

# General purpose amplification(-12V, -2A)

## 2SB1690K

### ●Applications

Low frequency amplifier

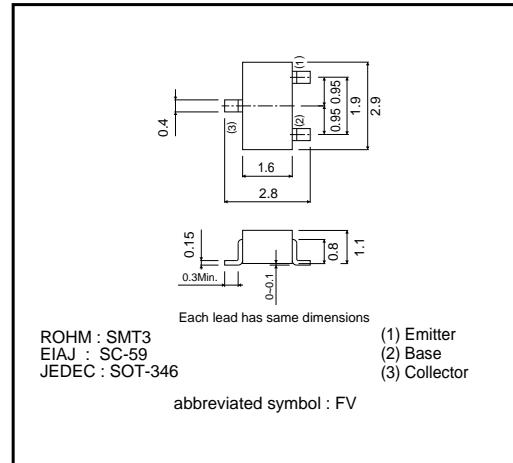
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### ●Features

- 1) A collector current is large.
- 2) Collector saturation voltage is low.

$V_{CE(sat)} \leq -180\text{mV}$   
at  $I_C = -1\text{A}$  /  $I_B = -50\text{mA}$

### ●External dimensions (Units : mm)



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

Parameter	Symbol	Limits	Unit
Collector-base voltage	$V_{CBO}$	-15	V
Collector-emitter voltage	$V_{CEO}$	-12	V
Emitter-base voltage	$V_{EBO}$	-6	V
Collector current	$I_C$	-2 -4	A A*
Collector power dissipation	$P_C$	200	mW
Junction temperature	$T_J$	150	$^\circ\text{C}$
Storage temperature	$T_{STG}$	-55 to +150	$^\circ\text{C}$

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

### ●Packaging specifications

Type	Package	Taping
	Code	T146
	Basic ordering unit (pieces)	3000

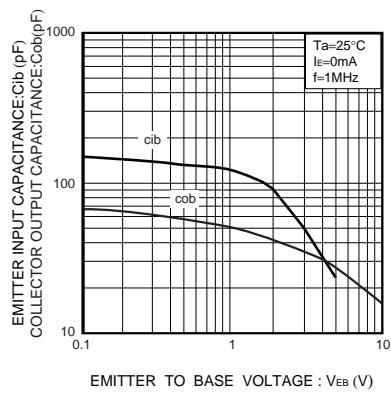
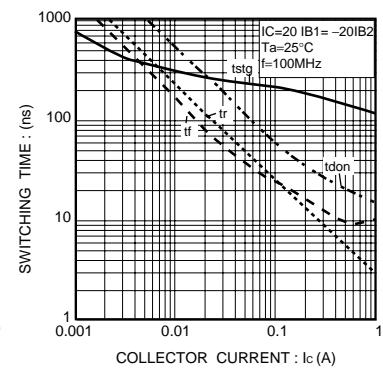
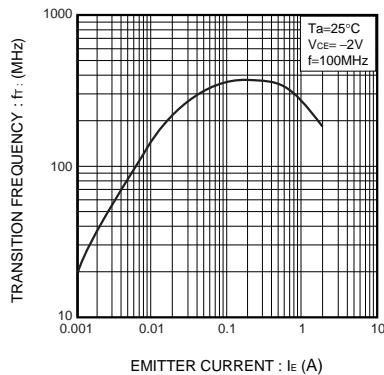
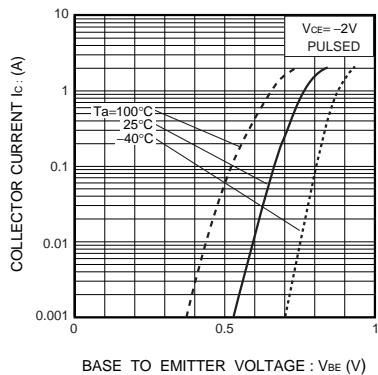
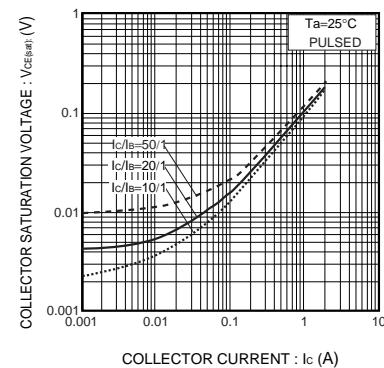
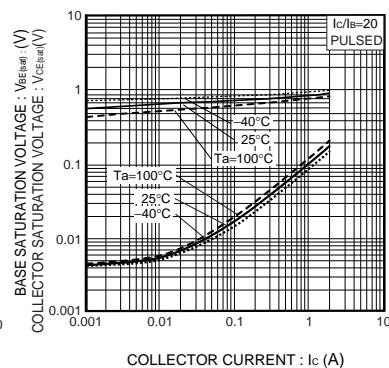
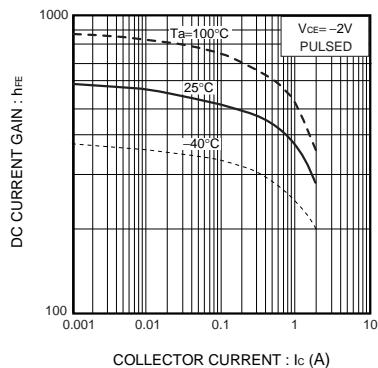
### ●Electrical characteristics ( $T_a=25^\circ\text{C}$ )

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	$BV_{CBO}$	-15	-	-	V	$I_C = -10\mu\text{A}$
Collector-emitter breakdown voltage	$BV_{CEO}$	-12	-	-	V	$I_C = -1\text{mA}$
Emitter-base breakdown voltage	$BV_{EBO}$	-6	-	-	V	$I_E = -10\mu\text{A}$
Collector cutoff current	$I_{CBO}$	-	-	-100	nA	$V_{CB} = -15\text{V}$
Emitter cutoff current	$I_{EBO}$	-	-	-100	nA	$V_{EB} = -6\text{V}$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	-120	-180	mV	$I_C = -1\text{A}$ , $I_B = -50\text{mA}$
DC current transfer ratio	$h_{FE}$	270	-	680	-	$V_{CE} = -2\text{V}$ , $I_C = -200\text{mA}$ *
Transition frequency	$f_T$	-	360	-	MHz	$V_{CE} = -2\text{V}$ , $I_E = -200\text{mA}$ , $f = 100\text{MHz}$ *
Output capacitance	$C_{OB}$	-	15	-	pF	$V_{CB} = -10\text{V}$ , $I_E = 0\text{mA}$ , $f = 1\text{MHz}$

\* Pulsed

## Transistors

## ● Electrical characteristic curves



## Appendix

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