

MITSUBISHI SEMICONDUCTOR (SMALL-SIGNAL TRANSISTOR)

2SC710

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

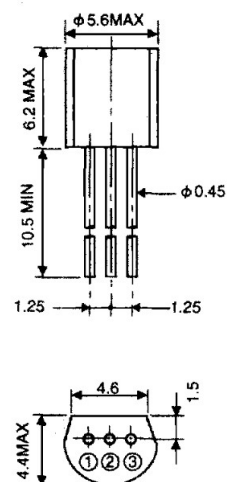
- High gain 10.7MHz, MAG=45dB typ
- Low noise figure 10.7MHz, NF=3.0dB typ
- Small package
- Low τ_{re} 10.7MHz, τ_{re} =-J0.11mS typ

APPLICATION

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

OUTLINE DRAWING

Unit:mm



TERMINAL CONNECTOR

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

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 _{CB0}	Collector cut off current	V _{CB} =25V, I _E =0			1	μA
I _{EB0}	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 _{σ_{bb}}	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

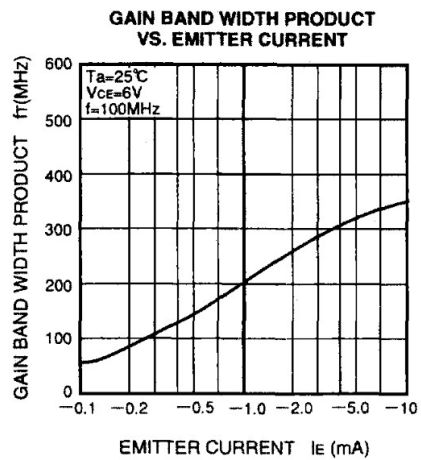
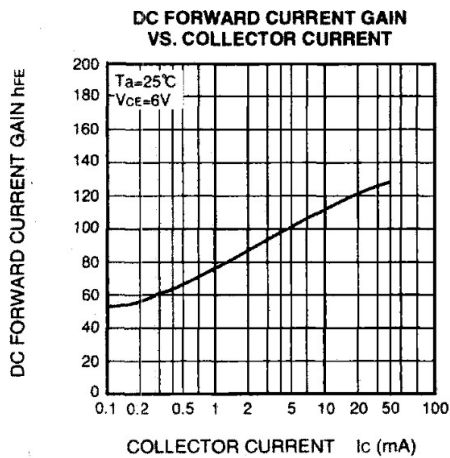
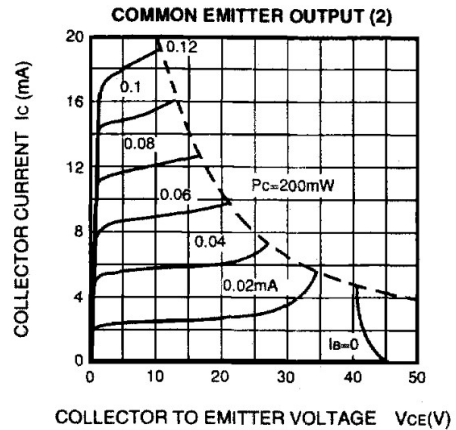
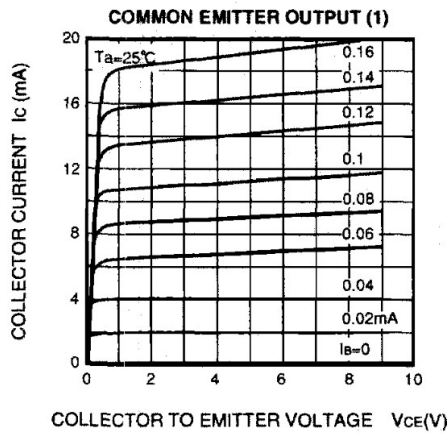
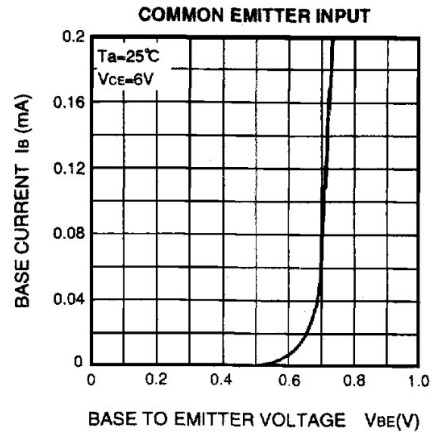
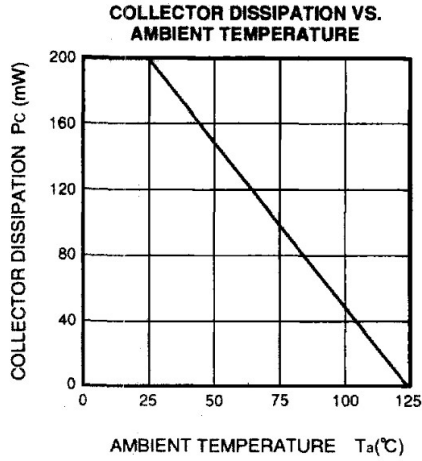
* : It shows h_{FE} classification in right table.

