MITSUBISHI SEMICONDUCTOR 〈SMALL-SIGNAL TRANSISTOR〉

2SC1914A

FOR LOW FREQUENCY VOLTAGE AMPLIFY APPLICATION
SILICON NPN EPITAXIAL TYPE

DESCRIPTION

Mitsubishi 2SC1914A is a silicon NPN epitaxial type high voltage transistor designed for low frequency voltage amplify application of small signal. Due to the high current amplification at small current range and excellent linearity. It is most suitable for small signal application of stereo power amplifier protection circuit, supply voltage circuit of high voltage.

FEATURE

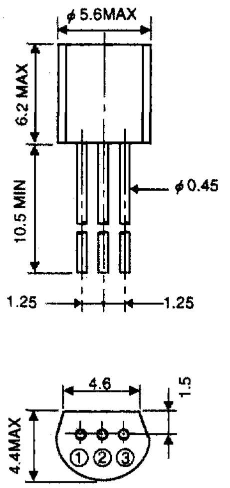
- ●High voltage V_{CEO}=120V
- ●High h_{FE} of small current range, excellent linearity
- ●High gain band width product f_T=150MHz typ

APPLICATION

High voltage power supply circuit , protection circuit of stereo power amplifier.

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℃)

Symbol	Parameter	Ratings	Unit
V_{CBO}	Collector to Base voltage	120	V
V_{EBO}	Emitter to Base voltage	5	V
V_{CEO}	Collector to Emitter voltage	120	V
I_C	Collector current	50	mA
P_C	Collector dissipation(Ta=25℃)	200	mW
T_j	Junction temperature	+125	℃
T_{stg}	Storage temperature	-55 to +125	℃

ELECTRICAL CHARACTERISTICS (Ta=25℃)

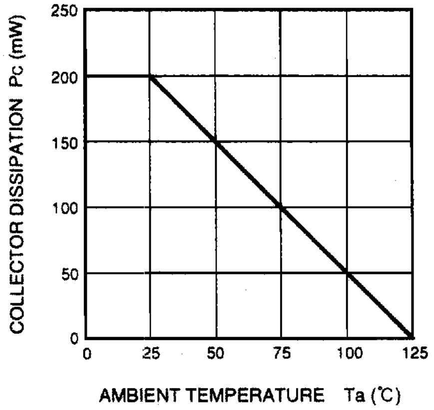
Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
$V_{(BR)CEO}$	C to E break down voltage	I_C=100μA,R_{BE}=∞	120			V
I_{CBO}	Collector cut off current	V_{CB}=100V,I_E=0			0.1	μA
I_{EBO}	Emitter cut off current	V_{EB}=-2V,I_C=0			0.1	μA
I_{CER}	Collector cut off current	V_{CE}=120V,R_{BE}=100kΩ			10	μA
h_{FE} *	DC forward current gain	V_{CE}=6V,I_C=1mA	250		800	—
$V_{CE(sat)}$	C to E saturation voltage	I_C=10mA,I_B=1mA			0.6	V
f_T	Gain band width product	V_{CE}=6V,I_E=-1mA		150		MHz
C_{ob}	Collector output capacitance	V_{CB}=6V,I_E=0,f=1MHz		1.8		pF

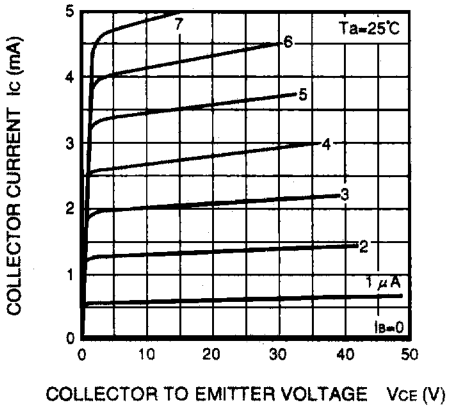
* : It shows h_{FE} classification in right table.

