〈SMALL-SIGNAL TRANSISTOR〉

ISA1993AS1

FOR LOW FREQUENCY AMPLIFY APPLICATION
SILICON PNP EPITAXIAL TYPE(FRAME TYPE)

DESCRIPTION

ISA1993AS1 is mini package resin sealed silicon PNP epitaxial transistor,
It is designed for low frequency voltage application.

FEATURE

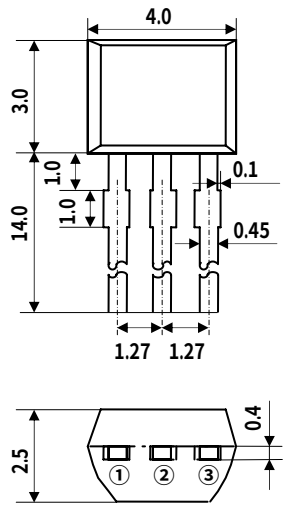
- Small collector to emitter saturation voltage.
  VCE(sat)=max-0.3V (@Ic=-100mA、IB=-10mA)
- Excellent linearity of DC forward gain.
- Super mini package for easy mounting

APPLICATION

small type machine low frequency voltage Amplify application.

OUTLINE DRAWING

Unit:mm



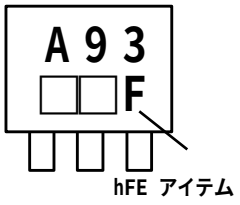
JEITA:
JEDEC:

TERMINAL CONNECTER
①:EMITTER
②:COLLECTOR
③:BASE

MAXIMUM RATINGS (Ta=25°C)

Symbol	Parameter	Ratings	Unit
V_{CBO}	Collector to Base voltage	-50	V
V_{CEO}	Collector to Emitter voltage	-50	V
V_{EBO}	Emitter to Base voltage	-6	V
I_O	Collector current	-200	mA
P_c	Collector dissipation	450	mW
T_j	Junction temperature	+150	°C
T_{stg}	Storage temperature	-55～+150	°C

MARKING



ELECTRICAL CHARACTERISTICS (Ta=25°C)

Parameter	Symbol	Test conditions	Limits			Unit
			Min	Typ	Max	
C to E break down voltage	$V_{(BR)CEO}$	I_C= -100μA , R_{BE}= ∞	-50	-	-	V
Collector cut off current	ICBO	V_{CB}= -50V , I_E= 0mA	-	-	-0.1	μA
Emitter cut off current	IEBO	V_{EB}= -6V , I_C= 0mA	-	-	-0.1	μA
DC forward current gain	hFE	V_{CE} = -6V , I_C= -1mA	150	-	500	-
DC forward current gain	hFE	V_{CE} = -6V , I_C= -0.1mA	50	-	-	-
C to E Saturation Vlotage	VCE(sat)	I_C= -100mA , I_B= -10mA	-	-	-0.3	V
Gain bandwidth product	fT	V_{CE}= -6V , I_E= 10mA	-	200	-	MHz
Collector output capacitance	Cob	V_{CB}= -6V , I_E= 0mA,f=1MHz	-	4.0	-	pF
NoiseFigure	NF	V_{CE}= -6V , I_E= 0.3mA,f=100Hz,R_G=10kΩ	-	-	20	dB

※) It shows hFE classification in below table.

Item	E	F
hFE item	150～300	250～500

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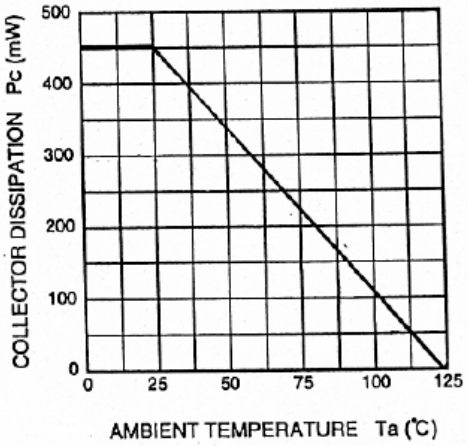
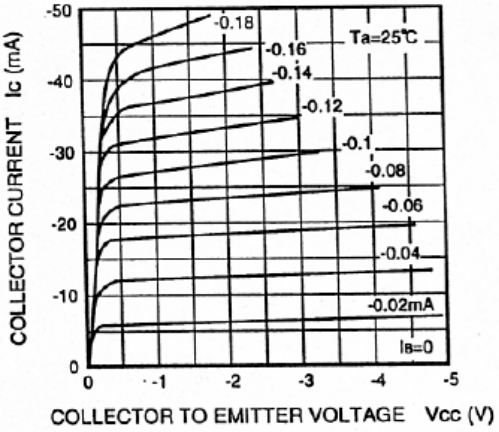
TYPICAL CHARACTERISTICS

