

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
 $V_{CE(sat)} = -0.4V \text{ max} (@I_C = -50mA, I_B = -5mA)$
- Excellent linearity of DC forward current gain
- Small package for easy mounting

APPLICATION

For small type machine low frequency voltage amplify application

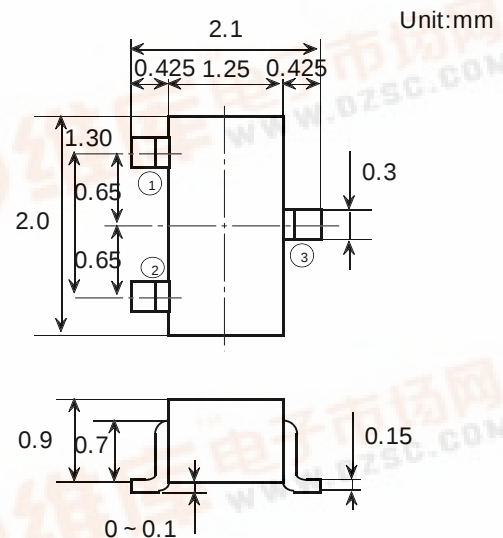
MAXIMUM RATINGS (Ta=25 °C)

Symbol	Parameter	Ratings	Unit
V _{CB0}	Collector to Base voltage	-60	V
V _{CE0}	Collector to Emitter voltage	-40	V
V _{EB0}	Emitter to Base voltage	-6.0	V
I _C	Collector current	-200	mA
P _C	Collector dissipation	150	mW
T _j	Junction temperature	+150	
T _{stg}	Storage temprature	-55 ~ +150	

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

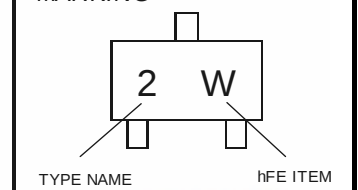
OUTLINE DRAWING



TERMINAL CONNECTOR

- ① : BASE
② : EMITTER
③ : COLLECTOR
- JEITA : SC-70
JEDEC : -

MARKING

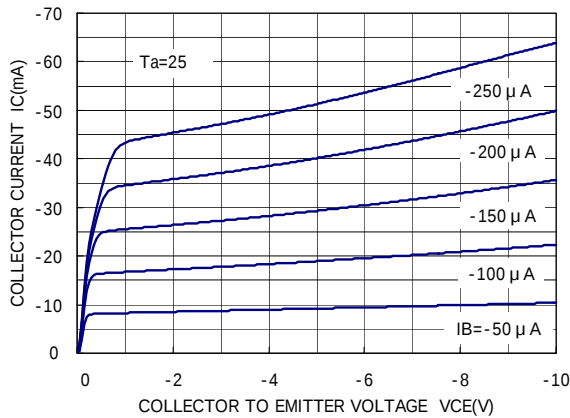


SMALL-SIGNAL TRANSISTOR

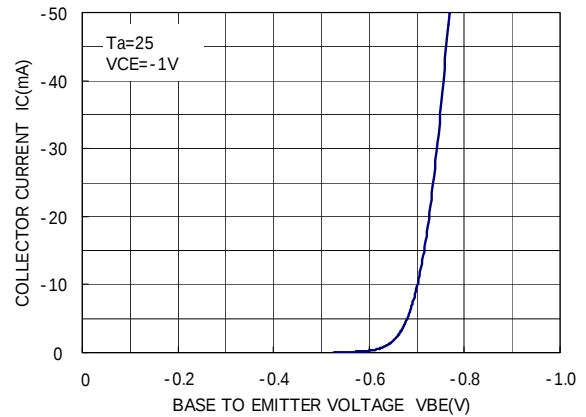
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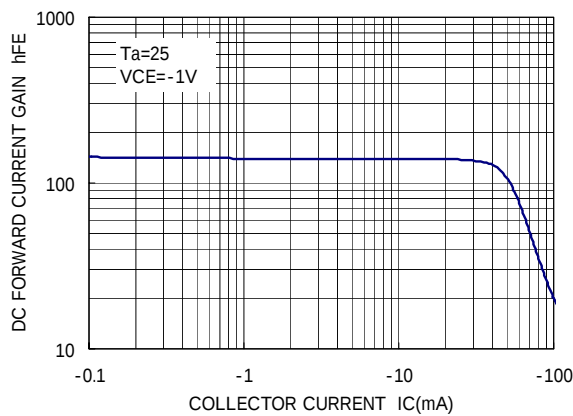
COMMON EMITTER OUTPUT



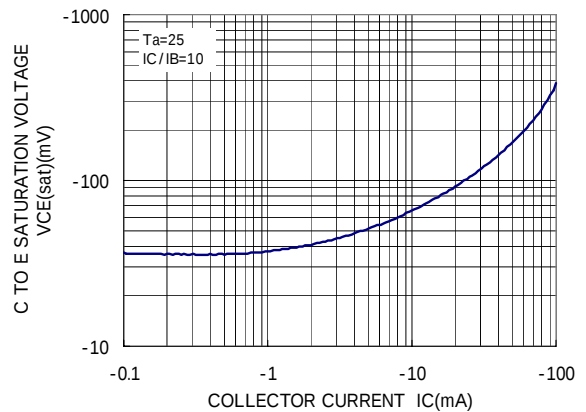
COMMON EMITTER TRANSFER



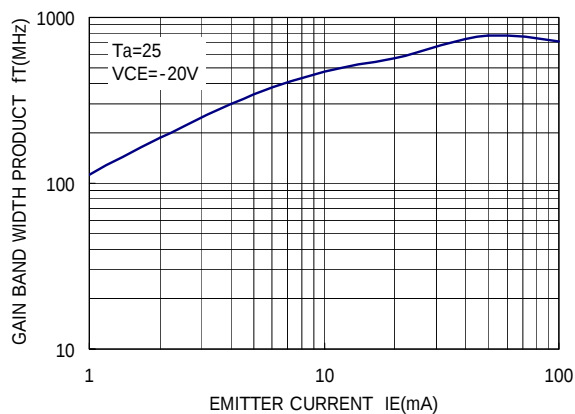
DC FORWARD CURRENT GAIN
VS. COLLECTOR CURRENT



COLLECTOR-EMITTER SATURATION VOLTAGE
VS. COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT VS.
EMITTER CURRENT



COLLECTOR OUTPUT CAPACITANCE
VS. COLLECTOR TO BASE VOLTAGE

