

〈SMALL-SIGNAL TRANSISTOR〉

**2SC4258**

FOR HIGH FREQUENCY, MEDIUM FREQUENCY AMPLIFY APPLICATION  
SILICON NPN EPITAXIAL TYPE

**DESCRIPTION**

2SC4258 is a super mini package resin sealed silicon NPN epitaxial type transistor. It is designed for high frequency medium frequency amplify application.

**FEATURE**

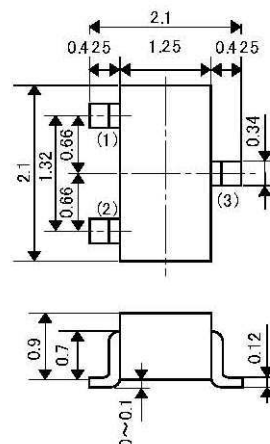
- High gain 10.7MHz, MAG=45dB typ
- Low noise 10.7MHz NF=3.0dB typ
- Super mini package for easy mounting
- Low yre yre=-J0.11ms typ

**APPLICATION**

Small type communication equipment, high frequency amplify, oscillating, mix, frequency exchange of AM/FM radio, medium frequency amplifier.

**OUTLINE DRAWING**

Unit:mm

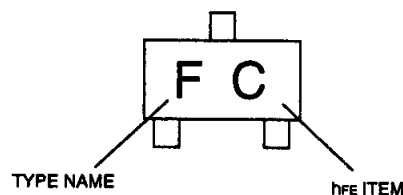


TERMINAL CONNECTOR

- ① : BASE
  - ② : EMITTER
  - ③ : COLLECTOR
- EIAJ : SC-70

Note)  
The dimension without tolerance represent central value.

**MARKING**



**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)	150	mW
Tj	Junction temperature	+125	°C
Tstg	Storage temperature	-55 to +125	°C

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

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
Icbo	Collector cut off current	Vcb=25V, Ie=0			1.0	μA
Iebo	Emitter cut off current	VEB=2V, Ic=0			1.0	μA
hFE *	DC forward current gain	VCE=6V, Ic=1mA	35		180	—
VCE(sat)	C to E saturation voltage	Ic=10mA, Ie=1mA		0.1	0.3	V
fr	Gain band width product	VCE=6V, Ie=1mA	150	200		MHz
Cob	Collector output capacitance	Vcb=6V, Ie=0, f=1MHz		2.0	2.7	pF
Ccr'b	Base time constant	Vcb=6V, Ie=-1mA, f=31.8MHz		20	60	pS
NF	Noise figure	Vcb=6V, Ie=-1mA, f=10.7MHz, Rg=500Ω		3.0		dB

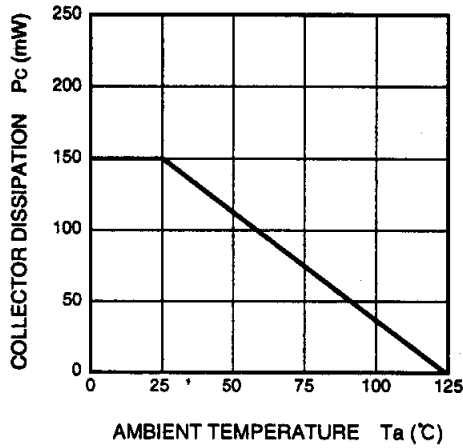
\* : It shows hFE classification in right table.

Item	B	C	D
hFE	35 to 70	55 to 110	90 to 180
Marking	FB	FC	FD

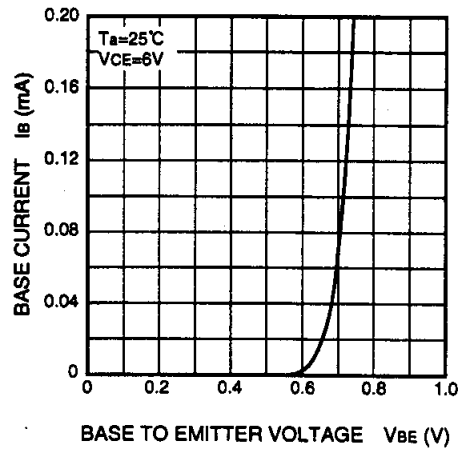
FOR HIGH FREQUENCY, MEDIUM FREQUENCY AMPLIFY APPLICATION  
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TYPICAL CHARACTERISTICS

