

**FOR FM · AM RADIO HIGH AND MEDIUM FREQUENCY AMPLIFY APPLICATION
SILICON NPN EPITAXIAL TYPE**

DESCRIPTION

Mitsubishi 2SC710 is a resin sealed silicon NPN epitaxial type transistor designed for high frequency amplify application.

FEATURE

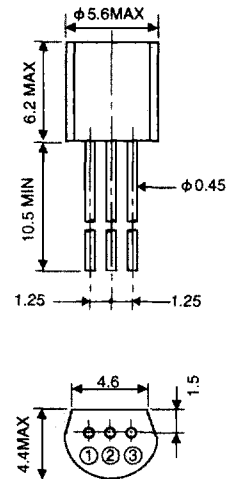
- High gain 10.7MHz, MAG=45dB typ
- Low noise figure 10.7MHz, NF=3.0dB typ
- Small package
- Low y_{re} 10.7MHz, y_{re} =-j0.11mS typ

APPLICATION

High frequency oscillating, mix, frequency exchange and medium frequency amplifier of FM radio, AM radio.

OUTLINE DRAWING

Unit:mm



TERMINAL CONNECTOR

- ① : BASE EIAJ : SC-43
- ② : COLLECTOR JEDEC : TO-92 resemblance
- ③ : EMITTER

Note)

The dimension without tolerance represent central value.

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)	200	mW
T _j	Junction temperature	+125	°C
T _{stg}	Storage temperature	-55 to +125	°C

ELECTRICAL CHARACTERISTICS (Ta=25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
I _{CBO}	Collector cut off current	V _{CB} =25V, I _E =0			1	μA
I _{EBO}	Emitter cut off current	V _{EB} =2V, I _C =0			5	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 _{cbb}	Base time constant	V _{CB} =6V, I _E =-1mA, f=31.8MHz		20	60	pS
NF	Noise figure	V _{CB} =6V, I _E =-0.1mA, f=10.7MHz, R _G =500Ω		3.0		dB

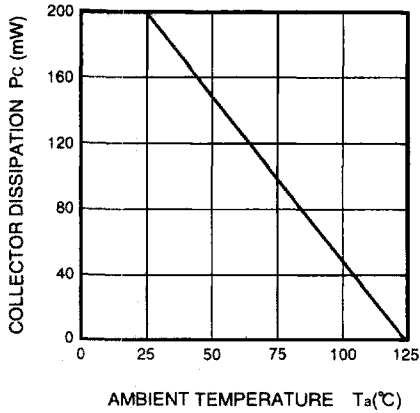
* : It shows h_{FE} classification in right table.

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

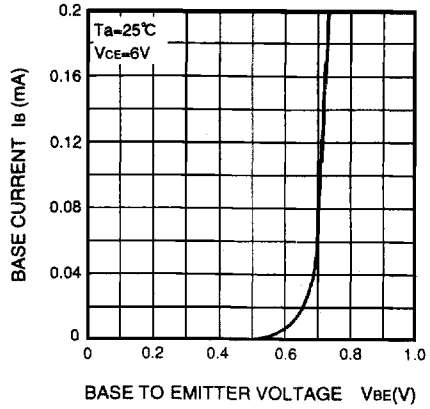
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TYPICAL CHARACTERISTICS

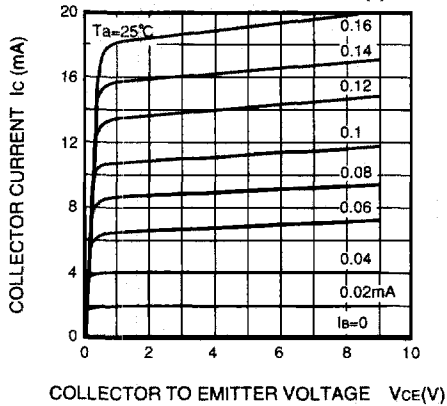
COLLECTOR DISSIPATION VS.
AMBIENT TEMPERATURE



