

<Transistor>

# 2SC5384

For High Frequency Amplify, Medium Frequency Amplify Application  
Silicon NPN Epitaxial Type Ultra Super Mini

## DESCRIPTION

2SC5384 is a super mini silicon NPN epitaxial type transistor designed for high frequency amplify, oscillating, frequency exchange, medium frequency amplify application.

## FEATURE

- High gain (@10.7MHz), MAG=45dB typ
- Low noise (@10.7MHz), NF=3.0dB typ
- Small yre (@10.7MHz), yre=-j0.11mS typ
- Super mini package for easy mounting

## APPLICATION

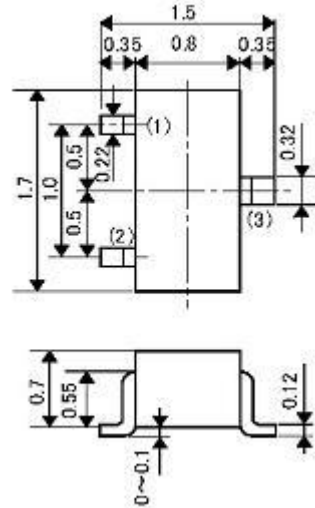
High frequency amplify, oscillating, frequency exchange, medium frequency amplify for small communication machine, FM/AM radio.

## MAXIMUM RATINGS (Ta=25°C)

SYMBOL	PARAMETER	RATINGS	UNIT
VcBo	Collector to Base voltage	30	V
VEBo	Emitter to Base voltage	4	V
VCEo	Collector to Emitter voltage	25	V
Ic	Collector current	30	mA
Pc	Collector dissipation (Ta=25°C)	125	mW
Tj	Junction temperature	+125	°C
Tstg	Storage temperature	-55 to +125	°C

## OUTLINE DRAWING

UNIT:mm



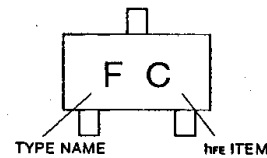
Terminal Connector

- ① : Base
  - ② : Emitter
  - ③ : Collector
- EIAJ : —  
JEDEC : —

Note)

The dimension without tolerance represent central value.

## MARKING



## ELECTRICAL CHARACTERISTICS (Ta=25°C)

SYMBOL	PARAMETER	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
IcBo	Collector cut off current	VcB=25V, I E=0			1	μA
I EBo	Emitter cut off current	VEB=4V, I c=0			1	μA
hFE *	DC forward current gain	VCE=6V, I c=1mA	35		180	—
VCE(sat)	C to E saturation voltage	I c=10mA, I B=1mA		0.1	0.3	V
ft	Gain band width product	VCE=6V, I E=-1mA	150	200		MHz
Cob	Collector output capacitance	VcB=6V, I E=0, f=1MHz		2.0	2.7	pF
Ccrb'b	Base time constant	VcB=6V, I E=-1mA, f=31.8MHz		20	60	pS
NF	Noise figure	VCE=6V, I E=-1mA, f=10.7MHz, Rg=500Ω		3.0		dB

ITEM	B	C	D
hFE	35~70	55~110	90~180

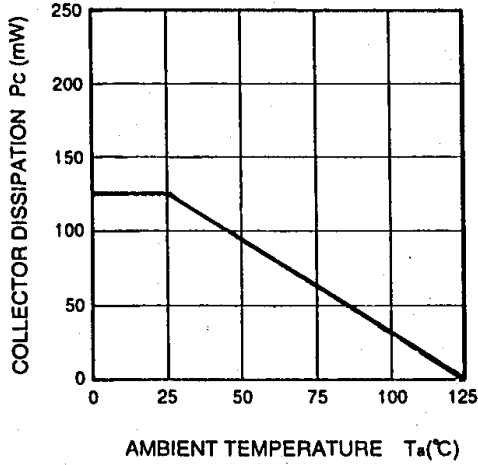
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# 2SC5384