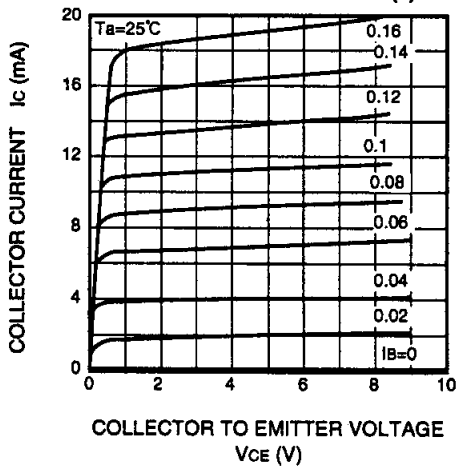
COLLECTOR DISSIPATION VS.  
AMBIENT TEMPERATURE



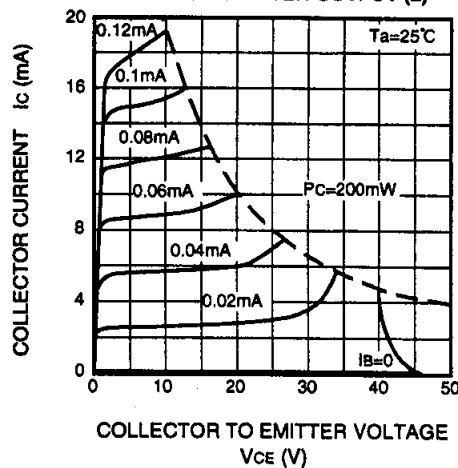
COMMON EMITTER INPUT



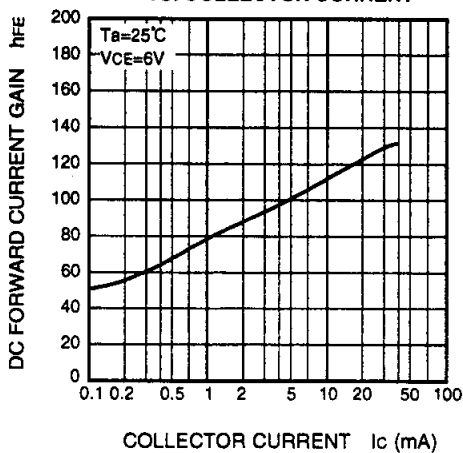
COMMON EMITTER OUTPUT (1)



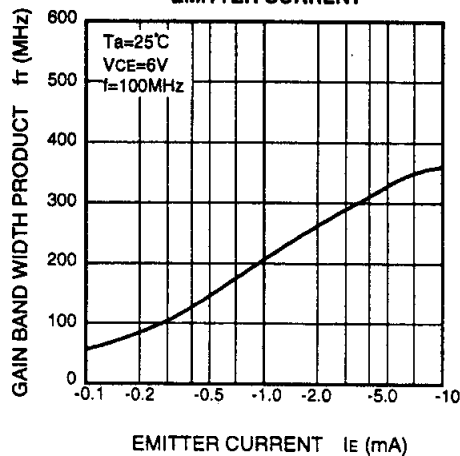
COMMON EMITTER OUTPUT (2)



