

# General purpose small signal amplifier (50V, 0.15A)

## 2SC4617EB

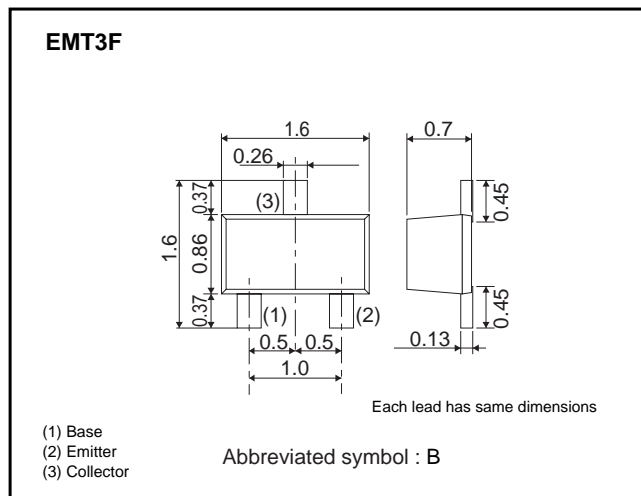
### ●Features

- 1) Excellent  $h_{FE}$  linearity.
- 2) Complements the 2SA1774EB.

### ●Structure

NPN silicon epitaxial  
planar transistor

### ●Dimensions (Unit : mm)



### ●Absolute maximum ( $T_a=25^\circ\text{C}$ )

Parameter	Symbol	Limits	Unit
Collector-base voltage	$V_{CBO}$	60	V
Collector-emitter voltage	$V_{CEO}$	50	V
Emitter-base voltage	$V_{EBO}$	7	V
Collector current	$I_C$	150	mA
	$I_{CP}$ *1	200	
Power dissipation	$P_D$ *2	150	mW
Junction temperature	$T_J$	150	$^\circ\text{C}$
Range of storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

\*1  $P_w=1\text{ms}$  Single pulse

\*2 Each terminal mounted on a recommended land

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●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	$BV_{CBO}$	60	-	-	V	$I_C=50\mu A$
Emitter-base breakdown voltage	$BV_{EBO}$	7	-	-	V	$I_E=50\mu A$
Collector cutoff current	$I_{CBO}$	-	-	100	nA	$V_{CB}=60V$
Emitter cutoff current	$I_{EBO}$	-	-	100	nA	$V_{EB}=7V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	-	400	mV	$I_C/I_B=50mA/5mA$
DC current gain	$h_{FE}$	82	-	560	-	$V_{CE}=6V, I_C=1mA$
Transition frequency	$f_r$	-	180	-	MHz	$V_{CE}=12V, I_E=-2mA, f=100MHz$
Output capacitance	$C_{ob}$	-	2	3.5	pF	$V_{CE}=12V, I_E=0A, f=1MHz$

$h_{FE}$  rank categories

Rank	P	Q	R	S
$h_{FE}$	82 to 180	120 to 270	180 to 390	270 to 560

●Electrical characteristic curves

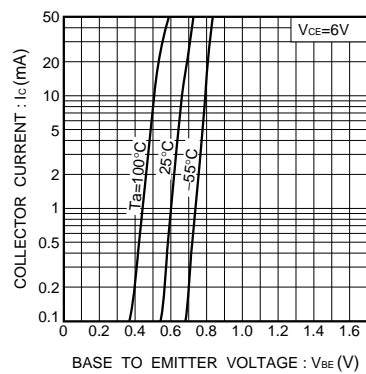


Fig.1 Grounded emitter propagation characteristics

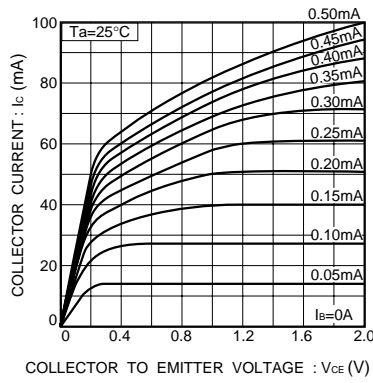


Fig.2 Grounded emitter output characteristics ( I )

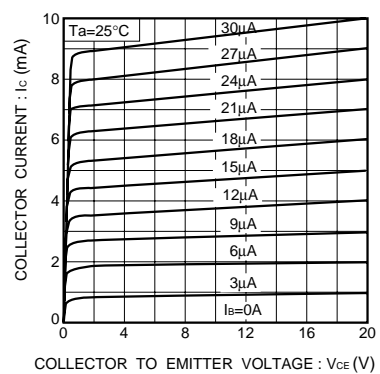


Fig.3 Grounded emitter output characteristics ( II )

