

**DESCRIPTION**

Mitsubishi 2SA1115 is a silicon PNP epitaxial type transistor designed for low frequency voltage amplify application. Small package for easy mounting.

**FEATURE**

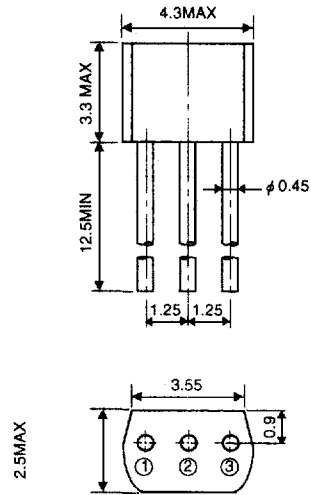
- Excellent linearity of DC forward current gain
- Low collector saturation voltage  
 $V_{CE(sat)} = -0.3V$  max (@  $I_C = -100mA, I_B = -10mA$ )
- Small package

**APPLICATION**

For small machine low frequency voltage amplify application.

**OUTLINE DRAWING**

Unit:mm



**TERMINAL CONNECTOR**

- ① : EMITTER EIAJ : —
- ② : COLLECTOR JEDEC : —
- ③ : BASE JEDEC : —

Note)

The dimension without tolerance represent central value.

**MAXIMUM RATINGS (Ta=25°C)**

Symbol	Parameter	Ratings	Unit
V <sub>CB0</sub>	Collector to Base voltage	-50	V
V <sub>EB0</sub>	Emitter to Base voltage	-6	V
V <sub>CE0</sub>	Collector to Emitter voltage	-50	V
I <sub>C</sub>	Collector current	-200	mA
P <sub>C</sub>	Collector dissipation (Ta=25°C)	300	mW
T <sub>J</sub>	Junction temperature	+125	°C
T <sub>stg</sub>	Storage temperature	-55 to +125	°C

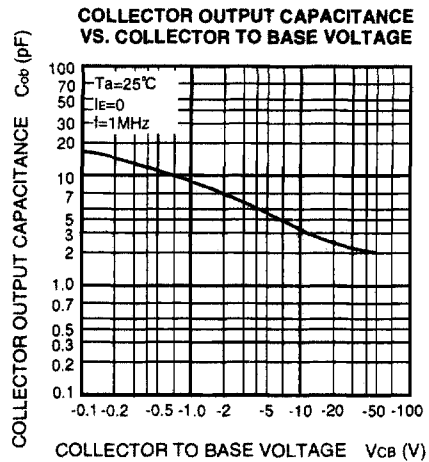
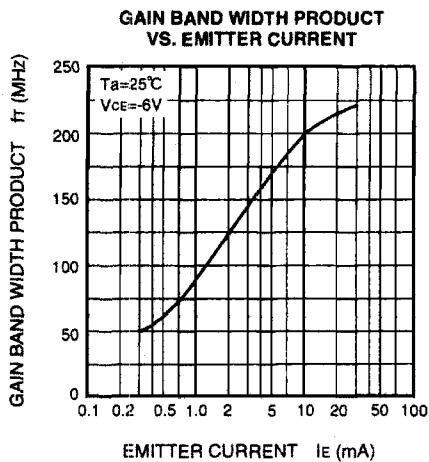
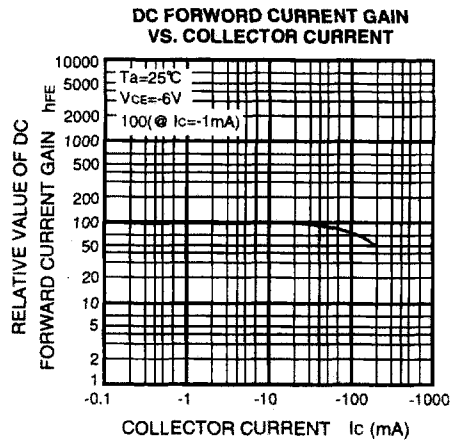
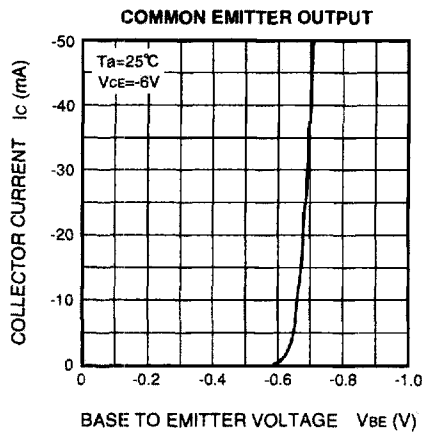
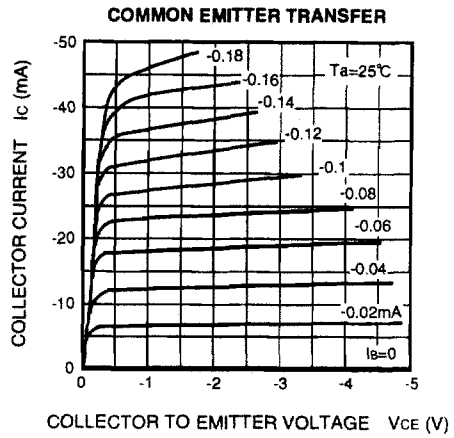
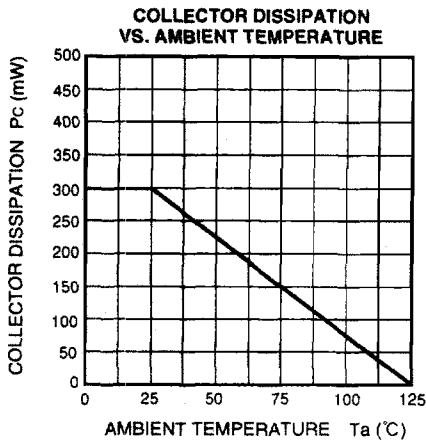
**ELECTRICAL CHARACTERISTICS (Ta=25°C)**