DC FORWARD CURRENT GAIN  
VS. COLLECTOR CURRENT



GAIN BAND WIDTH PRODUCT VS.  
EMITTER CURRENT

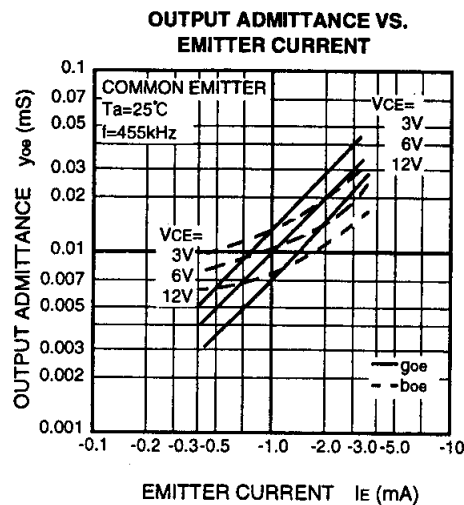
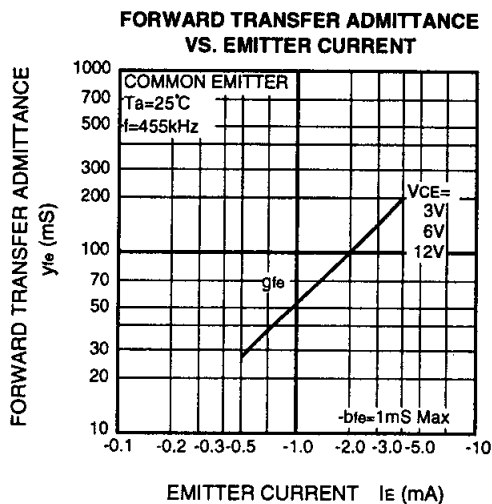
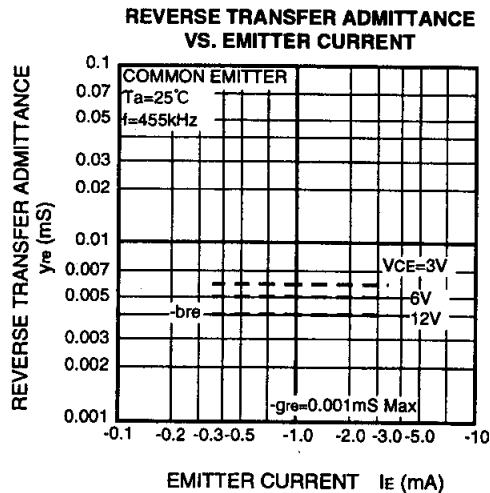
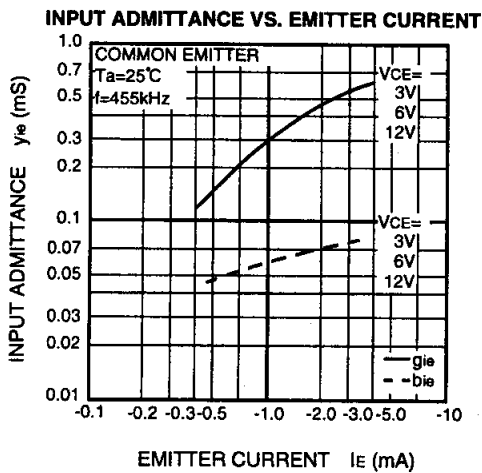


**FOR HIGH FREQUENCY, MEDIUM FREQUENCY AMPLIFY APPLICATION  
SILICON NPN EPITAXIAL TYPE**

**COMMON EMITTER, y PARAMETER (TYPICAL VALUE) (Ta=25°C)**

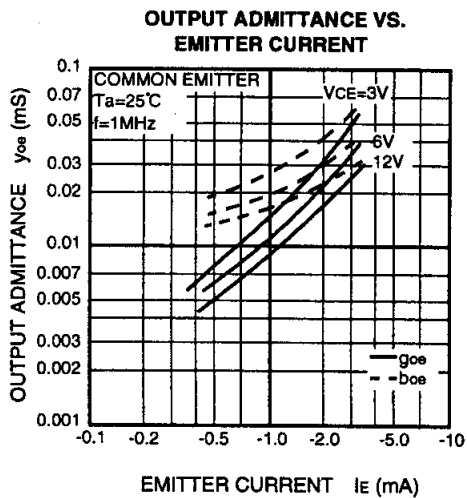
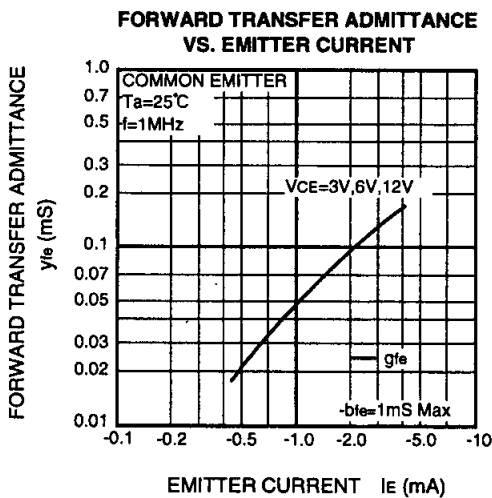
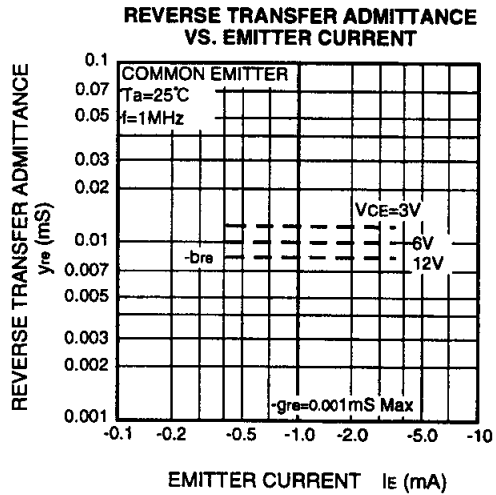
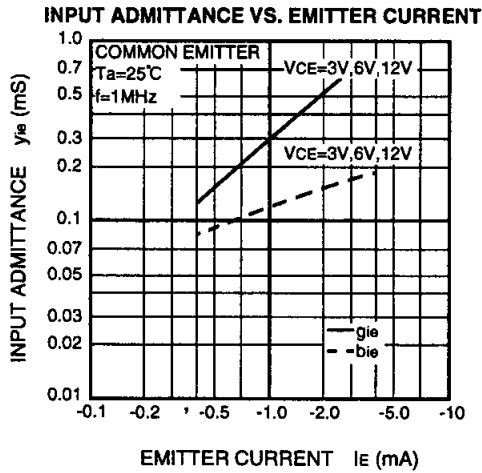
Test conditions		f=455kHz VCE=6V IE=-1mA	f=1MHz VCE=6V IE=-1mA	f=10.7MHz VCE=6V IE=-1mA	f=100MHz VCE=6V IE=-1mA
yie (mS)	gie	0.30	0.30	0.38	4.4
	bie	0.06	0.12	1.40	11.0
yre (mS)	-gre	0.001Max	0.001Max	0.005Max	0.05Max
	-bre	0.005	0.010	0.11	1.0
yfe (mS)	gfe	50	46	37	25
	-dfe	1.0Max	1.0Max	2.8	16
yoe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

