FEATURE

- High gain 10.7MHz MAG=45dB typ
- Low noise 10.7MHz NF=3.0dB typ
- Low yre 10.7MHz yre=-j0.11mS typ
- Small package

APPLICATION

High frequency amplify, oscillating, frequency exchange, medium frequency amplify for small communication machine, FM/AM radio.

MAXIMUM RATINGS (Ta=25°C)

SYMBOL	PARAMETER	RATINGS	UNIT
V _{CB0}	Collector to Base voltage	30	V
V _{EB0}	Emitter to Base voltage	4	V
V _{CE0}	Collector to Emitter voltage	25	V
I _C	Collector current	30	mA
P _C	Collector dissipation (Ta=25°C)	450	mW
T _J	Junction temperature	+125	°C
T _{stg}	Storage temperature	-55to+125	°C

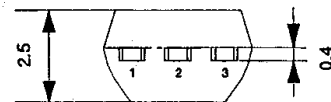
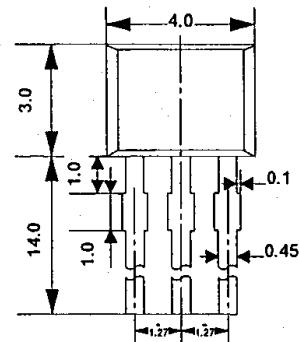
ELECTRICAL CHARACTERISTICS (Ta=25°C)

SYMBOL	PARAMETER	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
I _{CBO}	Collector cut off current	V _{CB} =30V, I _E =0			1	μA
I _{EBO}	Emitter cut off current	V _{EB} =4V, I _C =0			1	μA
h _{FE} *	DC forward current gain	V _{CE} =6V, I _C =1mA	35		300	—
f _T	Gain band width product	V _{CE} =6V, I _E =-1mA	150	200		MHz
C _{ob}	Collector output capacitance	V _{CB} =6V, I _E =0, f=1MHz		2.0	2.7	pF
C _{crb'b}	Base time constant	V _{CB} =6V, I _E =-1mA, f=31.8MHz		20	60	pS
NF	Noise figure	V _{CE} =6V, I _E =-1mA, f=10.7MHz, R _G =500Ω		3.0		dB

ITEM	B	C	D	E
h _{FE}	35~70	55~110	90~180	150~300

OUTLINE DRAWING

UNIT:mm



TERMINAL CONNECTOR

- ① : EMITTER EIAJ : —
 ② : COLLECTOR JEDEC : —
 ③ : BASE

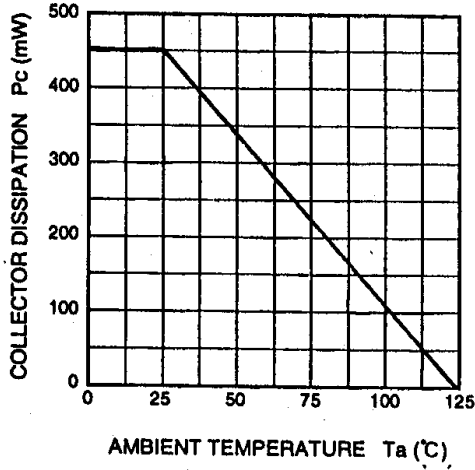
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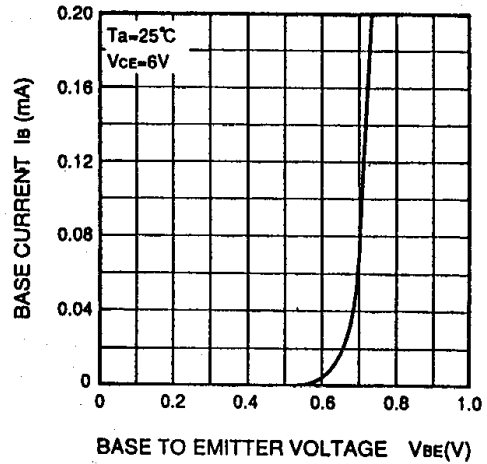
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TYPICAL CHARACTERISTICS