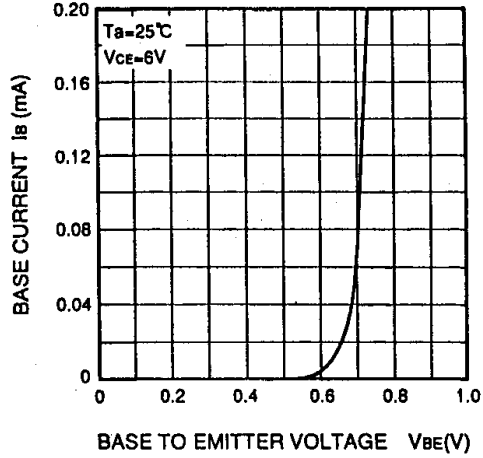
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## TYPICAL CHARACTERISTICS

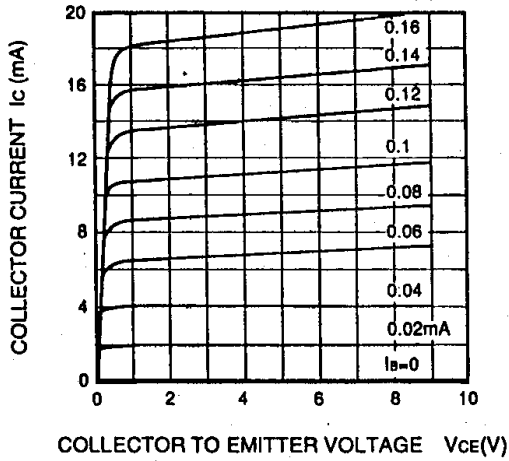
COLLECTOR DISSIPATION VS. AMBIENT TEMPERATURE



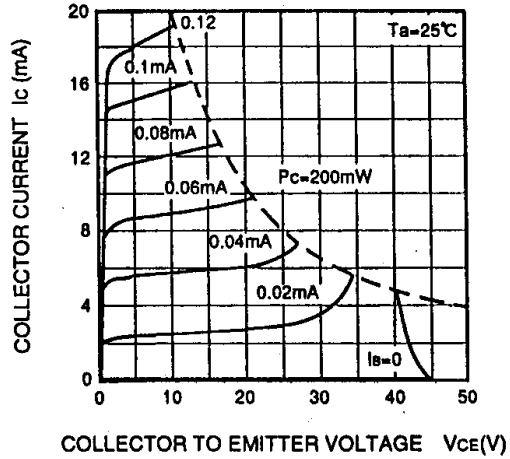
COMMON EMITTER INPUT



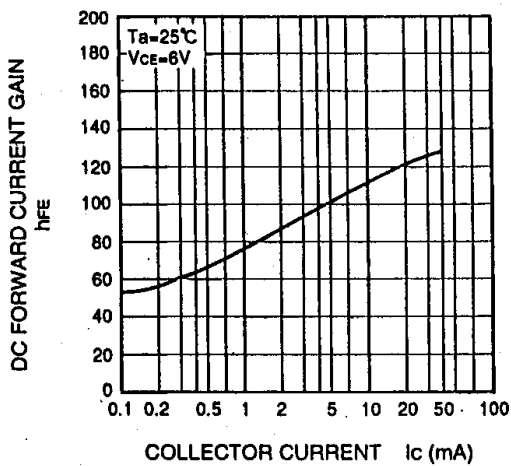
COMMON EMITTER OUTPUT (1)



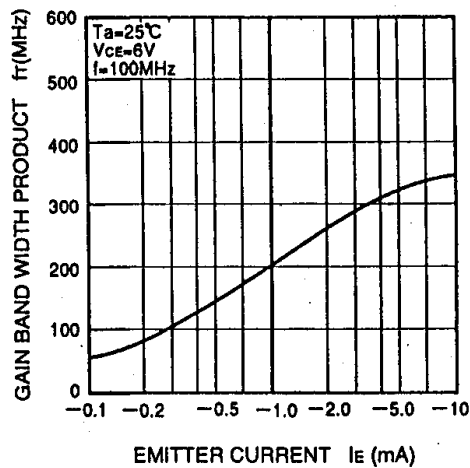
COMMON EMITTER OUTPUT (2)