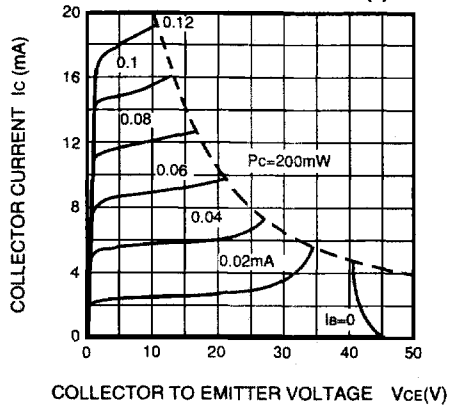
COMMON EMITTER INPUT



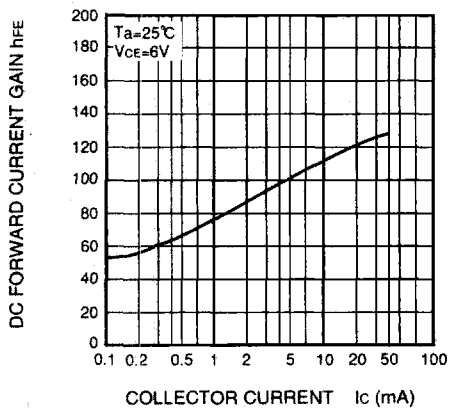
COMMON EMITTER OUTPUT (1)



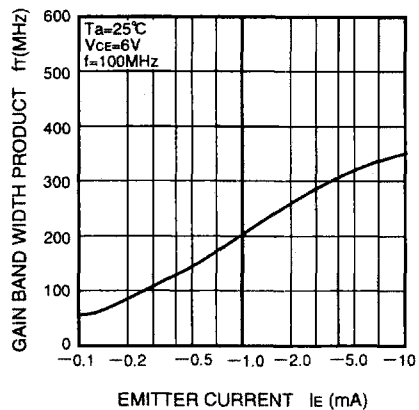
COMMON EMITTER OUTPUT (2)



DC FORWARD CURRENT GAIN
VS. COLLECTOR CURRENT



GAIN BAND WIDTH PRODUCT
VS. EMITTER CURRENT

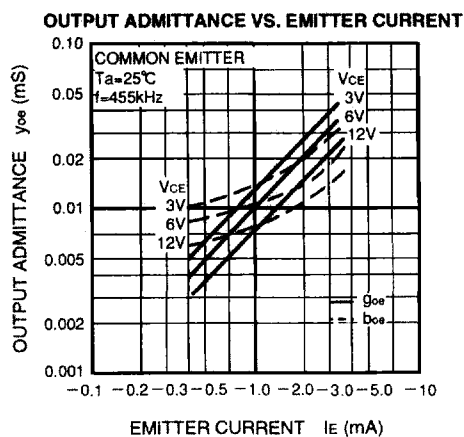
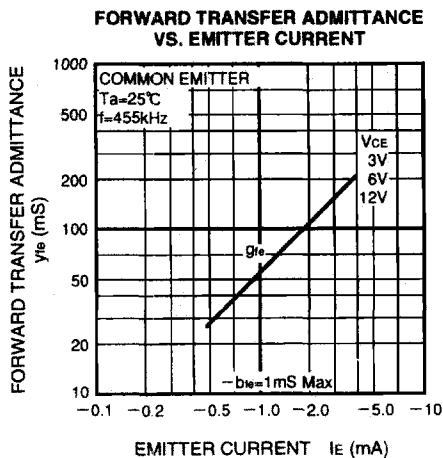
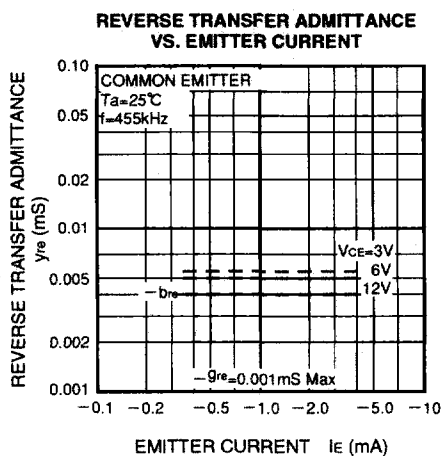
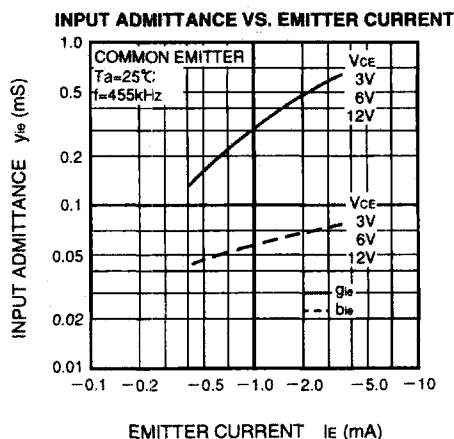


