

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

2SC6114

●Applications

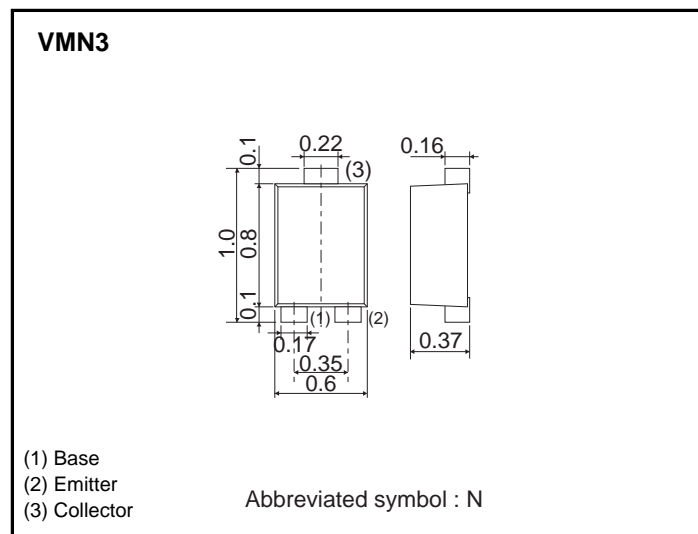
Small signal low frequency amplifier

●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 Pw=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	$I_C=50\mu A$
Emitter-base breakdown voltage	BV_{EBO}	5	–	–	V	$I_E=50\mu A$
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	–	130	–	MHz	$V_{CE}=10V, I_E=-1mA, f=100MHz$
Output capacitance	C_{ob}	–	1.0	–	pF	$V_{CE}=10V, I_E=0A, f=1MHz$

h_{FE} RANK

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

●Electrical characteristic curves

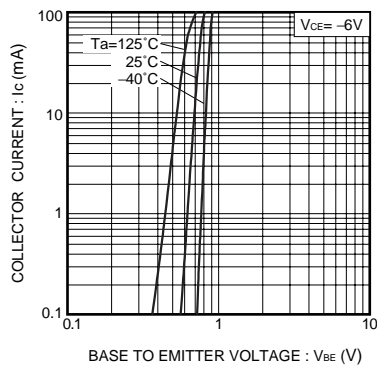


Fig.1 Grounded emitter propagation characteristics

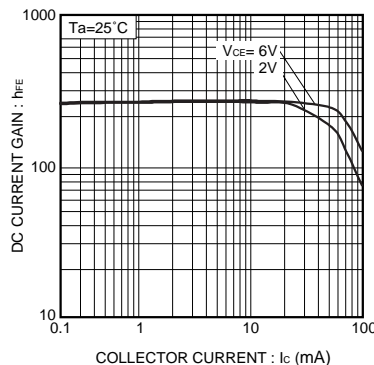


Fig.2 DC current gain vs. collector current (I)

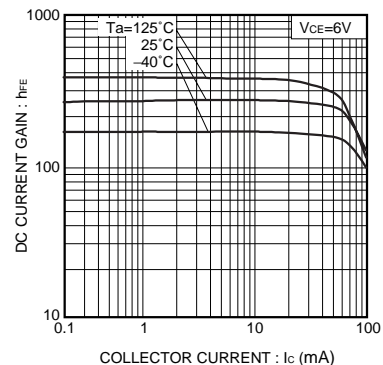


Fig.3 DC current gain vs. collector current (II)

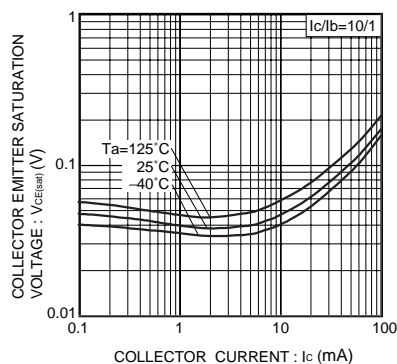


Fig.4 Collector-emitter saturation voltage vs. collector current

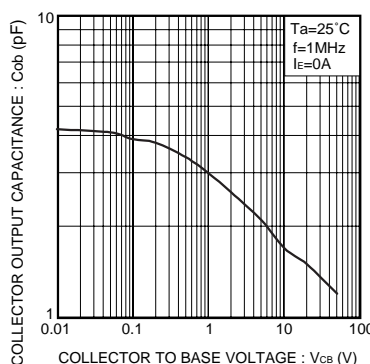


Fig.5 Collector output capacitance

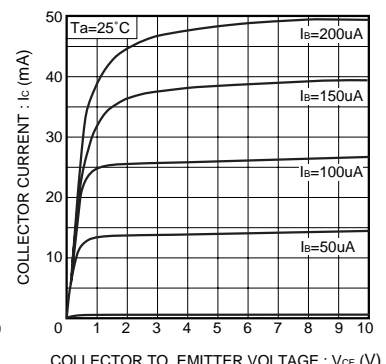


Fig.6 Typical output characteristics

Transistors

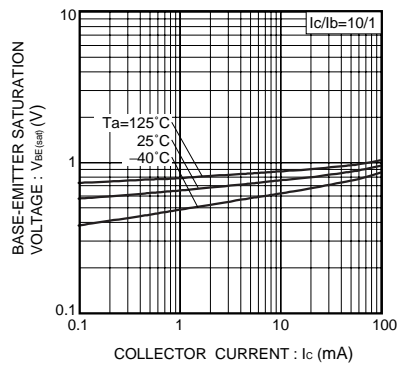


Fig.7 Base-emitter saturation voltage vs. collector current

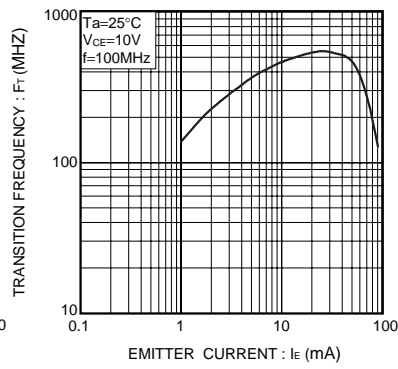


Fig.8 Transition frequency

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