DC FORWARD CURRENT GAIN VS. COLLECTOR CURRENT



GAIN BAND WIDTH PRODUCT VS. EMITTER CURRENT



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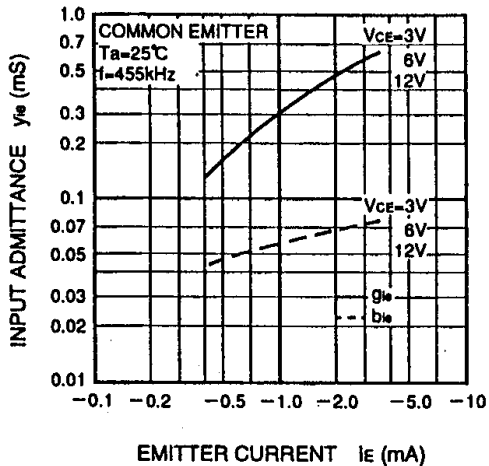
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## COMMON EMITTER, y PARAMETER (TYPICAL VALUE)

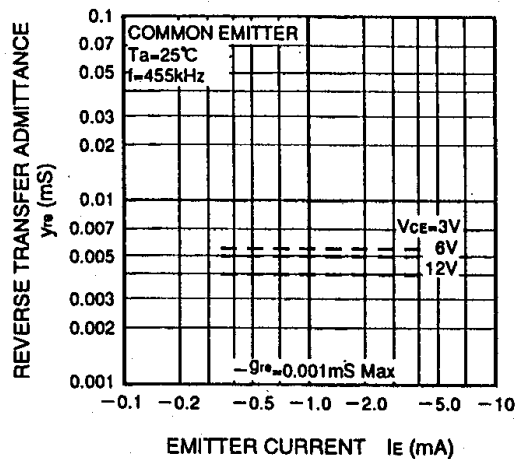
Test conditions		f=455kHz VCE=6V IE=-1mA	f=1MHz VCE=6V IE=-1mA	f=10.7MHz VCE=6V IE=-1mA	f=100MHz VCE=6V IE=-1mA
y <sub>ie</sub> (mS)	g <sub>ie</sub>	0.30	0.30	0.38	4.4
	b <sub>ie</sub>	0.06	0.12	1.40	11.0
y <sub>re</sub> (mS)	-g <sub>re</sub>	0.001Max	0.001Max	0.005Max	0.05Max
	-b <sub>re</sub>	0.005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