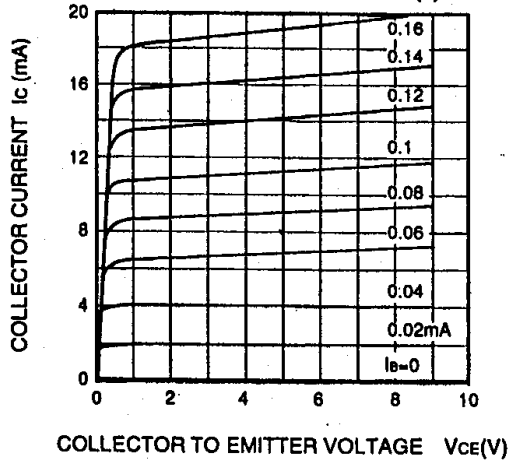
COLLECTOR DISSIPATION
VS. AMBIENT TEMPERATURE



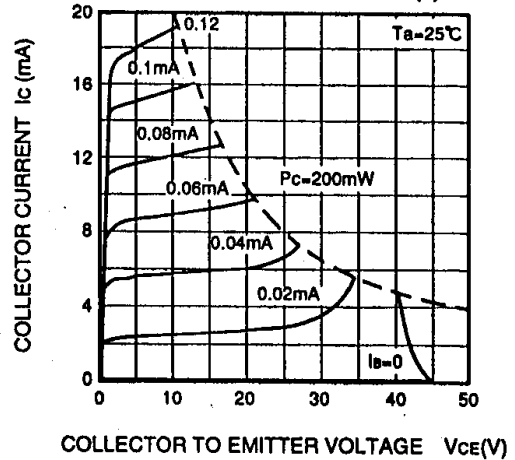
COMMON EMITTER INPUT



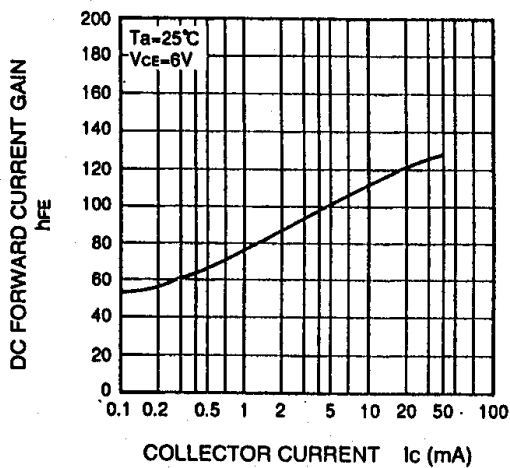
COMMON EMITTER OUTPUT (1)



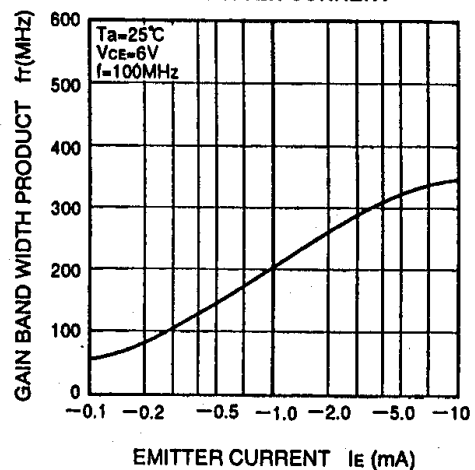
COMMON EMITTER OUTPUT (2)



DC FORWARD CURRENT GAIN
VS. COLLECTOR CURRENT



GAIN BAND WIDTH PRODUCT
VS. EMITTER CURRENT



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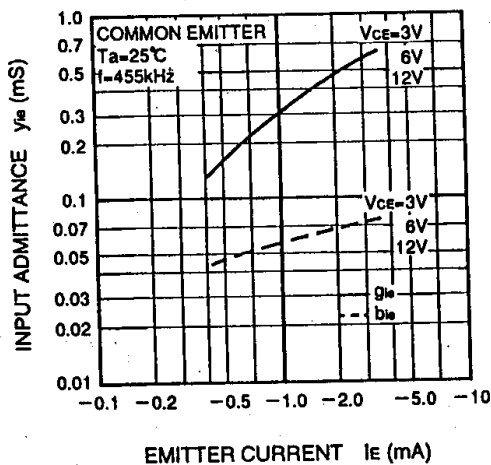
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COMMON EMITTER, y PARAMETER (TYPICAL VALUE)

