〈transistor〉

2SC5397

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

DESCRIPTION

2SC5397 is a silicon NPN epitaxial type transistor.

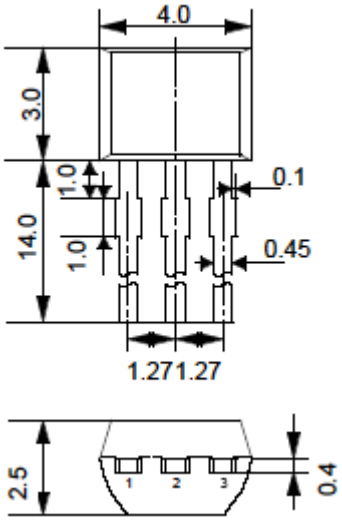
FEATURE

- 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.

OUTLINE DRAWING UNIT:mm

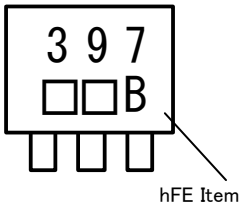


TERMINAL CONNECTOR
①:EMITTER
②:COLLECTOR
③:BASE
EIAJ: –
JEDEC: –

MAXIMUM RATINGS(Ta=25℃)

Symbol	Parameter	Ratings	Unit
V_{CBO}	Collector to Base voltage	30	V
V_{EBO}	Emitter to Base voltage	4	V
V_{CEO}	Collector to Emitter voltage	25	V
I_C	Collector current	30	mA
P_C	Collector dissipation	450	mW
Tj	Junction temperature	+150	℃
Tstg	Storage temperature	−55～+150	℃

MARKING



ELECTRICAL CHARACTERISTICS(Ta=25℃)

Parameter	Symbol	Test conditions	Limits			Unit
			Min	Typ	Max	
ICBO	Collector cut off current	V_{CB}= 30V , I_E= 0mA	–	–	1	μA
IEBO	Emitter cut off current	V_{EB}= 4V , I_C= 0mA	–	–	1	μA
hFE	DC forward current gain ※	V_{CE} = 6V , I_C= 1mA	35	–	300	–
fT	Gain bandwidth product	V_{CE}= 6V , I_E= −1mA	150	200	–	MHz
Cob	Collector output capacitance	V_{CB}= 6V , I_E= 0mA,f=1MHz	–	2.0	2.7	pF
Ccrb'b	Collector− base time constant	V_{CB}=6V, I E=−1mA, f=31.8MHz	–	20	60	pS
NF	Noise figure	V_{CE}= 6V , I_E= −0.1mA,f=1kHz,R_G=2kΩ		3.0	–	dB

※ : It shows hFE classification at right table.

Item	B	C	D	E
hFE	35～70	55～110	90～180	150～300

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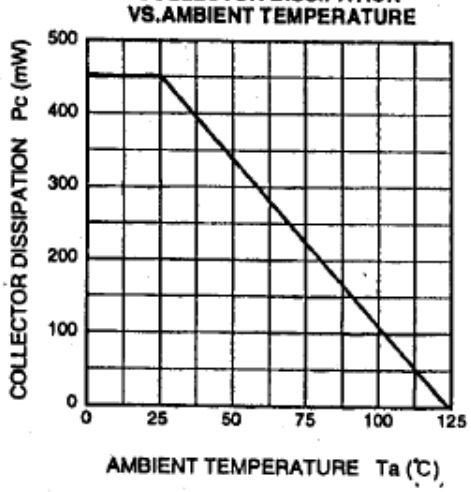
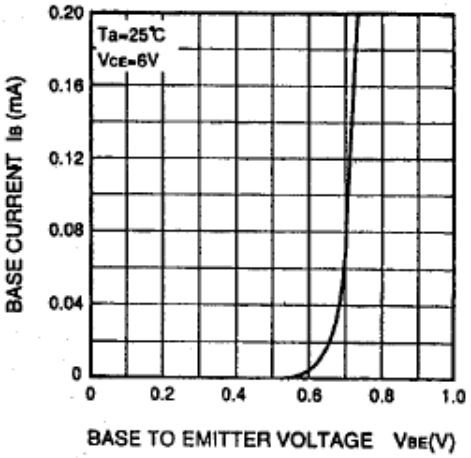
TYPICAL CHARACTERISTICS