## COMMON EMITTER, 455kHz y PARAMETER

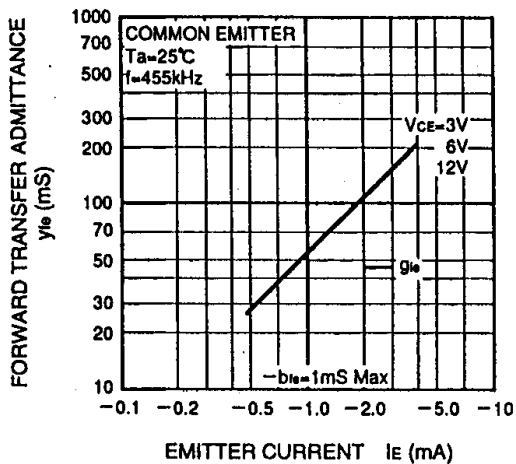
INPUT ADMITTANCE VS. EMITTER CURRENT



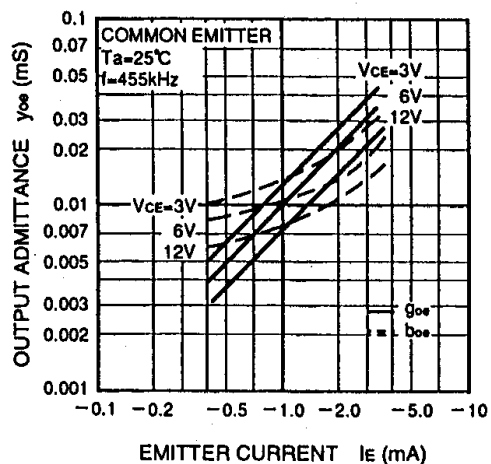
REVERSE TRANSFER ADMITTANCE VS. EMITTER CURRENT



FORWARD TRANSFER ADMITTANCE VS. EMITTER CURRENT



OUTPUT ADMITTANCE VS. EMITTER CURRENT

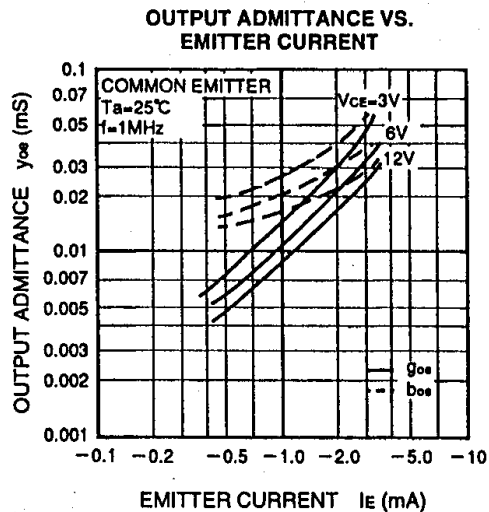
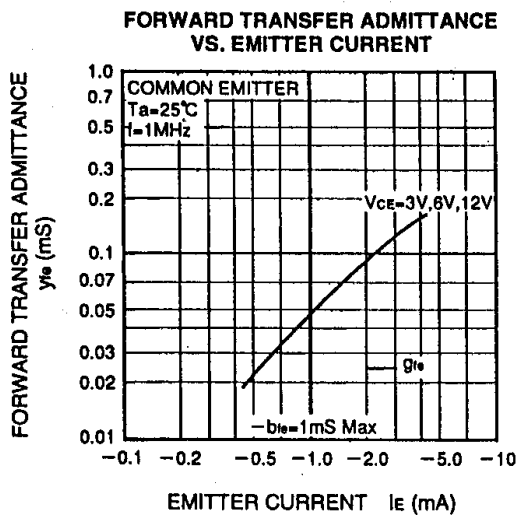
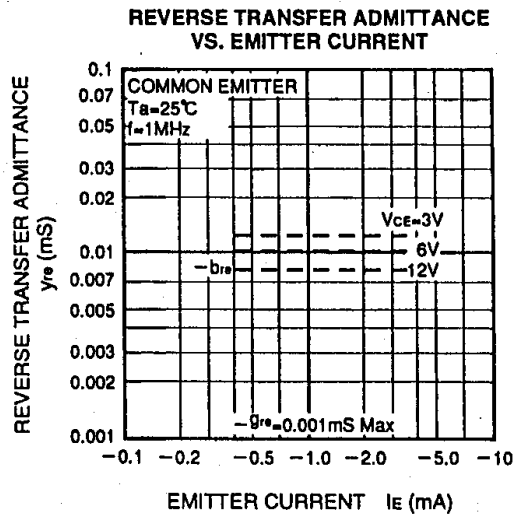
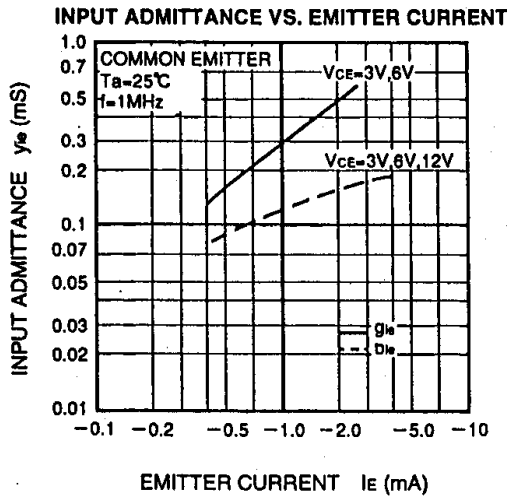