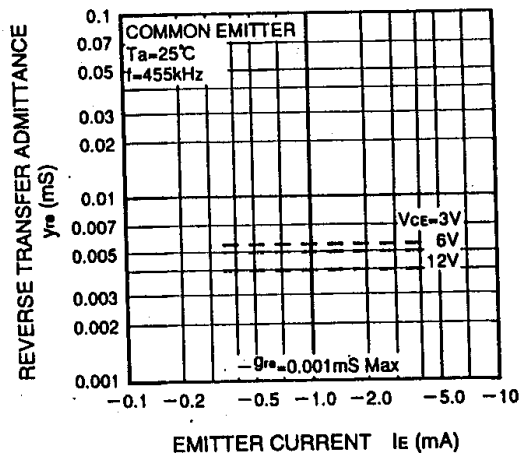
Test conditions		f=455kHz VCE=6V IE=-1mA	f=1MHz VCE=6V IE=-1mA	f=10.7MHz VCE=6V IE=-1mA	f=100MHz VCE=6V IE=-1mA
y _{ie} (mS)	g _{ie}	0.30	0.30	0.38	4.4
	b _{ie}	0.06	0.12	1.40	11.0
y _{re} (mS)	-g _{re}	0.001Max	0.001Max	0.005Max	0.05Max
	-b _{re}	0.005	0.010	0.11	1.0
y _{fe} (mS)	g _{fe}	50	46	37	25
	-b _{fe}	1.0Max	1.0Max	2.8	16
y _{oe} (mS)	g _{oe}	0.010	0.012	0.03	0.32
	b _{oe}	0.011	0.022	0.18	1.3

COMMON EMITTER, 455kHz y PARAMETER

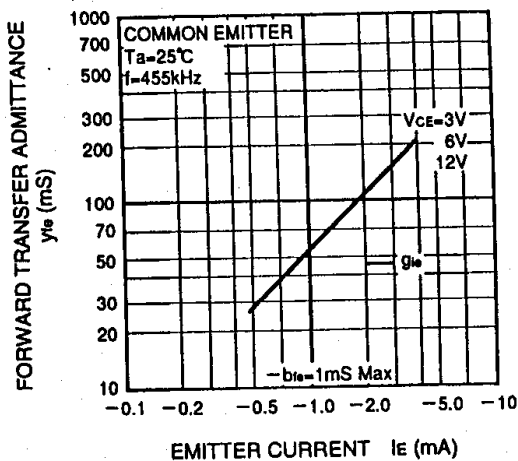
INPUT ADMITTANCE VS. EMITTER CURRENT



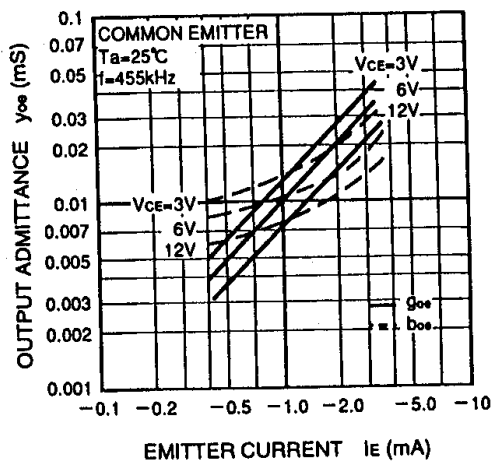
REVERSE TRANSFER ADMITTANCE VS. EMITTER CURRENT