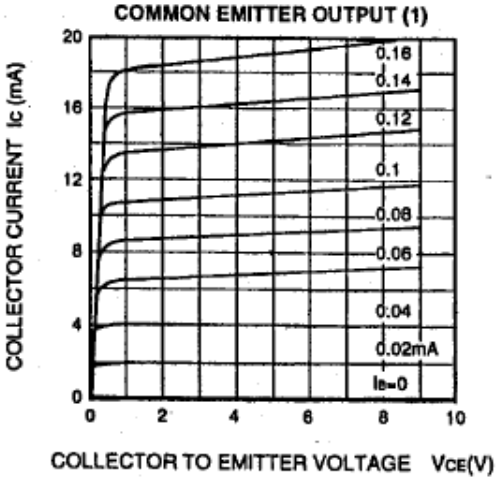
COLLECTOR DISSIPATION VS.AMBIENT TEMPERATURE



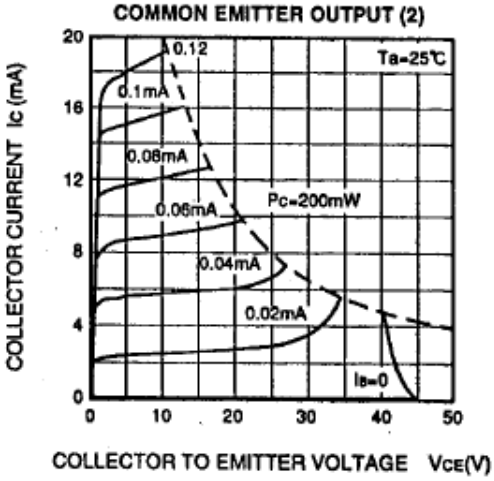
COMMON EMITTER INPUT



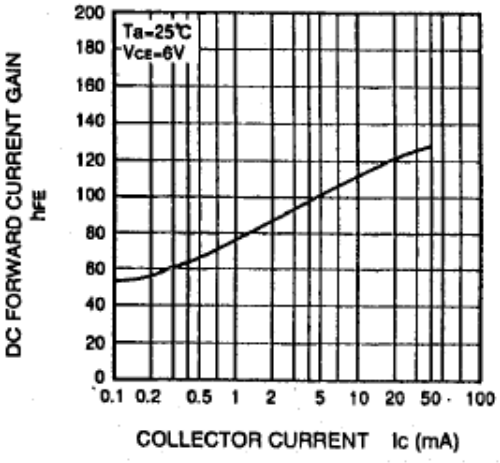
COMMON EMITTER OUTPUT (1)



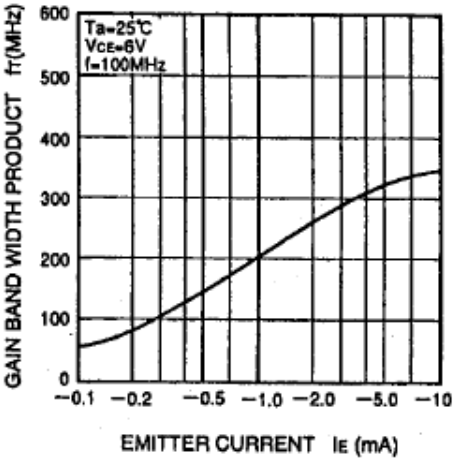
COMMON EMITTER OUTPUT (2)



DC FORWARD CURRENT GAIN VS. COLLECTOR CURRENT



GAIN BAND WIDTH PRODUCT VS. EMITTER CURRENT



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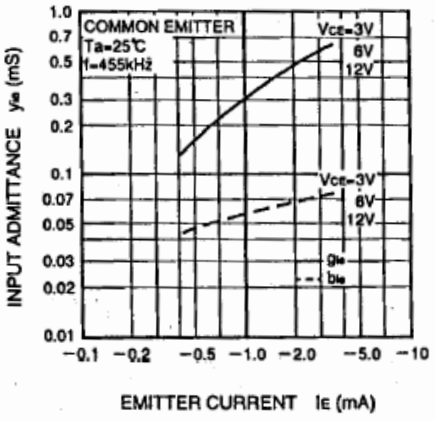
COMMON EMITTER, y PARAMETER (TYPICAL VALUE)

