

Small signal low frequency amplifier (50V, 100mA) 2SC6114

●Applications

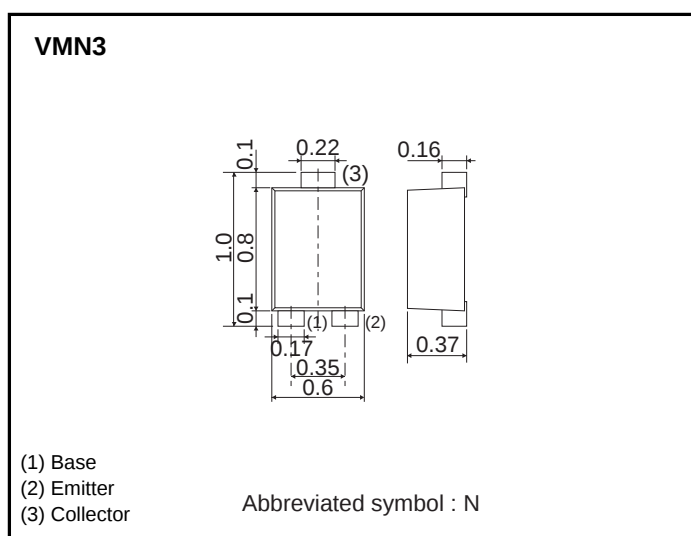
Small signal low frequency amplifier

●Features

- 1) Low Cob.
Cob=2.0pF (Typ.)
- 2) Complements the 2SA2199.

●Structure

NPN 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	$I_C=1\text{mA}$
Collector-base breakdown voltage	BV_{CBO}	50	—	—	V	$I_C=50\mu\text{A}$
Emitter-base breakdown voltage	BV_{EBO}	5	—	—	V	$I_E=50\mu\text{A}$
Collector cutoff current	I_{CBO}	—	—	0.1	μA	$V_{CB}=50\text{V}$
Emitter cutoff current	I_{EBO}	—	—	0.1	μA	$V_{EB}=5\text{V}$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	0.3	V	$I_C/I_B=25\text{mA}/2.5\text{mA}$
DC current gain	h_{FE}	120	—	390	—	$V_{CE}=6\text{V}$, $I_C=2\text{mA}$
Transition frequency	f_r	—	130	—	MHz	$V_{CE}=10\text{V}$, $I_E=-1\text{mA}$, $f=100\text{MHz}$
Output capacitance	C_{ob}	—	1.0	—	pF	$V_{CE}=10\text{V}$, $I_E=0\text{A}$, $f=1\text{MHz}$

 h_{FE} RANK

Rank	Q	R
h_{FE}	120 to 270	180 to 390

●Electrical characteristic curves

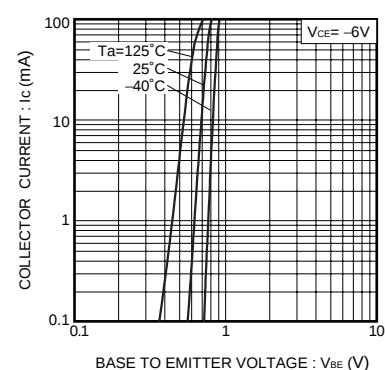


Fig.1 Grounded emitter propagation characteristics

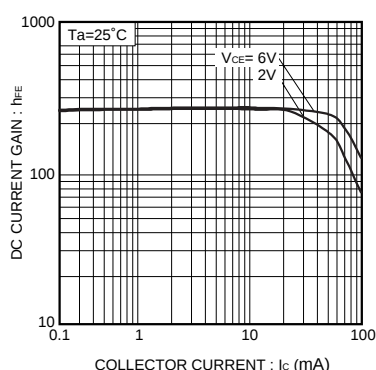


Fig.2 DC current gain vs. collector current (I)

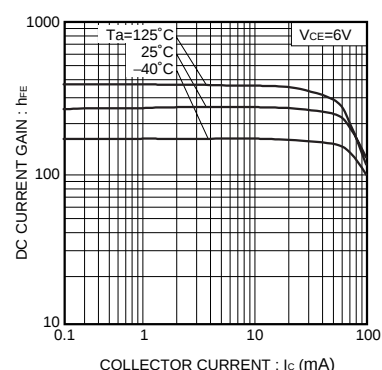


Fig.3 DC current gain vs. collector current (II)

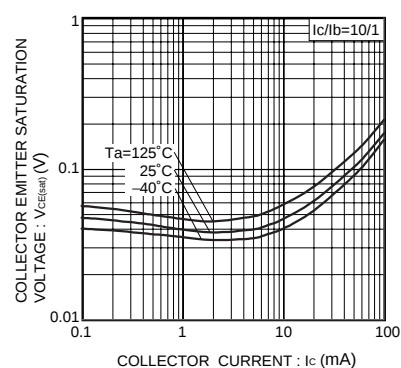


Fig.4 Collector-emitter saturation voltage vs. collector current

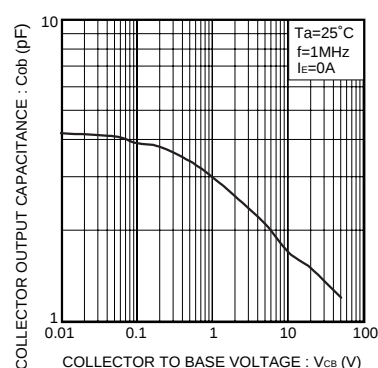


Fig.5 Collector output capacitance

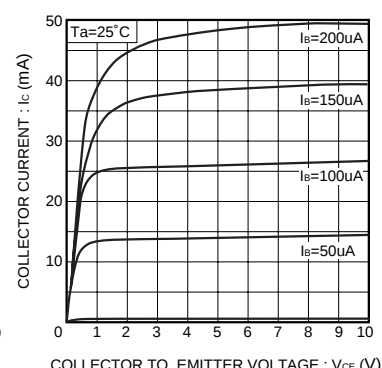


Fig.6 Typical output characteristics

Transistors

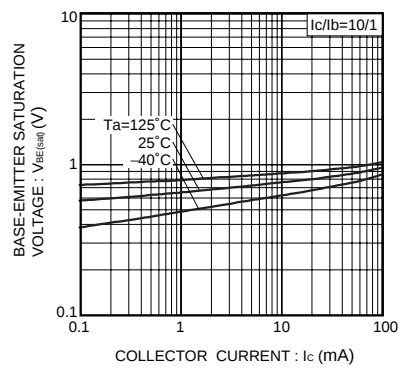


Fig.7 Base-emitter saturation voltage vs. collector current

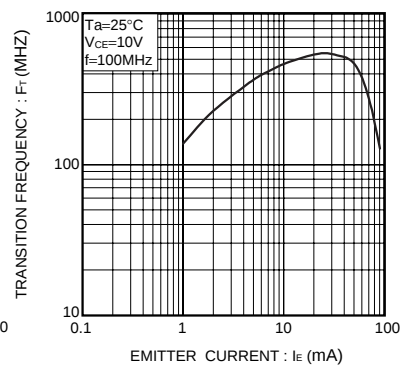


Fig.8 Transition frequency

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