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



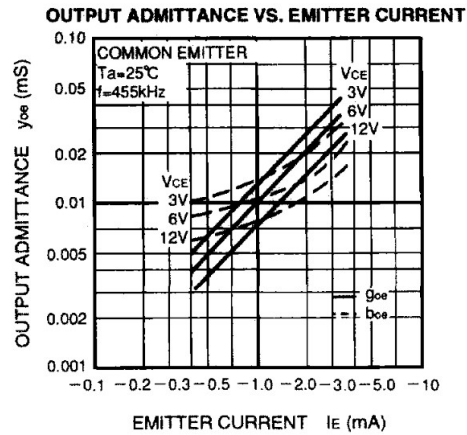
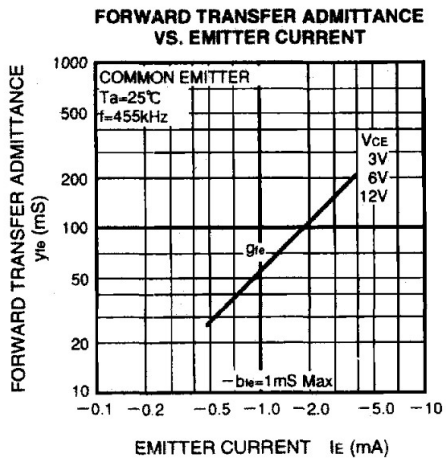
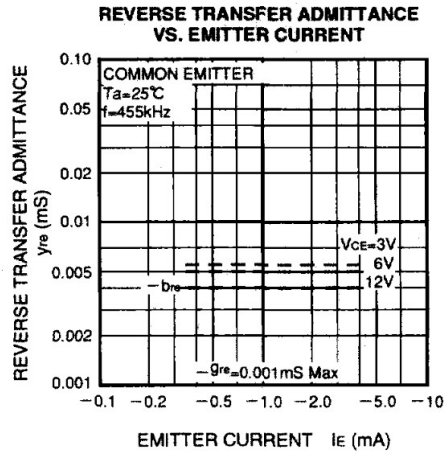
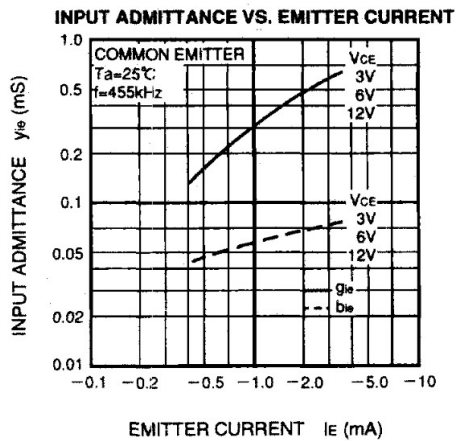
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COMMON EMITTER, y PARAMETER (TYPICAL VALUE) (Ta=25°C)

