〈SMALL-SIGNAL TRANSISTOR〉

2SA2193

FOR LOW FREQUENCY AMPLIFY APPLICATION
SILICON NPN EPITAXIAL TYPE

DESCRIPTION

ISAHAYA 2SA2193 is a super mini package resin sealed silicon PNP epitaxial transistor designed for low frequency voltage amplify application.

FEATURE

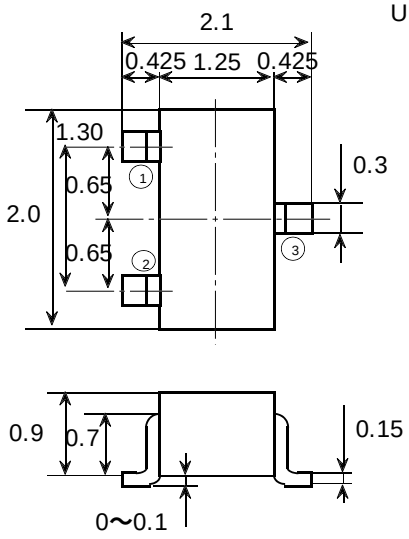
- **Low collector to emitter saturation voltage VCE(sat)=-0.4V max(@IC=-50mA,IB=-5mA)**
- **Excellent linearity of DC forward current gain**
- **Small packege for easy mounting**

APPLICATION

For small type machine low frequency voltage amplify application

OUTLINE DRAWING

Unit:mm



TERMINAL CONNECTOR

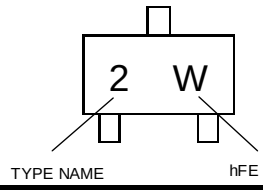
① : BASE
② : EMITTER
③ : COLLECTOR

JEITA : SC-70
JEDEC : -

MAXIMUM RATINGS (Ta=25°C)

Symbol	Parameter	Ratings	Unit
V_{CBO}	Collector to Base voltage	-60	V
V_{CEO}	Collector to Emitter voltage	-40	V
V_{EBO}	Emitter to Base voltage	-6.0	V
I_C	Collector current	-200	mA
P_C	Collector dissipation	150	mW
T_j	Junction temperature	+150	°C
T_{stg}	Storage temprature	-55 ～ +150	°C

MARKING



ELECTRICAL CHARACTERISTICS (Ta=25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
$V_{(BR)CEO}$	C to E break down voltage	I_C=-1mA, R_{BE}=∞	-40			V
I_{CBO}	Collector cut off current	V_{CB}=-60V, I_E=0mA			-0.1	μA
I_{EBO}	Emitter cut off current	V_{EB}=-6V, I_C=0mA			-0.1	μA
h_{FE}	DC forward current gain	V_{CE}=-1V, I_C=-10mA	100		300	
$V_{CE(sat)}$	C to E saturation voltage	I_C=-50mA, I_B=-5mA			-400	mV
f_T	Gain bandwidth product	V_{CE}=-20V, I_E=10mA	250			MHz
C_{ob}	Collector output capacitance	V_{CB}=-5V, I_E=0mA, f=1MHz			5.0	pF

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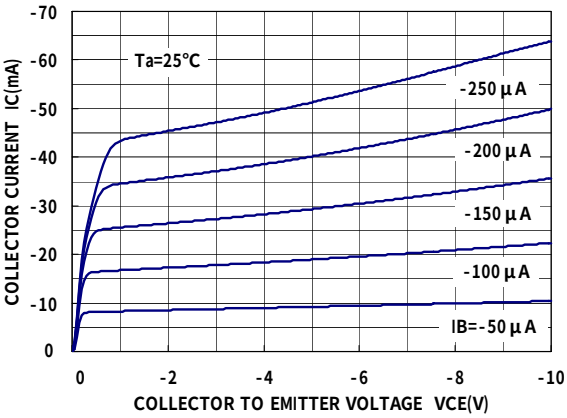
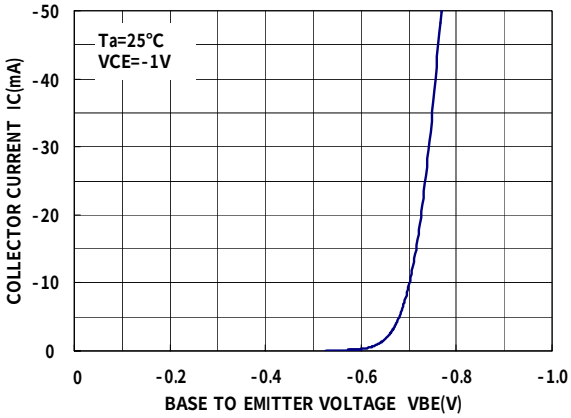
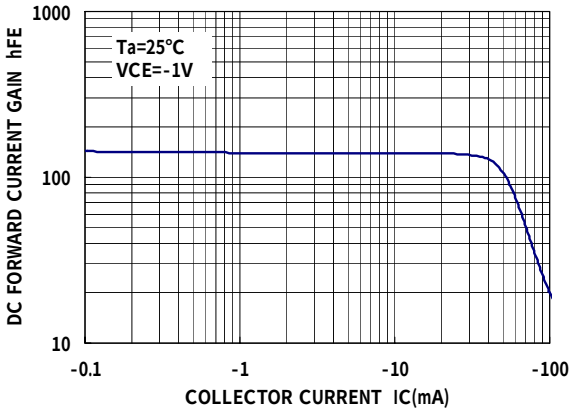
COMMON EMITTER OUTPUT



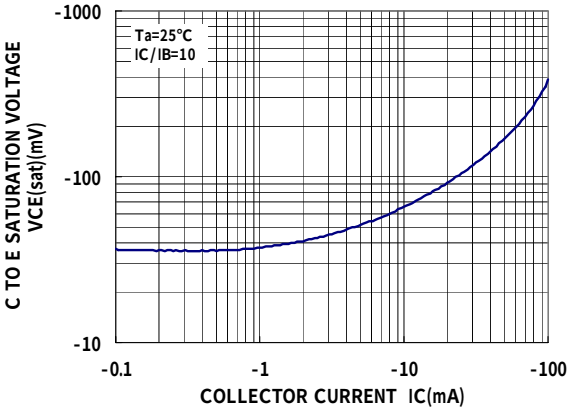
COMMON EMITTER TRANSFER



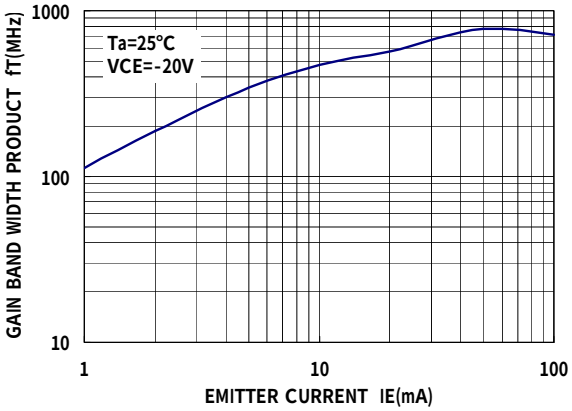
DC FORWARD CURRENT GAIN
VS.COLLECTOR CURRENT



COLLECTOR EMITTER SATURATION VOLTAGE
VS.COLLECTOR CURRENT



GAIN BAND WIDTH PRODUCT VS.
EMITTER CURRENT



COLLECTOR OUTPUT CAPACITANCE
VS.COLLECTOR TO BASE VOLTAGE