FORWARD TRANSFER ADMITTANCE VS. EMITTER CURRENT



OUTPUT ADMITTANCE VS. EMITTER CURRENT

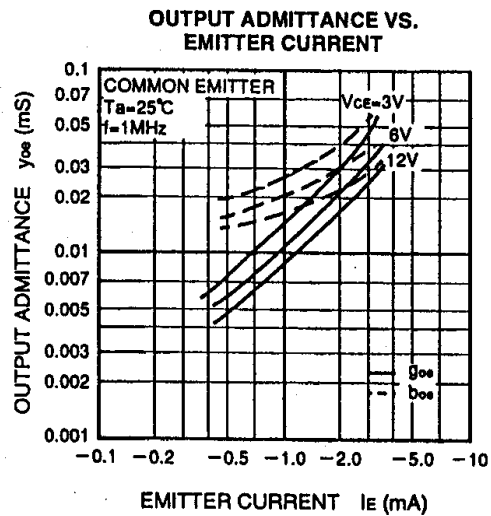
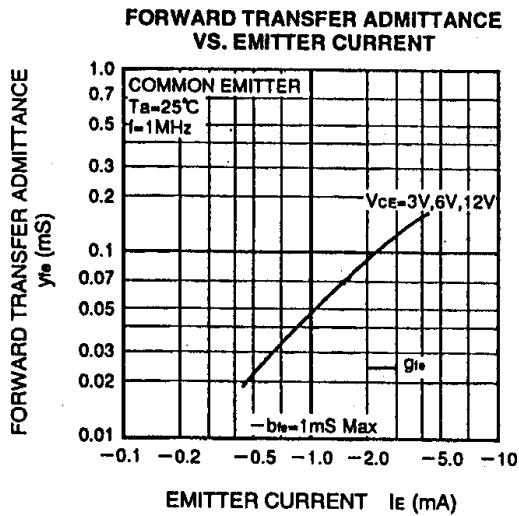
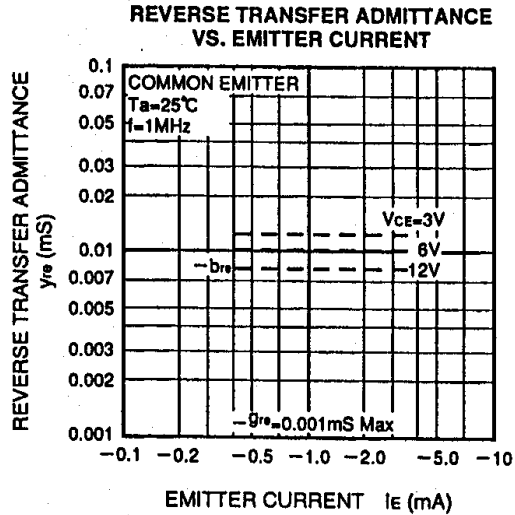
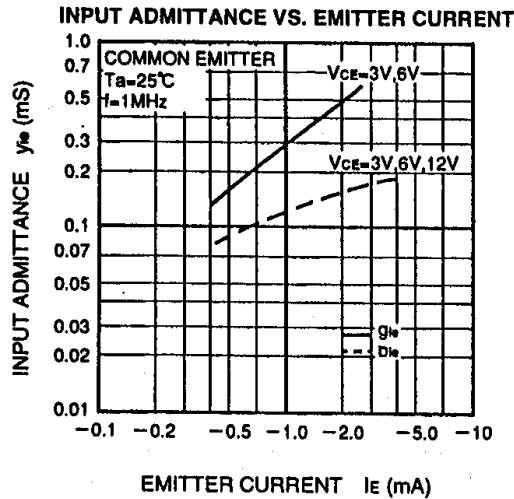


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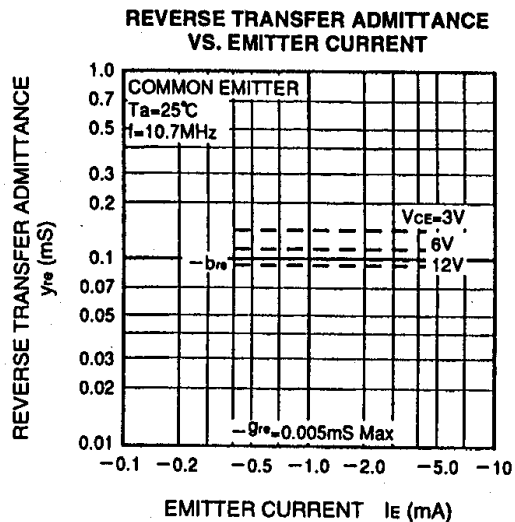
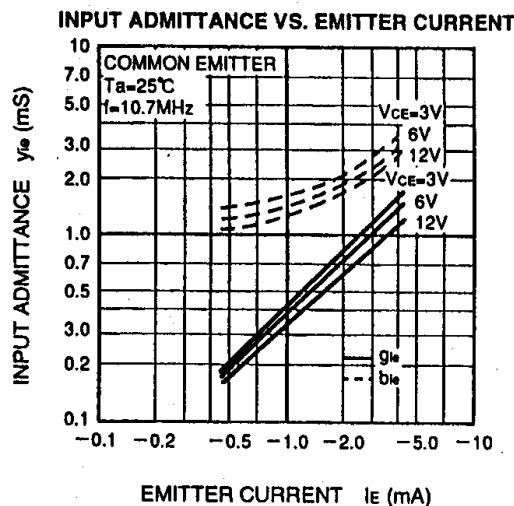
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COMMON EMITTER, 1MHz y PARAMETER