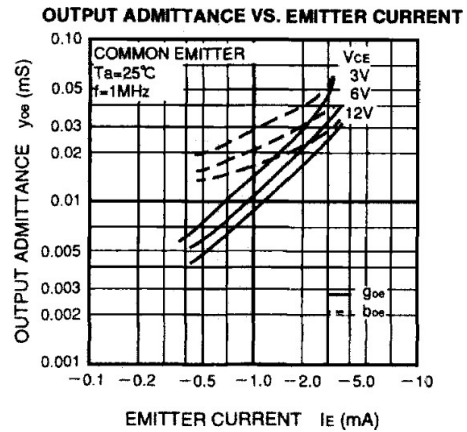
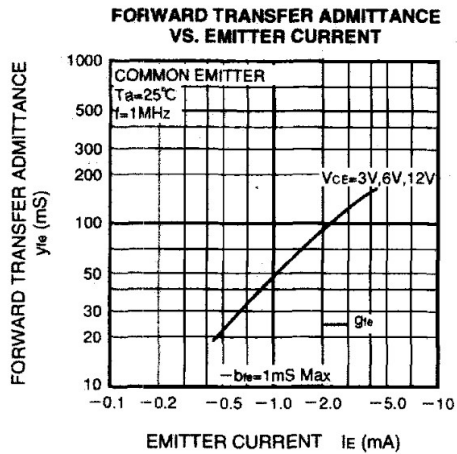
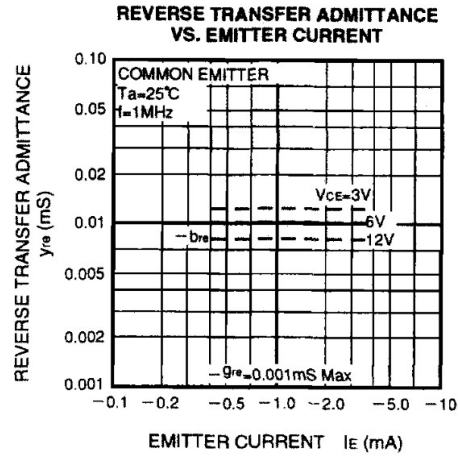
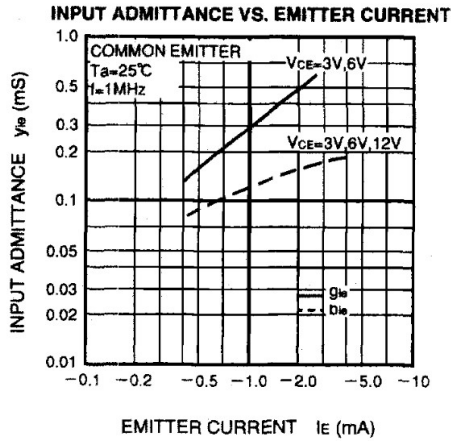
Test conditions		f=455kHz VCE=6V IE=-1mA	f=1MHz VCE=6V IE=-1mA	f=10.7MHz VCE=6V IE=-1mA	f=100MHz VCE=6V IE=-1mA
y _{ie} (mS)	g _{ie}	0.30	0.30	0.38	4.4
	b _{ie}	0.06	0.12	1.40	11.0
y _{re} (mS)	-g _{re}	0.001Max	0.001Max	0.005Max	0.05Max
	-b _{re}	0.005	0.010	0.11	1.0
y _{fe} (mS)	g _{fe}	50	46	37	25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

COMMON EMITTER, 455kHz y PARAMETER

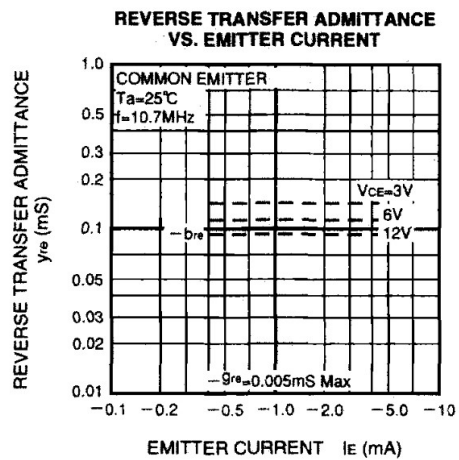
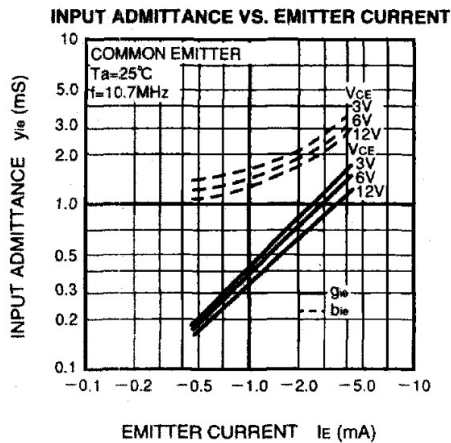


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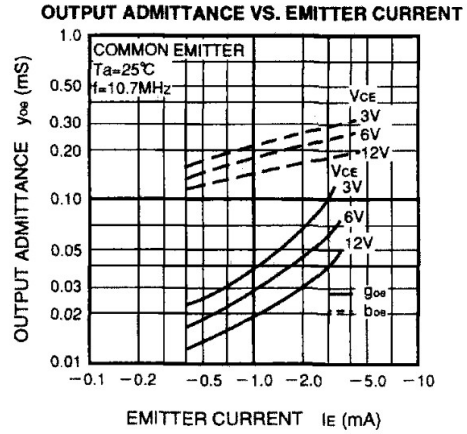
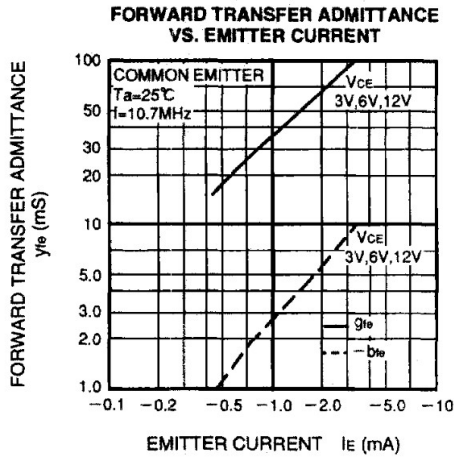
COMMON EMITTER, 1MHz y PARAMETER



COMMON EMITTER, 10.7MHz y PARAMETER



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COMMON EMITTER, 100MHz y PARAMETER