**COMMON EMITTER, 455kHz y PARAMETER**

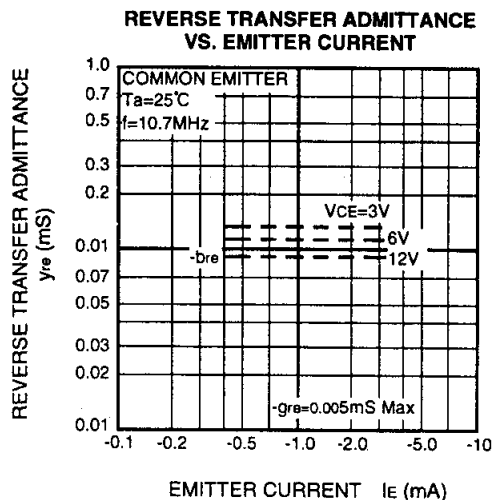
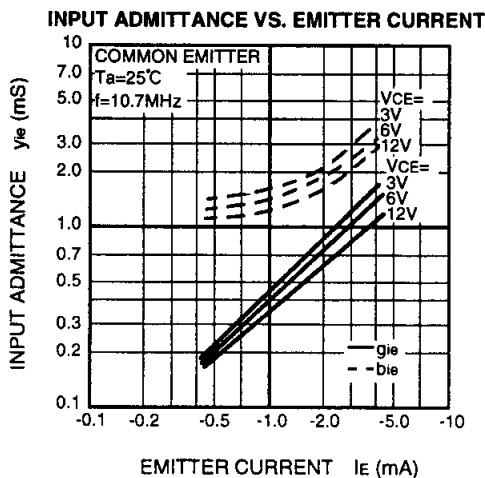


