

General Purpose Transistor

(−50V, −100mA)

2SA2199

●Applications

Small signal low frequency amplifier

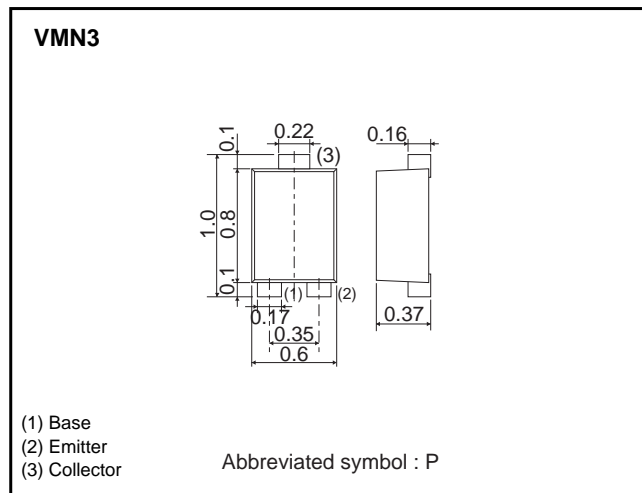
●Features

- 1) Excellent h_{FE} linearity.
- 2) Complements the 2SC6114.

●Structure

PNP silicon epitaxial
planar transistor

●Dimensions (Unit : mm)



●Absolute maximum (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	−50	V
Collector-emitter voltage	V_{CEO}	−50	V
Emitter-base voltage	V_{EBO}	−5	V
Collector current	I_C	−100	mA
	I_{CP} *1	−200	
Power dissipation	P_D *2	150	mW
Junction temperature	T_j	150	°C
Range of storage temperature	T_{stg}	−55 to +150	°C

*1 $P_w=1ms$ Single pulse

*2 Each terminal mounted on a recommended land

Transistors

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-emitter breakdown voltage	BV _{CEO}	-50	-	-	V	I _C =-1mA
Collector-base breakdown voltage	BV _{CBO}	-50	-	-	V	I _C =-50μA
Emitter-base breakdown voltage	BV _{EBO}	-5	-	-	V	I _E =-50μA
Collector cutoff current	I _{CBO}	-	-	-0.1	μA	V _{CB} =-50V
Emitter cutoff current	I _{EBO}	-	-	-0.1	μA	V _{EB} =-5V
Collector-emitter saturation voltage	V _{CE(sat)}	-	-	-0.3	V	I _C /I _B =-25mA/-2.5mA
DC current gain	h _{FE}	120	-	390	-	V _{CE} =-6V, I _C =-2mA
Transition frequency	f _r	-	110	-	MHz	V _{CE} =-10V, I _E =1mA, f=100MHz
Output capacitance	C _{ob}	-	2.0	-	pF	V _{CB} =-10V, I _E =0A, f=1MHz

h_{FE} RANK

Rank	Q	R
h _{FE}	120 to 270	180 to 390

●Electrical characteristic curves

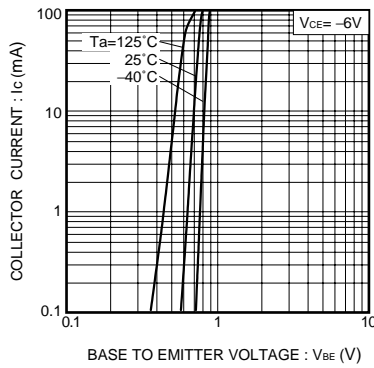


Fig.1 Grounded emitter propagation characteristics

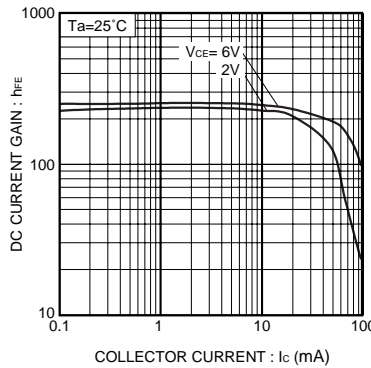


Fig.2 DC current gain vs. collector current (I)

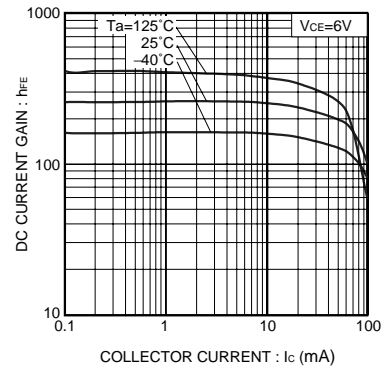


Fig.3 DC current gain vs. collector current (II)

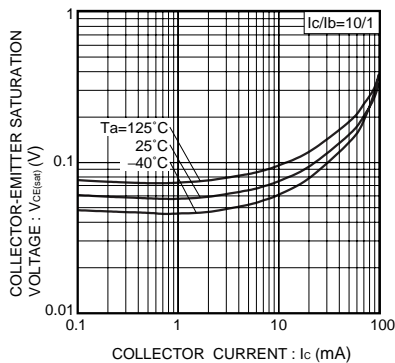


Fig.4 Collector-emitter saturation voltage vs. collector current

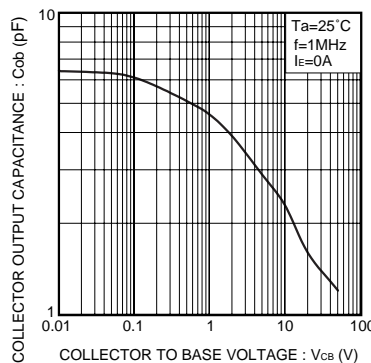


Fig.5 Collector output capacitance

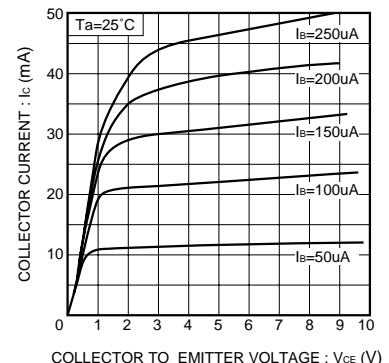


Fig.6 Typical output characteristics

Transistors

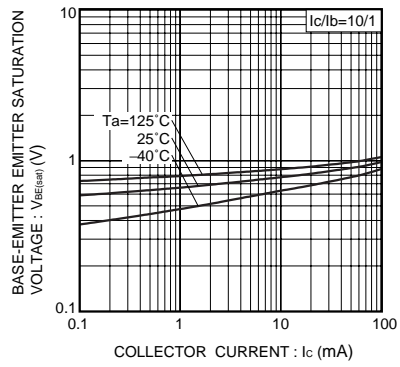


Fig.7 Base-emitter saturation voltage vs. collector current

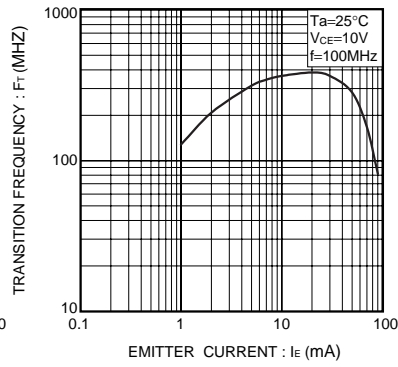


Fig.8 Transition frequency

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