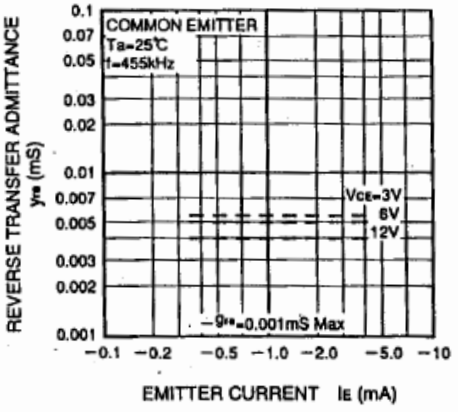
Test conditions / y Parameter		f=455kHz VCE=6V IE=−1mA	f=1MHz VCE=6V IE=−1mA	f=10.7MHz VCE=6V IE=−1mA	f=100MHz VCE=6V IE=−1mA
yie (mS)	gie	0.30	0.30	0.38	4.4
	bie	0.06	0.12	1.40	11.0
yre (mS)	−gre	0.001Max	0.001Max	0.005Max	0.05Max
	−bre	0.005	0.010	0.11	1.0
yfe (mS)	gfe	50	46	37	25
	−bfe	1.0Max	1.0Max	2.8	16
yoe (mS)	goe	0.010	0.012	0.03	0.32
	boe	0.011	0.022	0.18	1.3

COMMON EMITTER, 455kHz y PARAMETER

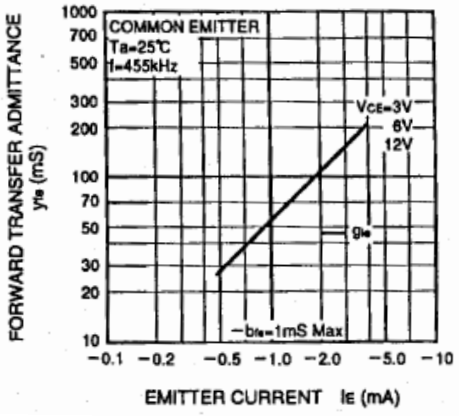
INPUT ADMITTANCE VS. EMITTER CURRENT



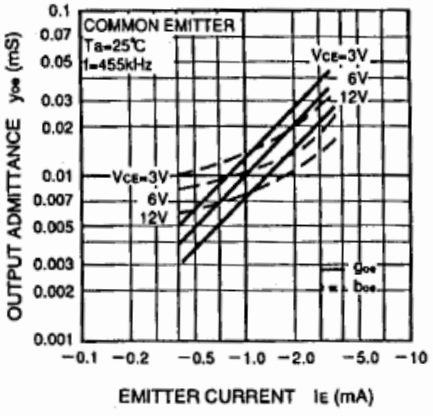
REVERSE TRANSFER ADMITTANCE VS. EMITTER CURRENT



FORWARD TRANSFER ADMITTANCE VS. EMITTER CURRENT



OUTPUT ADMITTANCE VS. EMITTER CURRENT



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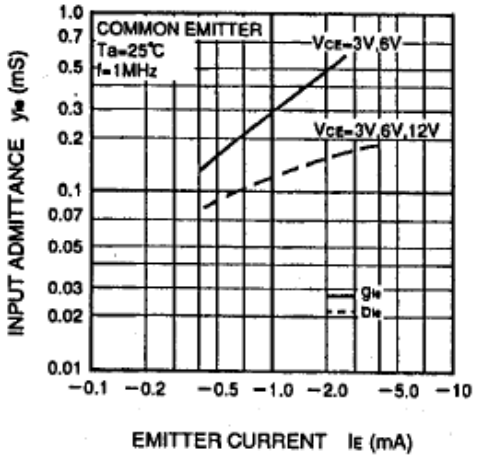
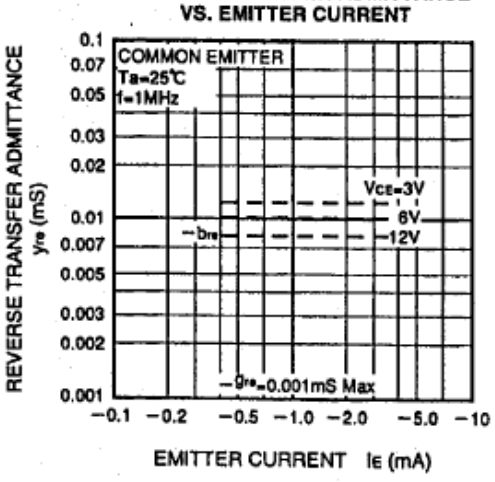
COMMON EMITTER, 1MHz y PARAMETER