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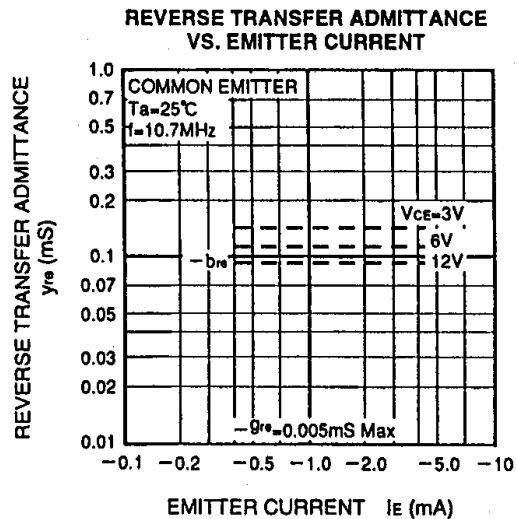
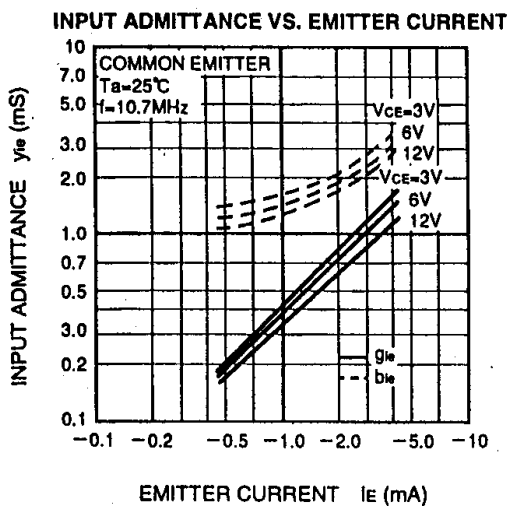
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## COMMON EMITTER, 1MHz y PARAMETER



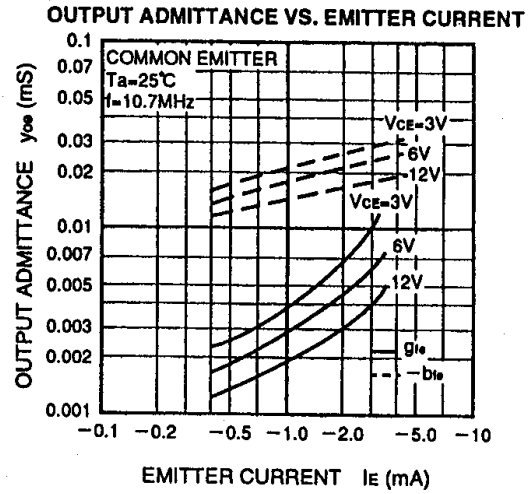
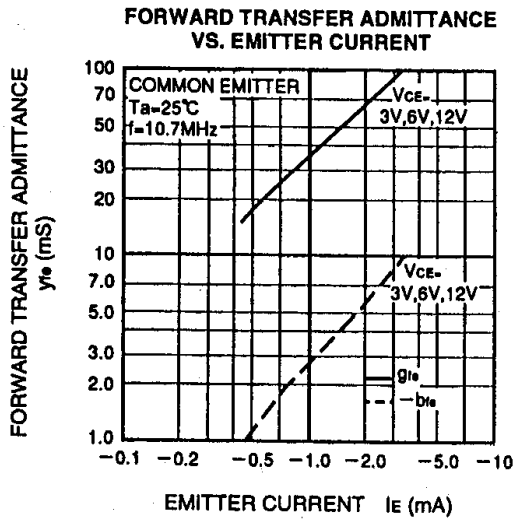
## COMMON EMITTER, 10.7MHz y PARAMETER