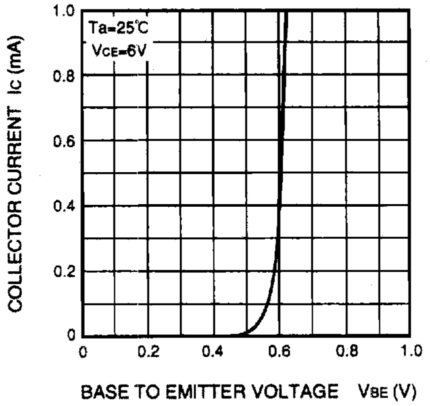
Item	F	G
h_{FE}	250 to 500	400 to 800

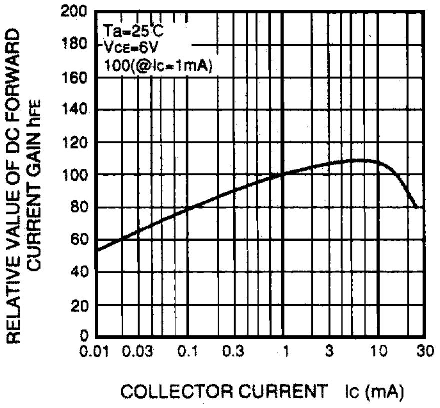
MITSUBISHI ELECTRIC

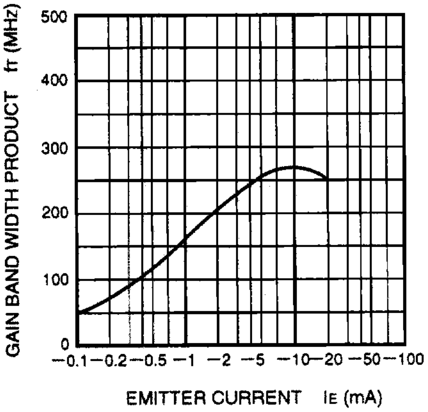
TYPICAL CHARACTERISTICS

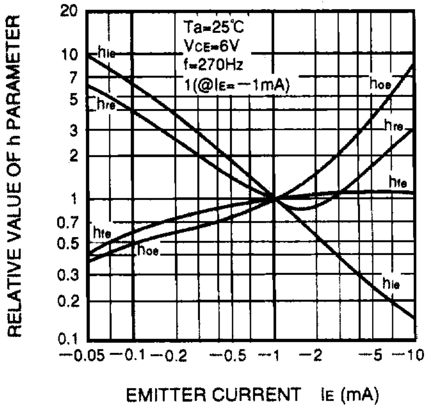

COLLECTOR DISSIPATION VS. AMBIENT TEMPERATURE


COMMON EMITTER OUTPUT

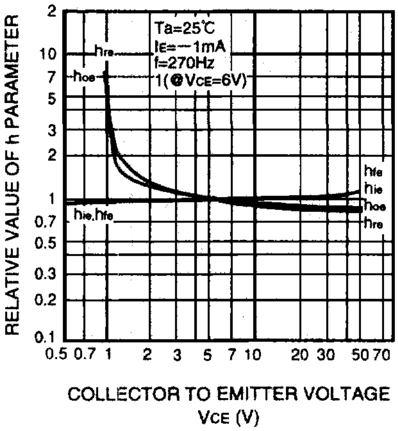

COMMON EMITTER TRANSFER


DC FORWARD CURRENT GAIN VS. COLLECTOR CURRENT


GAIN BAND WIDTH PRODUCT VS. EMITTER CURRENT


h PARAMETER VS. EMITTER CURRENT

h PARAMETER VS. COLLECTOR TO EMITTER VOLTAGE



COMMON EMITTER h PARAMETER (TYPICAL VALUE)

Symbol	Parameter	Test conditions	Limits	Unit
h_{ie}	Closed loop small signal input impedance	Ta=25℃ V_{CE}=6V I_E=-1mA f=270Hz	18	kΩ
h_{re}	Open loop small signal reverse voltage amplification factor		0.08	$\times 10^{-3}$
h_{fe}	Closed loop small signal forward current amplification factor		600	—
h_{oe}	Open loop small signal output admittance		10	μS