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
V <sub>(BR)CEO</sub>	C to E break down voltage	I <sub>C</sub> =-100 μA, R <sub>BE</sub> =∞	-50			V
I <sub>CB0</sub>	Collector cut off current	V <sub>CB</sub> =-50V, I <sub>E</sub> =0			-0.1	μA
I <sub>EB0</sub>	Emitter cut off current	V <sub>EB</sub> =-6V, I <sub>C</sub> =0			-0.1	μA
h <sub>FE</sub> *	DC forward current gain	V <sub>CE</sub> =-6V, I <sub>C</sub> =-1mA		90	800	—
h <sub>FE</sub>	DC forward current gain	V <sub>CE</sub> =-6V, I <sub>C</sub> =-0.1mA		50		—
V <sub>CE(sat)</sub>	C to E saturation voltage	I <sub>C</sub> =-100mA, I <sub>B</sub> =-10mA			-0.3	V
f <sub>T</sub>	Gain band width product	V <sub>CE</sub> =-6V, I <sub>E</sub> =10mA		200		MHz
C <sub>ob</sub>	Collector output capacitance	V <sub>CB</sub> =-6V, I <sub>E</sub> =0, f=1MHz		4.0		pF
NF	Noise figure	V <sub>CE</sub> =-6V, I <sub>E</sub> =0.3mA, f=100Hz, R <sub>G</sub> =10kΩ			20	dB

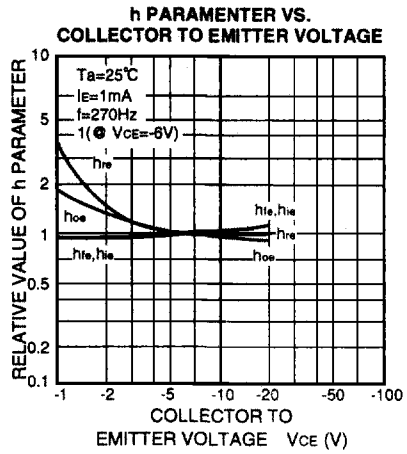
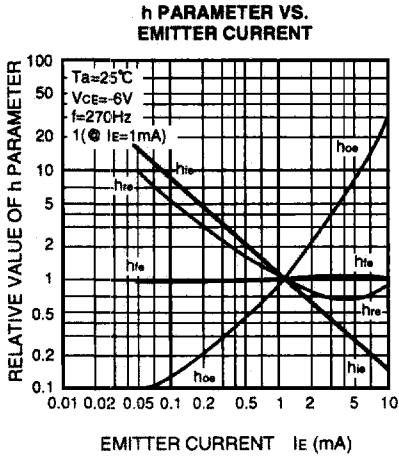
\* : It shows h<sub>FE</sub> classification in right table.

Item	D	E	F	G
h <sub>FE</sub>	90 to 180	150 to 300	250 to 500	400 to 800

TYPICAL CHARACTERISTICS



FOR LOW FREQUENCY AMPLIFY APPLICATION  
SILICON PNP EPITAXIAL TYPE



**COMMON EMITTER h PARAMETER (TYPICAL VALUE)**

Symbol	Parameter	Test conditions	Limits	Unit
$h_{ie}$	Closed loop small signal input impedance	$T_a=25^\circ\text{C}$ $V_{CE}=-6\text{V}$ $I_e=1\text{mA}$ $f=270\text{Hz}$	7.0	k $\Omega$
$h_{re}$	Open loop small signal reverse voltage amplification factor		0.1	$\times 10^{-3}$
$h_{fe}$	Closed loop small signal forward current amplification factor		250	—
$h_{oe}$	Open loop small signal output admittance		18	$\mu\text{S}$