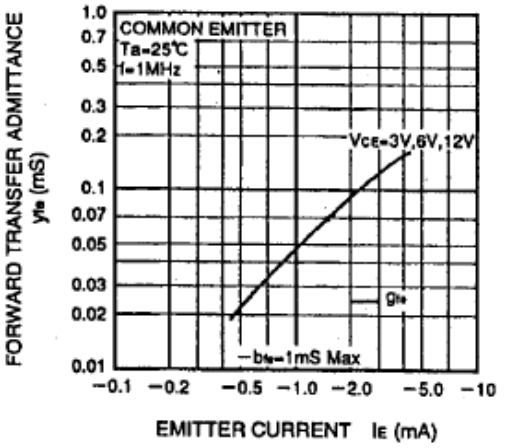
INPUT ADMITTANCE VS. EMITTER CURRENT



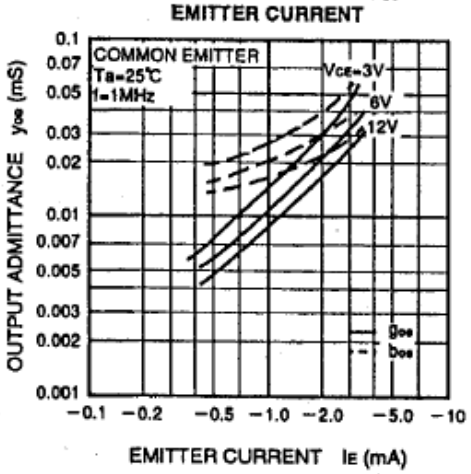
REVERSE TRANSFER ADMITTANCE VS. EMITTER CURRENT



FORWARD TRANSFER ADMITTANCE VS. EMITTER CURRENT

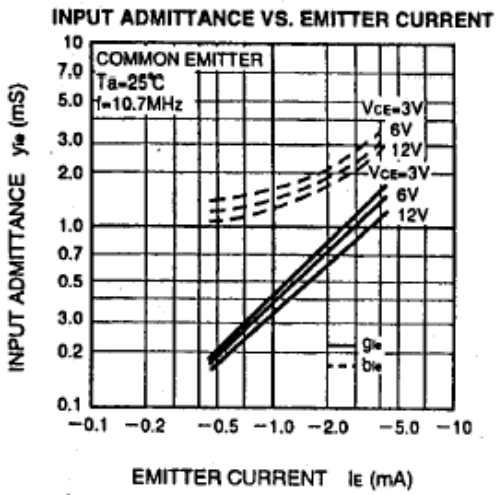


OUTPUT ADMITTANCE VS. EMITTER CURRENT

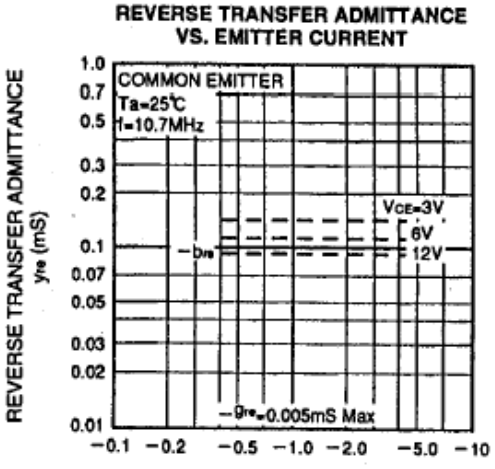


COMMON EMITTER, 10.7MHz y PARAMETER

INPUT ADMITTANCE VS. EMITTER CURRENT



REVERSE TRANSFER ADMITTANCE VS. EMITTER CURRENT



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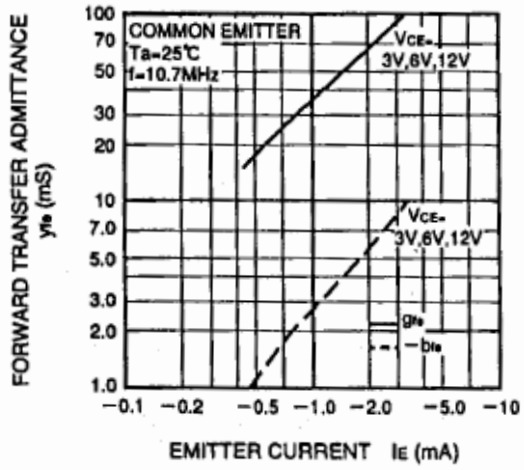