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COMMON EMITTER, y PARAMETER (TYPICAL VALUE) (Ta=25°C)

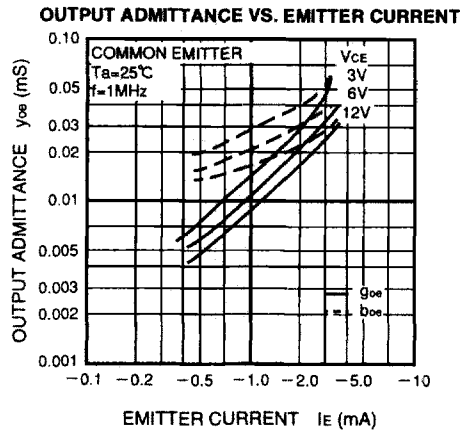
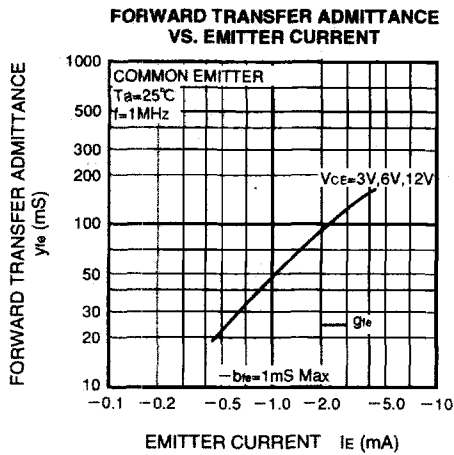
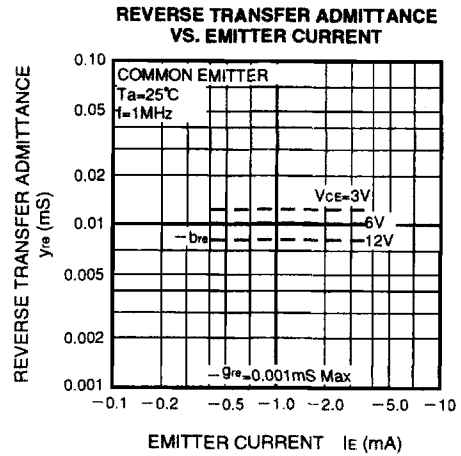
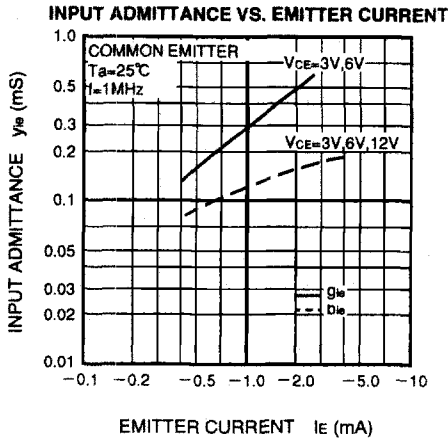
Test conditions		f=455kHz VCE=6V IE=-1mA	f=1MHz VCE=6V IE=-1mA	f=10.7MHz VCE=6V IE=-1mA	f=100MHz VCE=6V IE=-1mA
y Parameter	gie	0.30	0.30	0.38	4.4
	bie	0.06	0.12	1.40	11.0
yre (mS)	-gre	0.001Max	0.001Max	0.005Max	0.05Max
	-bre	0.005	0.010	0.11	1.0
yfe (mS)	gfe	50	46	37	25
	-bie	1.0Max	1.0Max	2.8	16
yoe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

