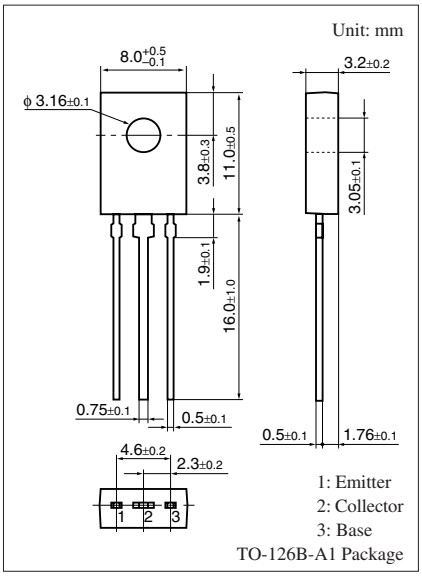
2SB1011

Silicon PNP triple diffusion planar type

For low-frequency output amplification



■ Features

- High collector-base voltage (Emitter open) V_{CBO}
- High collector-emitter voltage (Base open) V_{CEO}
- Large collector power dissipation P_C
- Low collector-emitter saturation voltage $V_{CE(sat)}$

■ Absolute Maximum Ratings $T_a = 25°C$

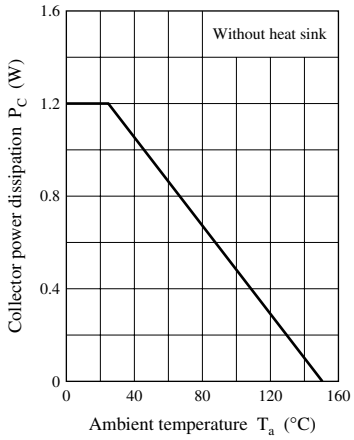
Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V_{CBO}	−400	V
Collector-emitter voltage (Base open)	V_{CEO}	−400	V
Emitter-base voltage (Collector open)	V_{EBO}	−5	V
Collector current	I_C	−100	mA
Peak collector current	I_{CP}	−200	mA
Collector power dissipation	P_C	1.2	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	−55 to +150	°C

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

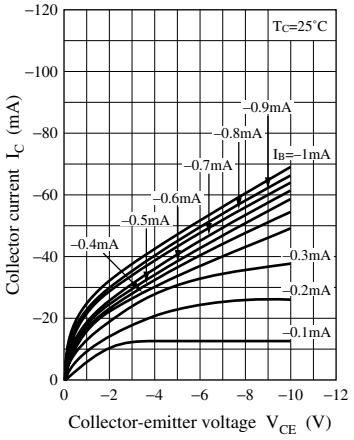
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emiter open)	V_{CBO}	$I_C = -100$ μA, $I_E = 0$	−400			V
Collector-emitter voltage (Base open)	V_{CEO}	$I_C = -500$ μA, $I_B = 0$	−400			V
Emiter-base voltage (Collector open)	V_{EBO}	$I_E = -100$ μA, $I_C = 0$	−5			V
Forward current transfer ratio	h_{FE}	$V_{CE} = -5$ V, $I_C = -30$ mA	30			—
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -50$ mA, $I_B = -5$ mA			−2.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = -50$ mA, $I_B = -5$ mA			−1.5	V
Transition frequency	f_T	$V_{CB} = -30$ V, $I_E = 20$ mA, f = 200 MHz		70		MHz
Collector output capacitance (Common base, input open circuited)	C_{ob}	$V_{CB} = -30$ V, $I_E = 0$, f = 1 MHz			9	pF

Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

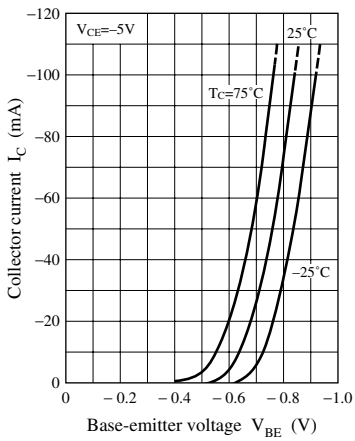
P_C — T_a



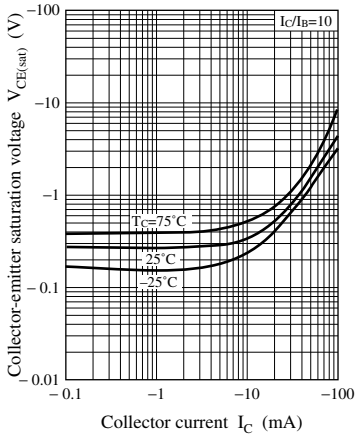
I_C — V_{CE}



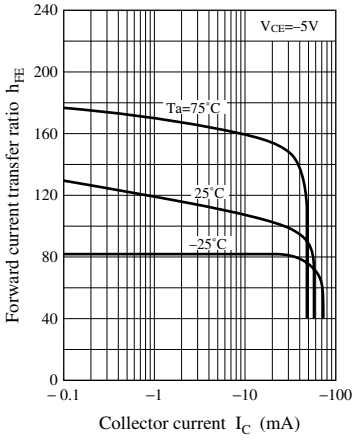
I_C — V_{BE}



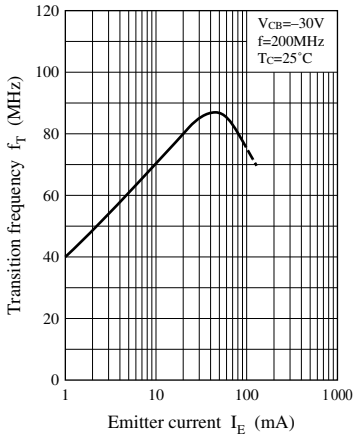
$V_{CE(sat)}$ — I_C



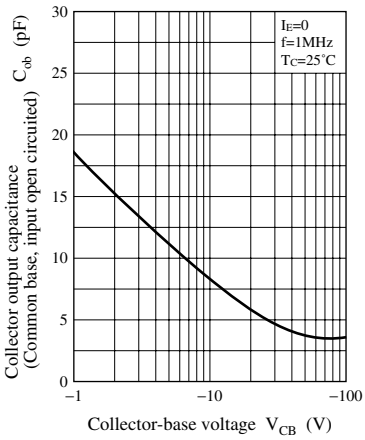
h_{FE} — I_C



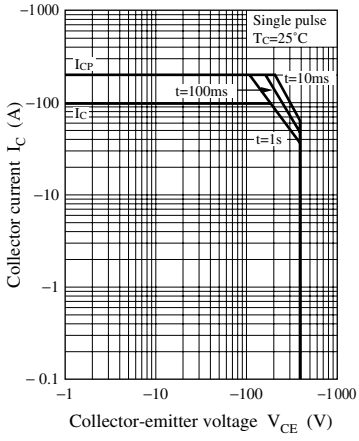
f_T — I_E

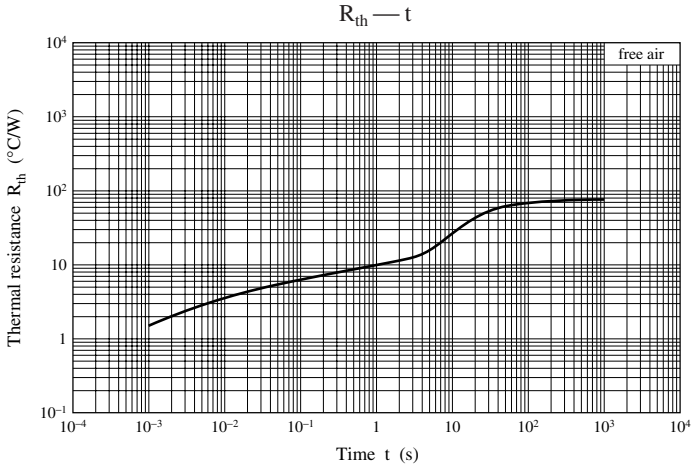


C_{ob} — V_{CB}



Sefe operation area




R_{th} — t
free air
Thermal resistance R_{th} (°C/W)
10^4
10^3
10^2
10
1
10^{-1}
10^{-4}
10^{-3}
10^{-2}
10^{-1}
1
10
10^2
10^3
10^4
Time t (s)

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