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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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

2SB1690

●Applications

Low frequency amplifier
Deiver

●Features

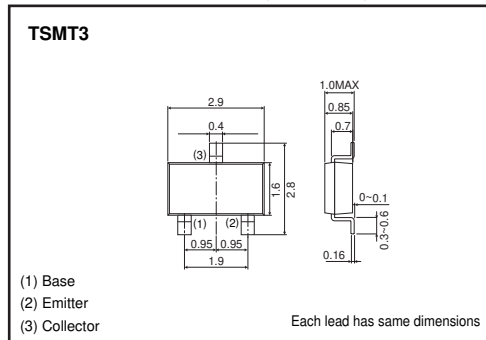
- 1) A collector current is large.
- 2) Collector saturation voltage is low.

$V_{CE(sat)}$: max. −180mV
at $I_C = -1A / I_B = -50mA$

●Packaging specifications

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

●External dimensions (Unit : 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 *1
Collector power dissipation	P_C	0.5	W *2
		1	W *3
Junction temperature	T_J	150	°C
Storage temperature	T_{stg}	−55 to +150	°C

*1 Single pulse $P_w = 1ms$

*2 Each terminal mounted on a recommended land

*3 Mounted on a 25mm×25mm×10.8mm ceramic substrate

●Electrical characteristics (Ta=25°C)

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

* Pulsed

Transistors

●Electrical characteristic curves

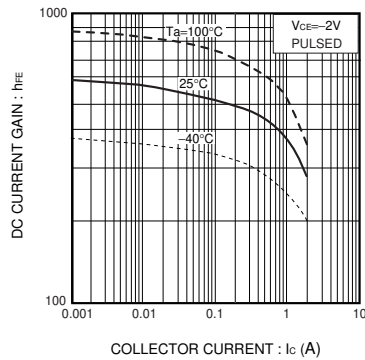


Fig.1 DC current gain vs. collector current

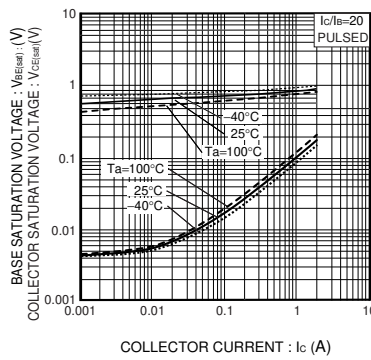


Fig.2 Collector-emitter saturation voltage base-emitter saturation voltage vs. collector current

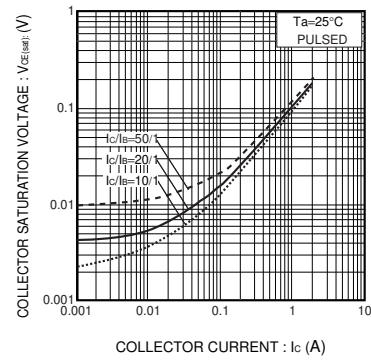


Fig.3 Collector-emitter saturation voltage vs. collector current

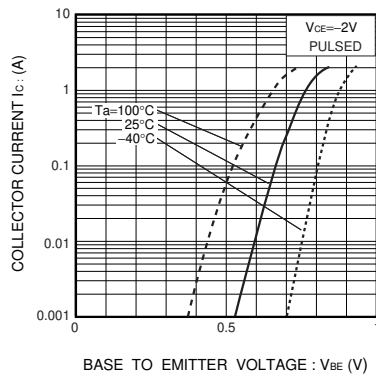


Fig.4 Grounded emitter propagation characteristics

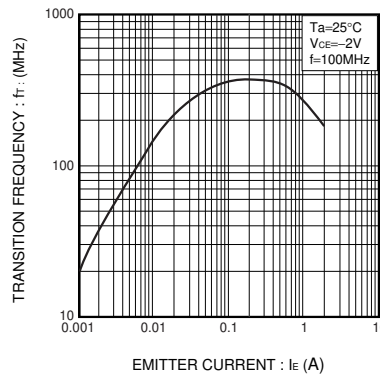


Fig.5 Gain bandwidth product vs. emitter current

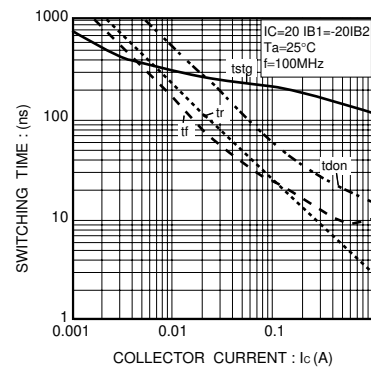


Fig.6 Switching time

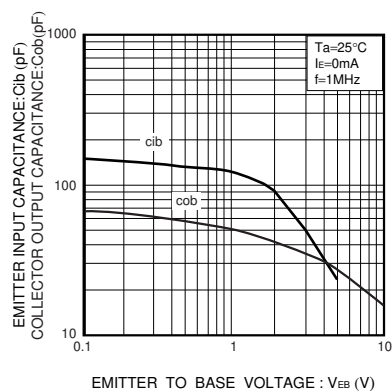


Fig.7 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

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