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<Transistor>

**2SC5396**

For FM · AM Radio High Frequency Amplify Application  
Silicon NPN Epitaxial Type Micro(Frame type)

**DESCRIPTION**

2SC5396 is a silicon NPN epitaxial type transistor. It is designed for high frequency amplify application.

**FEATURE**

- High  $f_T$  at low current range ,small  $C_{crb'b}$   
 $f_T=470\text{MHz typ (}I_c=1\text{mA)}$   
 $C_{crb'b}=15\text{pS typ (}I_c=1\text{mA)}$
- Low noise figure       $NF=2.5\text{dB typ (}f_T=100\text{MHz)}$

**APPLICATION**

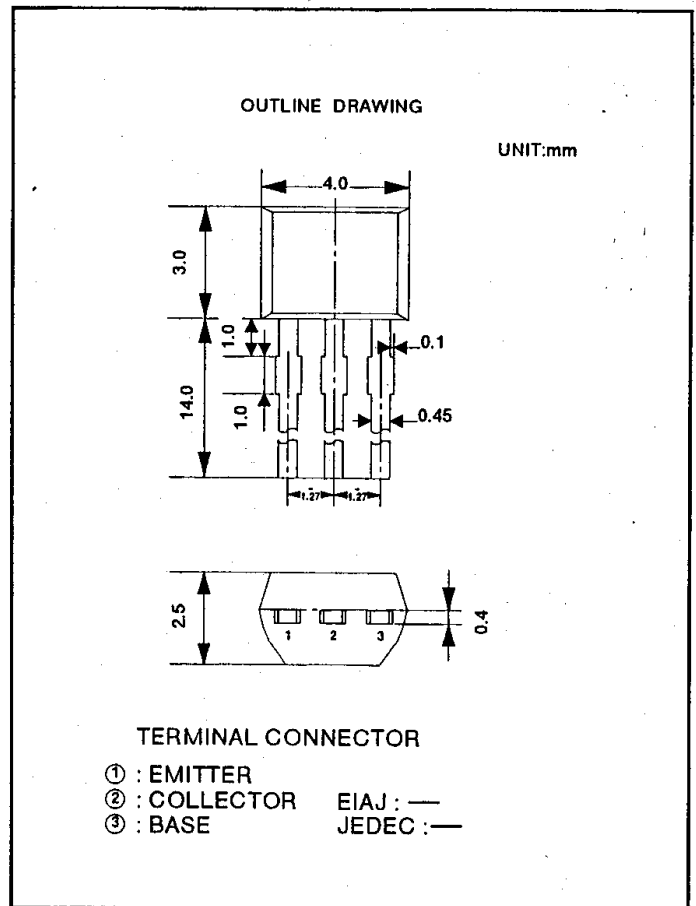
FM radio tuner ,VHF band amplify.

**MAXIMUM RATINGS (Ta=25°C)**

SYMBOL	PARAMETER	RATINGS	UNIT
V <sub>CB0</sub>	Collector to Base voltage	25	V
V <sub>EB0</sub>	Emitter to Base voltage	3	V
V <sub>CEO</sub>	Collector to Emitter voltage	12	V
I <sub>c</sub>	Collector current	20	mA
P <sub>c</sub>	Collector dissipation (Ta=25°C)	240	mW
T <sub>j</sub>	Junction temperature	+125	°C
T <sub>stg</sub>	Storage temperature	-55to+125	°C