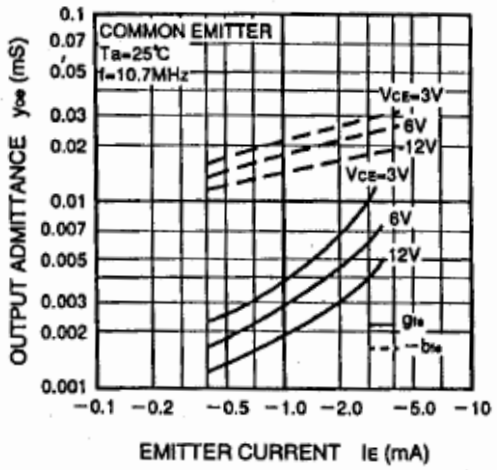
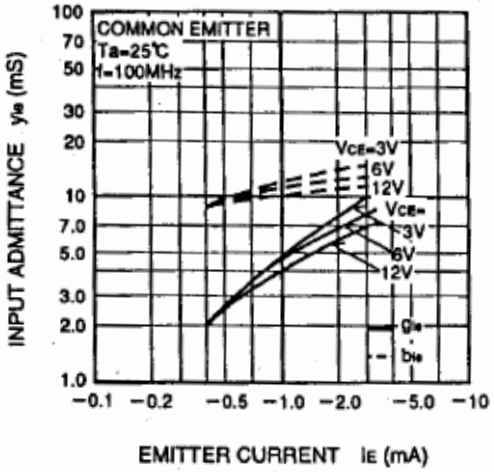


OUTPUT ADMITTANCE VS. EMITTER CURRENT

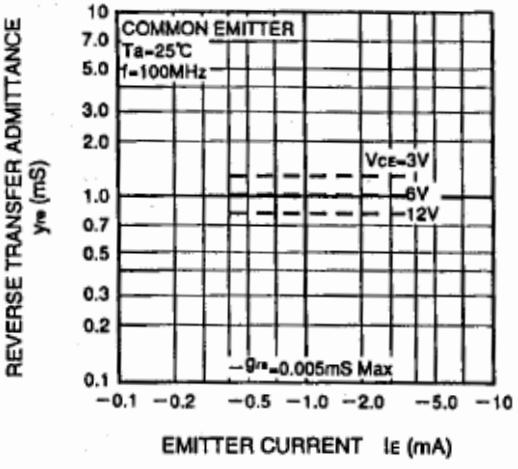


COMMON EMITTER, 100MHz y PARAMETER

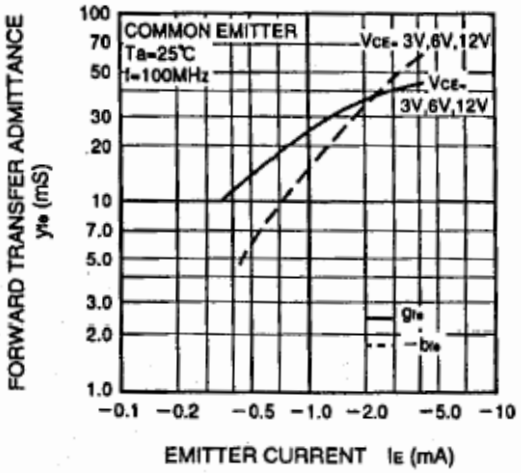
INPUT ADMITTANCE VS. EMITTER CURRENT



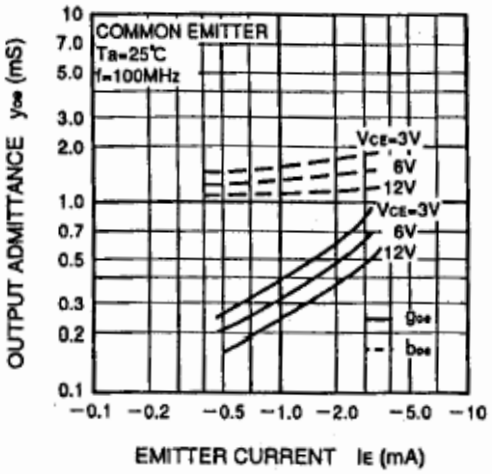
REVERSE TRANSFER ADMITTANCE VS. EMITTER CURRENT



FORWARD TRANSFER ADMITTANCE VS. EMITTER CURRENT



OUTPUT ADMITTANCE VS. EMITTER CURRENT



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Feb.2012