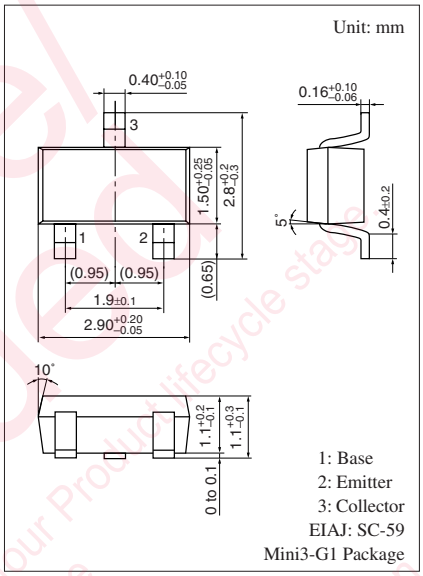
2SB1693

Silicon PNP epitaxial planar type

For general amplification



Marking Symbol: 3D

■ Features

- Large collector current I_C
- Mini type package, allowing downsizing of the equipment and automatic insertion through the tape packing and the magazine packing

■ Absolute Maximum Ratings $T_a = 25°C$

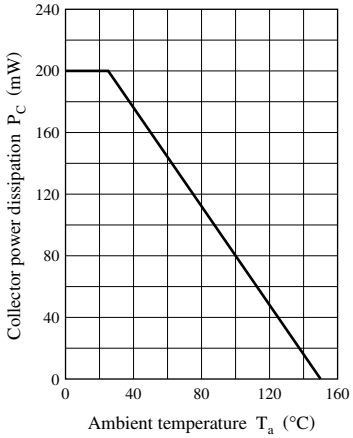
Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V_{CBO}	−40	V
Collector-emitter voltage (Base open)	V_{CEO}	−20	V
Emitter-base voltage (Collector open)	V_{EBO}	−15	V
Collector current	I_C	− 0.5	A
Peak collector current	I_{CP}	−1	A
Collector power dissipation	P_C	200	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	−55 to +150	°C

■ Electrical Characteristics $T_a = 25°C \pm 3°C$

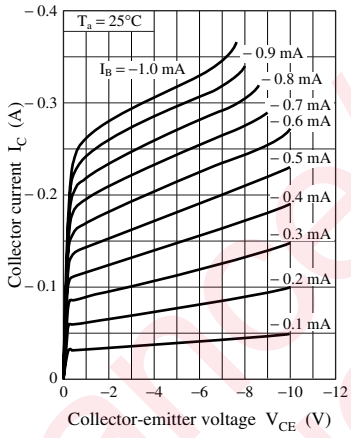
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	V_{CBO}	$I_C = -10$ µA, $I_E = 0$	−40			V
Collector-emitter voltage (Base open)	V_{CEO}	$I_C = -2$ mA, $I_B = 0$	−20			V
Emitter-base voltage (Collector open)	V_{EBO}	$I_E = -10$ µA, $I_C = 0$	−15			V
Forward current transfer ratio *	h_{FE1}	$V_{CE} = -2$ V, $I_C = -100$ mA	160		560	—
	h_{FE2}	$V_{CE} = -2$ V, $I_C = -500$ mA	100			
Collector-emitter saturation voltage *	$V_{CE(sat)}$	$I_C = -100$ mA, $I_B = -10$ mA		−60	−300	mV
		$I_C = -0.5$ A, $I_B = -25$ mA		−210	−500	
Transition frequency	f_T	$V_{CB} = -5$ V, $I_E = 50$ mA, f = 200 MHz		170		MHz
Collector output capacitance (Common base, input open circuited)	C_{ob}	$V_{CB} = -10$ V, $I_E = 0$, f = 1 MHz		16		pF

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.
2. *: Pulse measurement

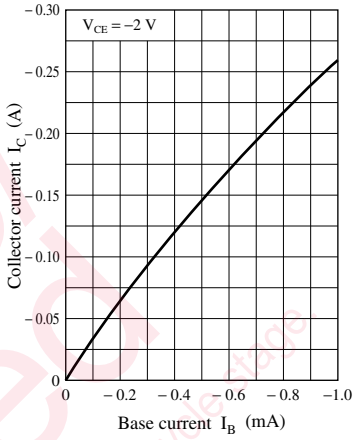
P_C — T_a



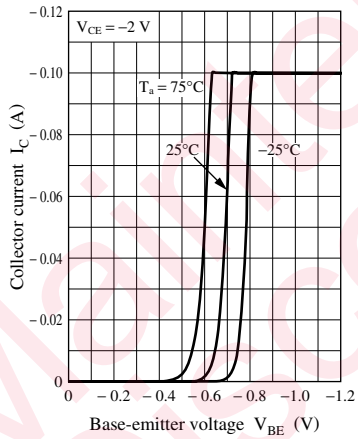
I_C — V_{CE}



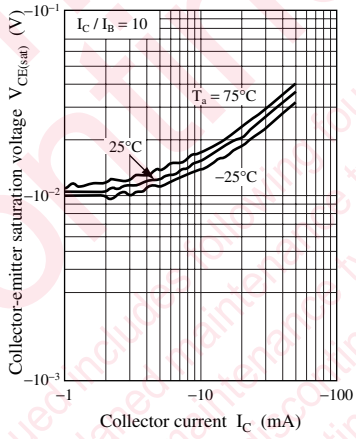
I_C — I_B



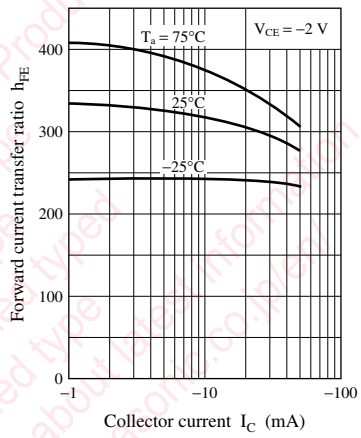
I_C — V_{BE}



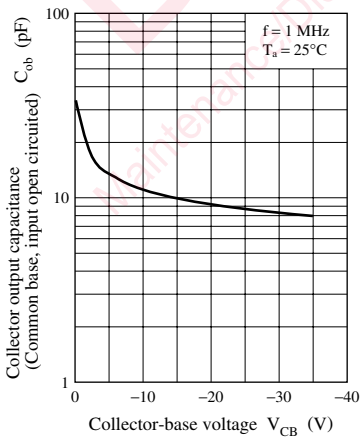
$V_{CE(sat)}$ — I_C



h_{FE} — I_C



C_{ob} — V_{CB}



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