COMMON EMITTER, 10.7MHz y PARAMETER

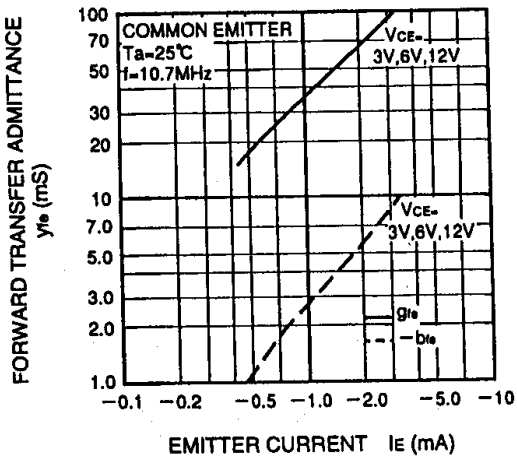


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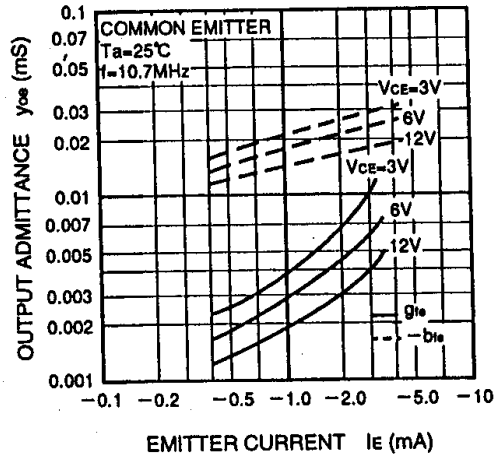
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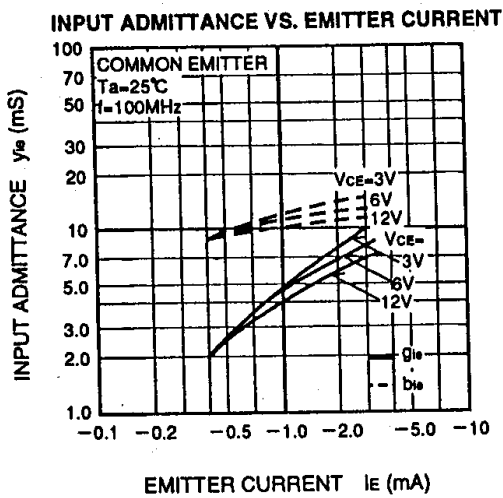
**FORWARD TRANSFER ADMITTANCE
VS. EMITTER CURRENT**



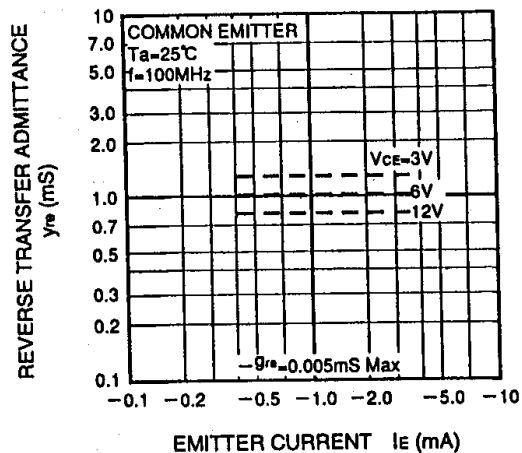
OUTPUT ADMITTANCE VS. EMITTER CURRENT



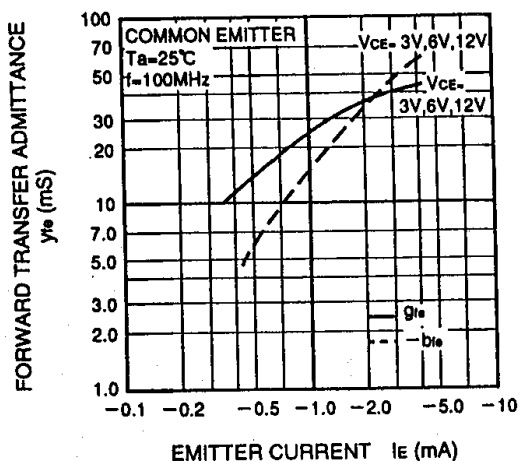
COMMON EMITTER, 100MHz y PARAMETER



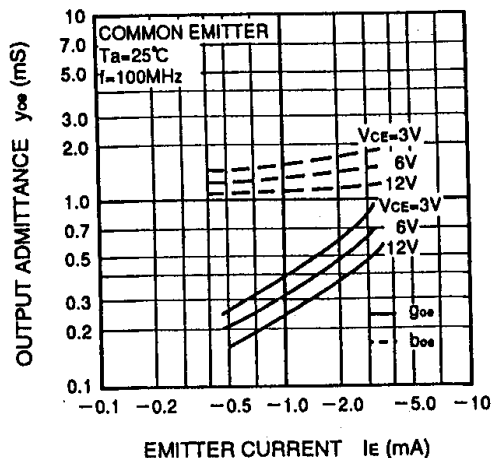
**REVERSE TRANSFER ADMITTANCE
VS. EMITTER CURRENT**



**FORWARD TRANSFER ADMITTANCE
VS. EMITTER CURRENT**



**OUTPUT ADMITTANCE VS.
EMITTER CURRENT**



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