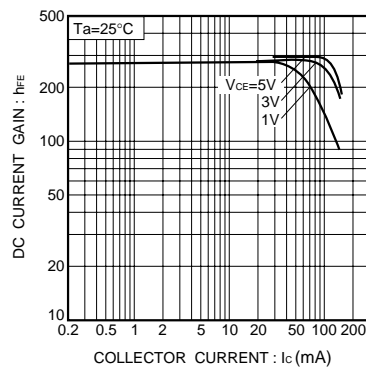


Fig.4 DC current gain vs. collector current ( I )

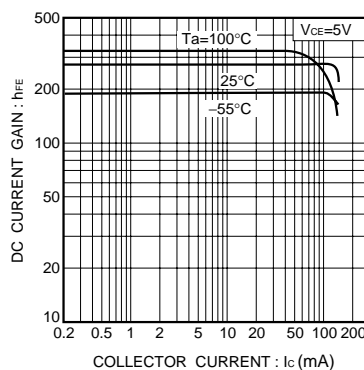


Fig.5 DC current gain vs. collector current ( II )

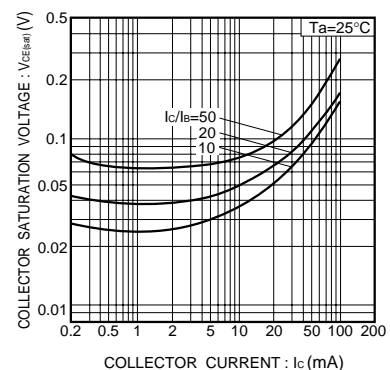


Fig.6 Collector-emitter saturation voltage vs. collector current

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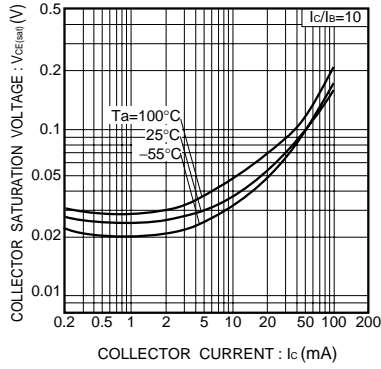


Fig.7 Collector-emitter saturation voltage vs. collector current ( I )

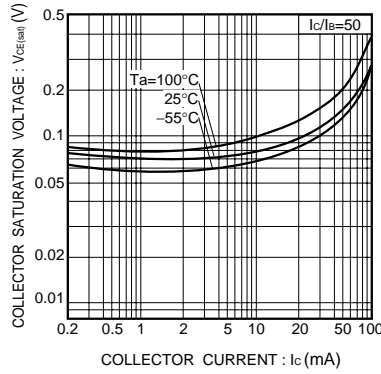


Fig.8 Collector-emitter saturation voltage vs. collector current (II)

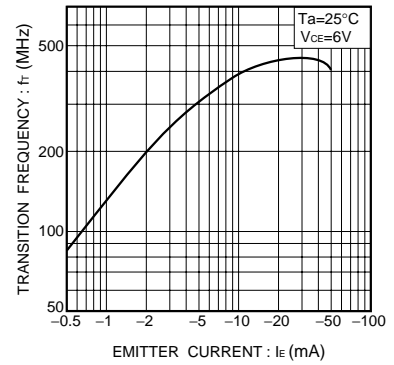


Fig.9 Gain bandwidth product vs. emitter current

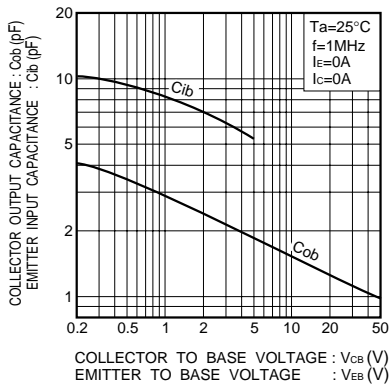


Fig.10 Collector output capacitance vs. collector-base voltage  
Emitter input capacitance vs. emitter-base voltage

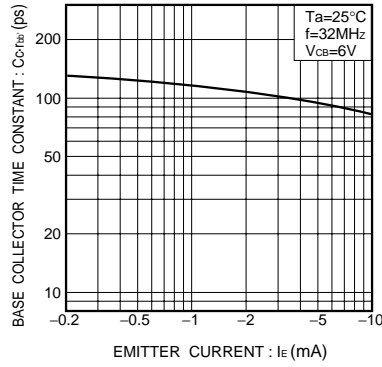


Fig.11 Base-collector time constant vs. emitter current

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