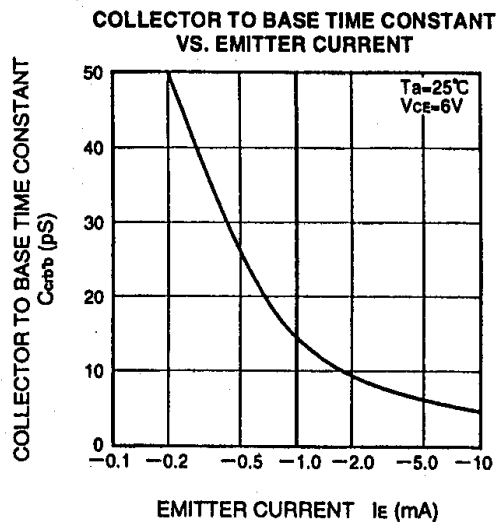
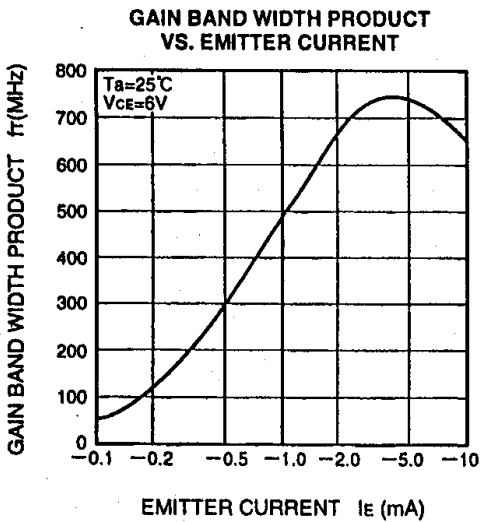
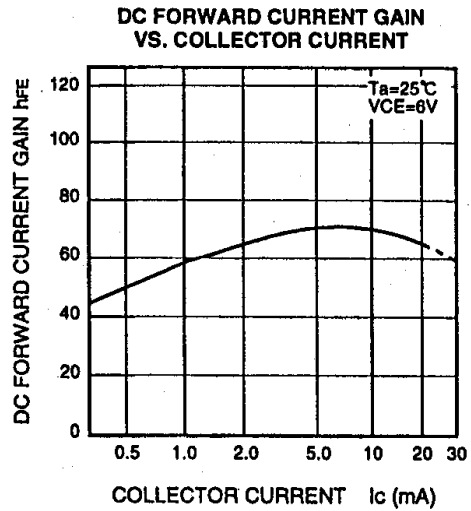
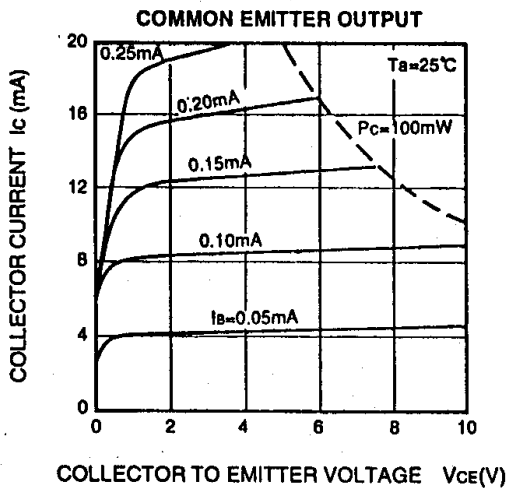
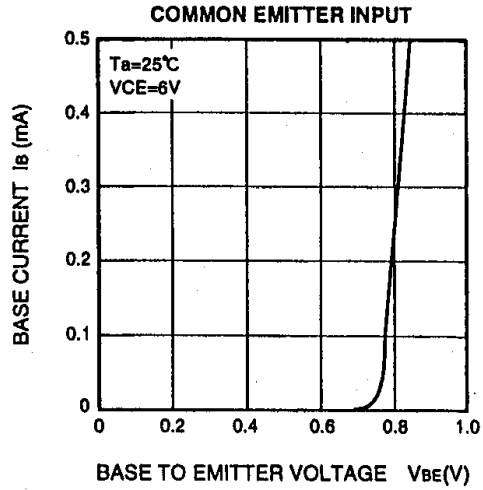
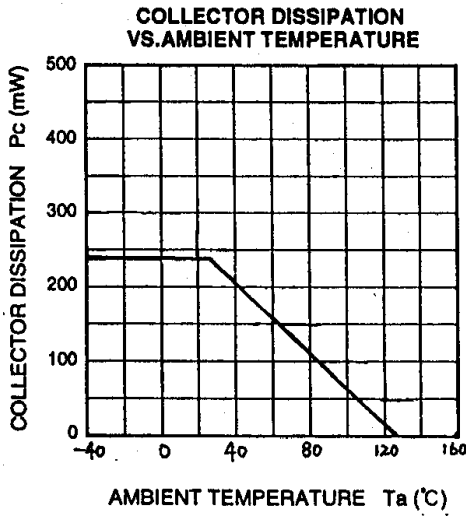
**ELECTRICAL CHARACTERISTICS (Ta=25°C)**

SYMBOL	PARAMETER	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
I <sub>CB0</sub>	Collector cut off current	V <sub>CB</sub> =12V, I <sub>E</sub> =0			0.5	μA
I <sub>EB0</sub>	Emitter cut off current	V <sub>EB</sub> =2V, I <sub>C</sub> =0			1.0	μA
h <sub>FE</sub> *	DC forward current gain	V <sub>CE</sub> =6V, I <sub>C</sub> =1mA	35		180	—
f <sub>T</sub>	Gain band width product	V <sub>CE</sub> =6V, I <sub>E</sub> =-1mA	400	470		MHz
C <sub>ob</sub>	Collector output capacitance	V <sub>CB</sub> =6V, I <sub>E</sub> =0, f=1MHz		1.4	2.0	pF
C <sub>crb'b</sub>	Base time constant	V <sub>CB</sub> =6V, I <sub>E</sub> =-1mA, f=31.8MHz		15	25	pS
NF	Noise figure	V <sub>CE</sub> =6V, I <sub>E</sub> =-1mA, f=100MHz, R <sub>G</sub> =50Ω		2.5		dB
MAG	Max effective power gain	V <sub>CE</sub> =6V, I <sub>E</sub> =-1mA, f=100MHz		37		dB