FOR HIGH FREQUENCY, MEDIUM FREQUENCY AMPLIFY APPLICATION  
SILICON NPN EPITAXIAL TYPE

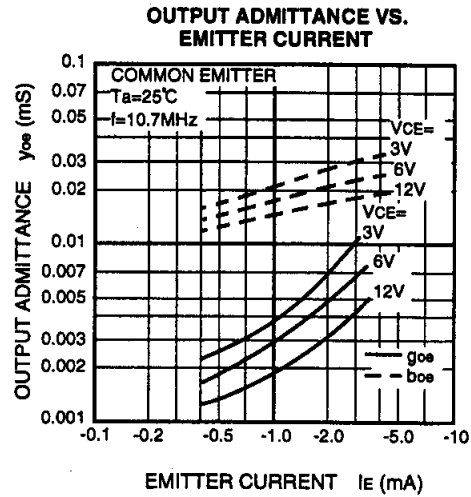
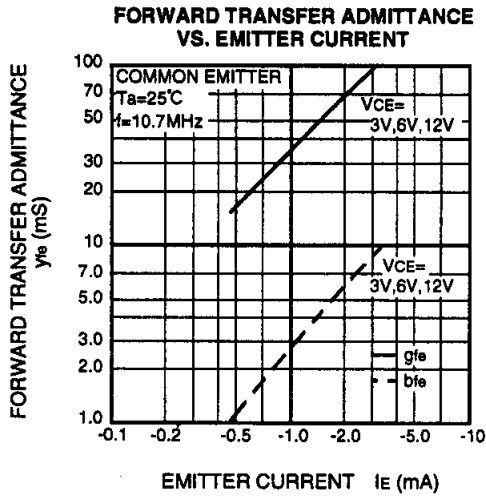
**COMMON EMITTER, 1MHz y PARAMETER**



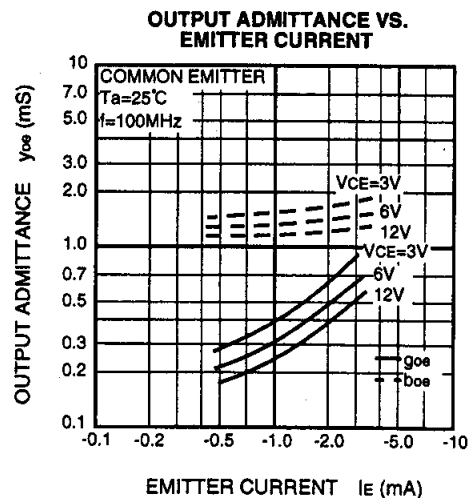
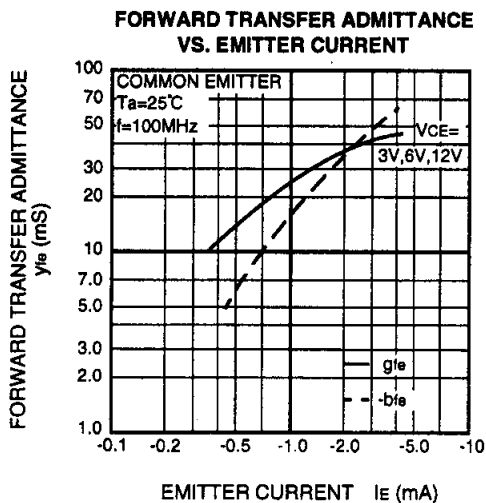
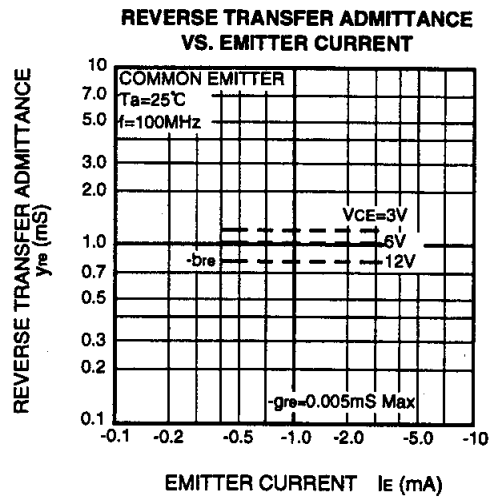
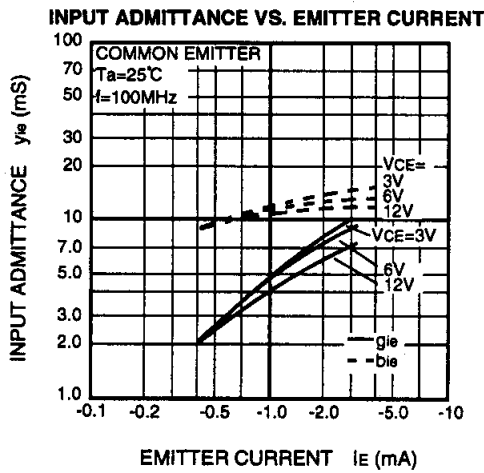
**COMMON EMITTER, 10.7MHz y PARAMETER**



FOR HIGH FREQUENCY, MEDIUM FREQUENCY AMPLIFY APPLICATION  
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**COMMON EMITTER, 100MHz y PARAMETER**



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