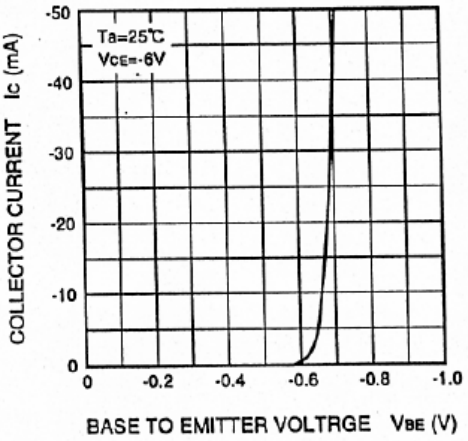
COLLECTOR DISSIPATION VS.AMBIENT TEMPERATURE



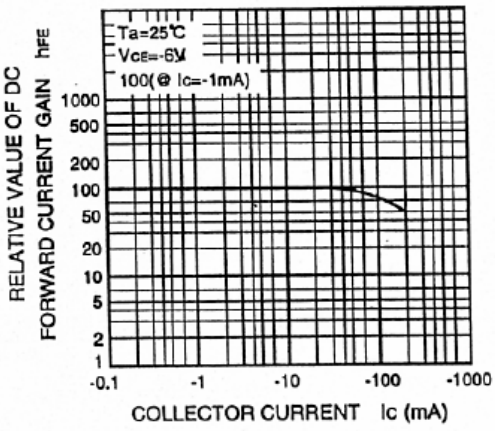
COMMON EMITTER OUTPUT



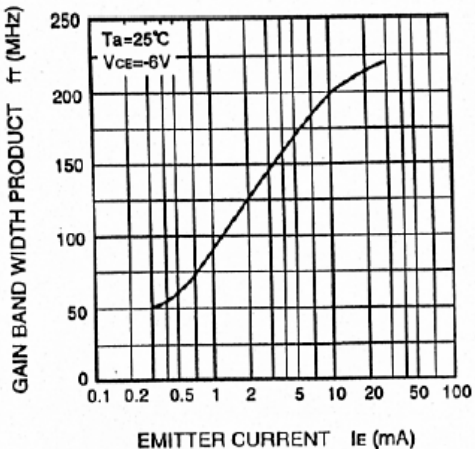
COMMON EMITTER TRANSFER



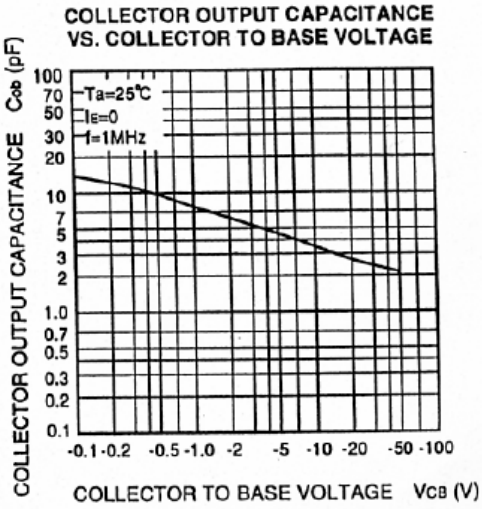
DC FORWORD CURRENT GAIN VS. COLLECTOR CURRENT



GAIN BAND WIDTH PRODUCT VS. EMITTER CURRENT



COLLECTOR OUTPUT CAPACITANCE VS. COLLECTOR TO BASE VOLTAGE



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