ITEM	B	C	D
h <sub>FE</sub>	35~70	55~110	90~180

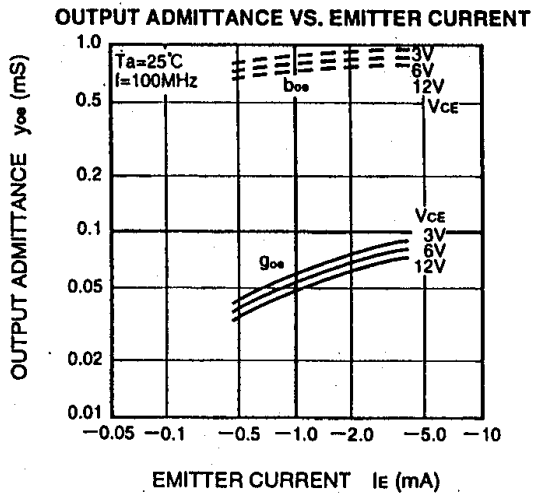
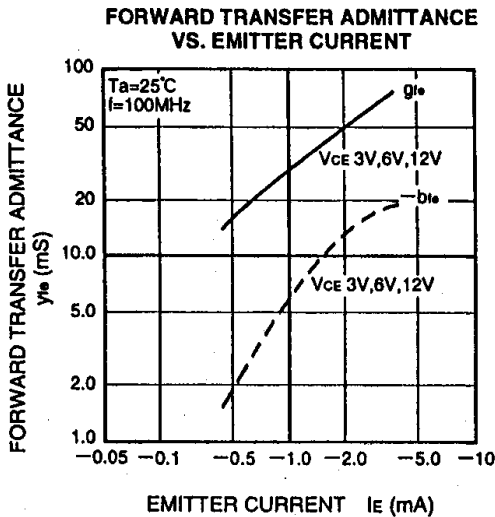
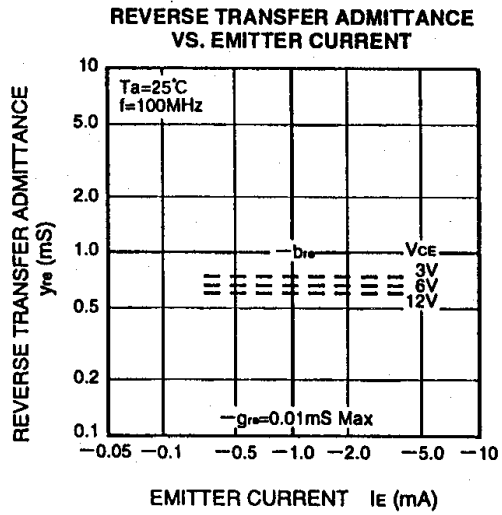
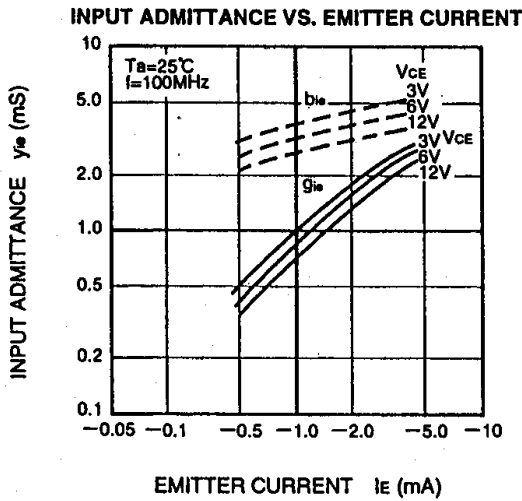
TYPICAL CHARACTERISTICS



COMMON EMITTER, 100MHz, y PARAMETER (TYPICAL VALUE)

Symbol	Test conditions	Limits	Unit
$y_{ie}$	$g_{ie}$	0.9	mS
	$b_{ie}$	3.3	
$y_{re}$	$-g_{re}$	0.01 Max	mS
	$-b_{re}$	0.7	
$y_{fe}$	$g_{fe}$	30	mS
	$-b_{fe}$	6.0	
$y_{oe}$	$g_{oe}$	0.05	mS
	$b_{oe}$	0.9	

COMMON EMITTER, 100MHz y PARAMETER





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