COMMON EMITTER, 455kHz y PARAMETER

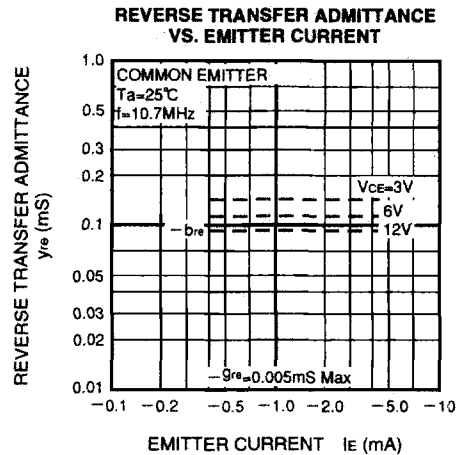
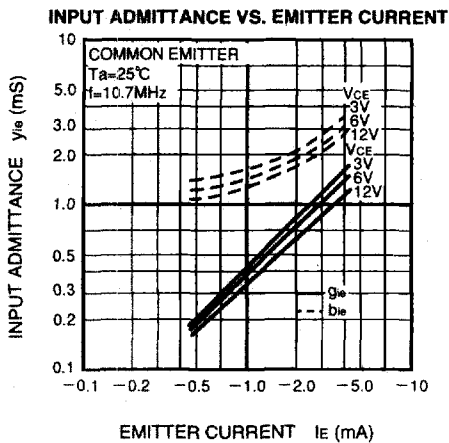


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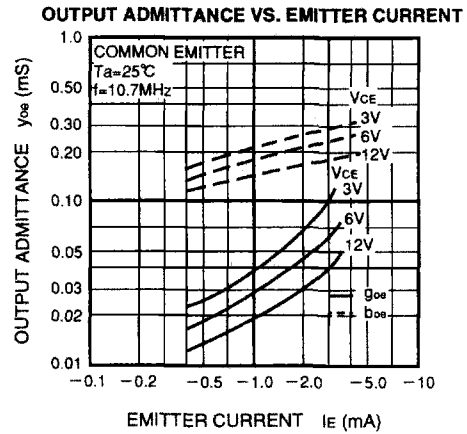
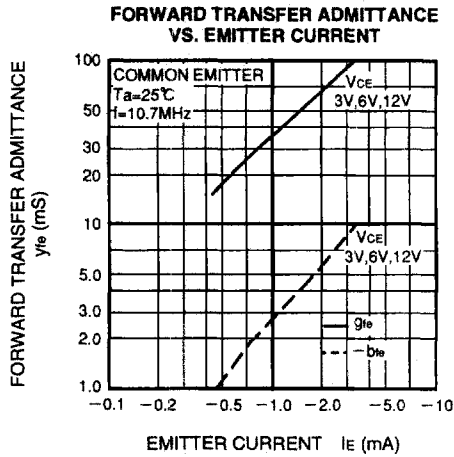
COMMON EMITTER, 1MHz y PARAMETER



COMMON EMITTER, 10.7MHz y PARAMETER



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COMMON EMITTER, 100MHz y PARAMETER

