

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

## 2SB1690

### ●Applications

Low frequency amplifier  
Driver

### ●Features

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

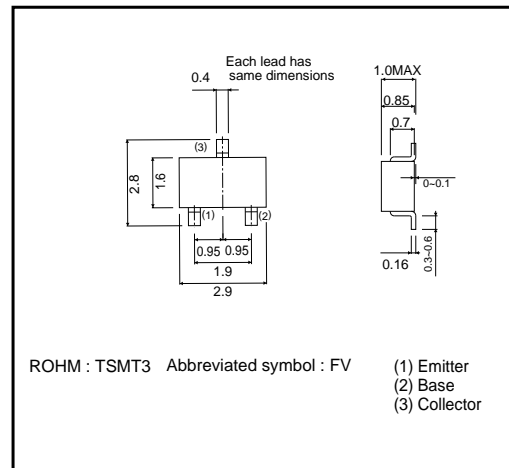
$$V_{CE(sat)} \leq -180\text{mV}$$

at  $I_C=1\text{A} / I_B=-50\text{mA}$

### ●Packaging specifications

Type	Package	Taping
	Code	TL
	Basic ordering unit (pieces)	3000
2SB1690		○

### ●External dimensions (Units : mm)



### ●Absolute maximum ratings (Ta=25°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	A
	$I_{CP}$	-4	A*
Collector power dissipation	$P_C$	500	mW
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55~+150	°C

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

### ●Electrical characteristics (Ta=25°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	$I_C=-1\text{mA}, I_B=-50\text{mA}$
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

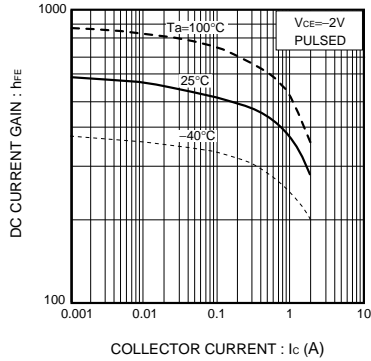


Fig.1 DC current gain vs. collector current

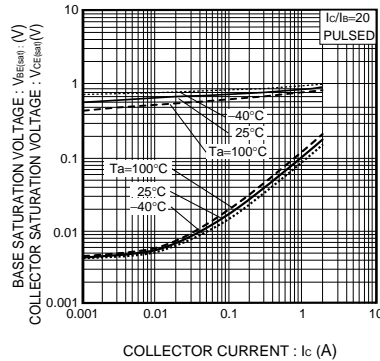


Fig.2 Collector-emitter saturation voltage base-emitter saturation voltage vs. collector current

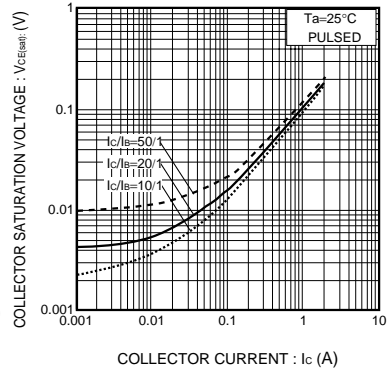


Fig.3 Collector-emitter saturation voltage vs. collector current

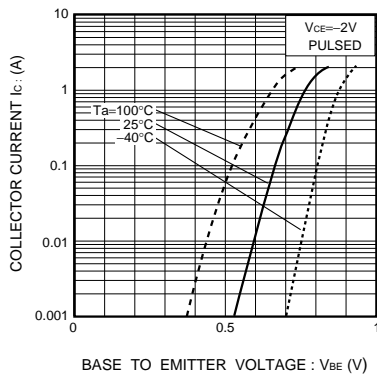


Fig.4 Grounded emitter propagation characteristics

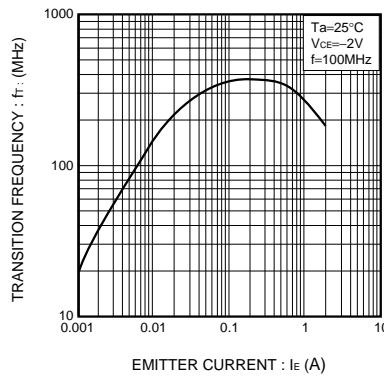


Fig.5 Gain bandwidth product vs. emitter current

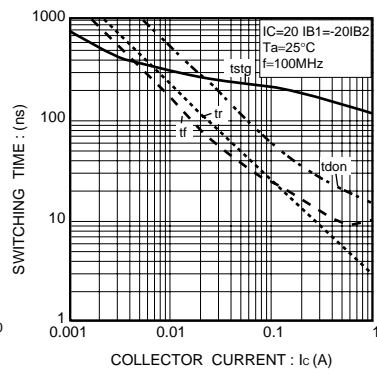


Fig.6 Switching time

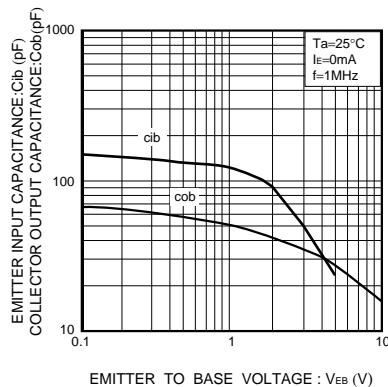


Fig.7 Collector output capacitance vs. collector-base voltage  
Emitter input capacitance vs. emitter-base voltage



LittleDiode supplies new, hard to find or obsolete electronic components and semiconductors all over the world.

With over two million different components listed you are sure to find the part you need.

Feel free to visit us today at our online store:

[LittleDiode.com](http://LittleDiode.com)

Looking forward to providing you with the best possible service.