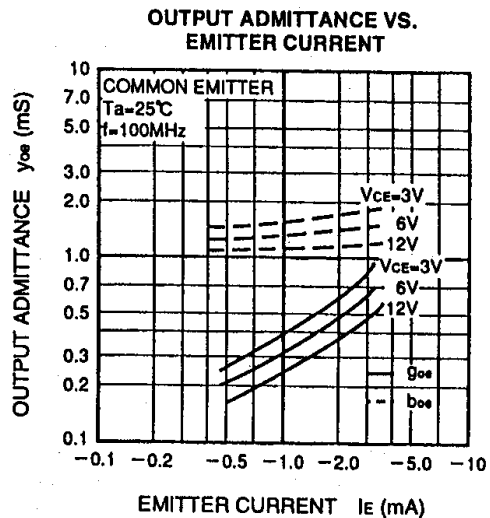
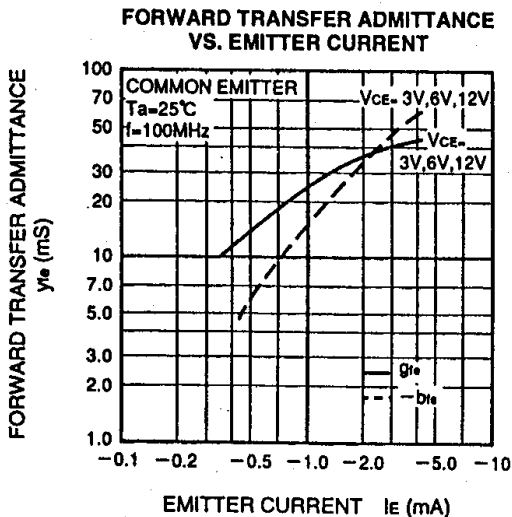
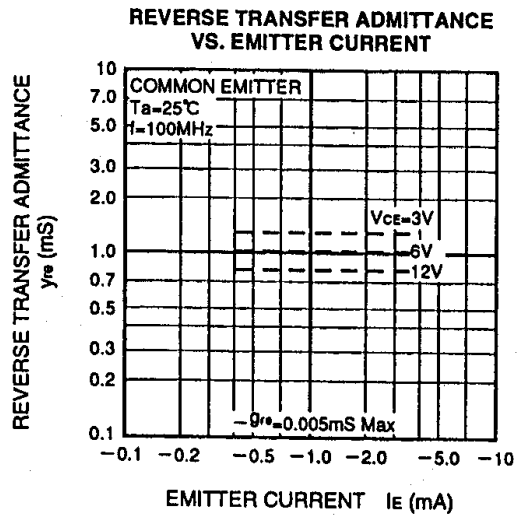
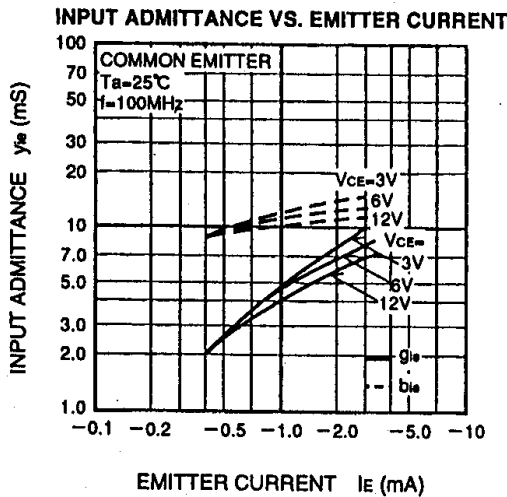
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## COMMON EMITTER, 100MHz y PARAMETER



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