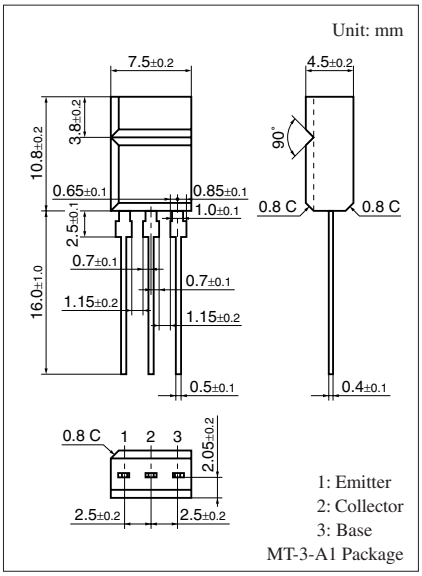
2SB1414

Silicon PNP epitaxial planar type

For low-frequency driver/high power amplification
Complementary to 2SD2134



■ Features

- Excellent current I_C characteristics of forward current transfer ratio h_{FE} vs. collector
- High transition frequency f_T
- Allowing automatic insertion with radial taping

■ Absolute Maximum Ratings $T_a = 25°C$

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V_{CBO}	−150	V
Collector-emitter voltage (Base open)	V_{CEO}	−150	V
Emitter-base voltage (Collector open)	V_{EBO}	−5	V
Collector current	I_C	−1	A
Peak collector current	I_{CP}	−1.5	A
Collector power dissipation	P_C	1.5	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	−55 to +150	°C

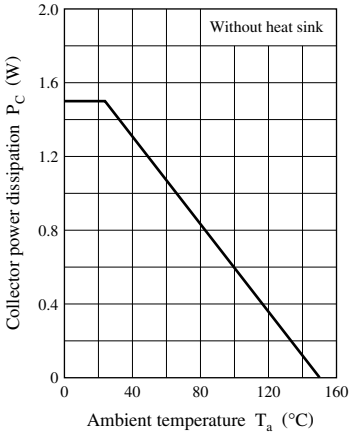
■ Electrical Characteristics $T_a = 25°C \pm 3°C$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-emitter voltage (Base open)	V_{CEO}	$I_C = -100$ μA, $I_B = 0$	−150			V
Emiter-base voltage (Collector open)	V_{EBO}	$I_E = -10$ μA, $I_C = 0$	−5			V
Forward current transfer ratio *1	h_{FE1} *2	$V_{CE} = -10$ V, $I_C = -150$ mA	90		330	—
	h_{FE2}	$V_{CE} = -5$ V, $I_C = -500$ mA	50			
Collector-emitter saturation voltage *1	$V_{CE(sat)}$	$I_C = -500$ mA, $I_B = -50$ mA		− 0.5	−2.0	V
Base-emitter saturation voltage *1	$V_{BE(sat)}$	$I_C = -500$ mA, $I_B = -50$ mA		−1.0	−2.0	V
Transition frequency	f_T	$V_{CB} = -10$ V, $I_E = 50$ mA, f = 200 MHz		200		MHz
Collector output capacitance (Common base, input open circuited)	C_{ob}	$V_{CB} = -10$ V, $I_E = 0$, f = 1 MHz		30		pF

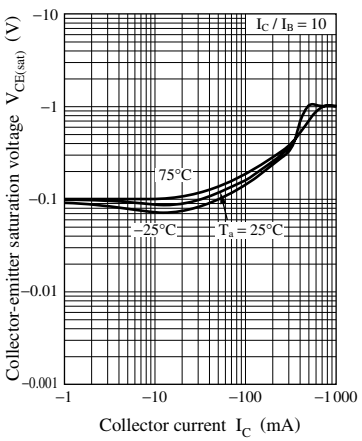
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.
2. ∗1: Pulse measurement
∗2: Rank classification

Rank	Q	R	S
h_{FE1}	90 to 155	130 to 220	185 to 330

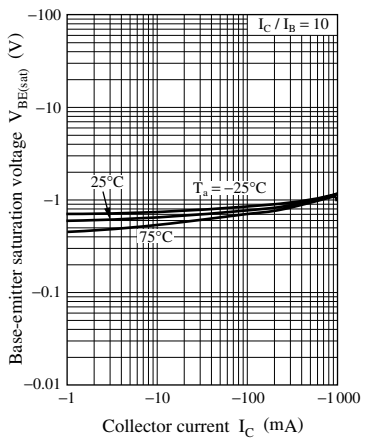
P_C — T_a



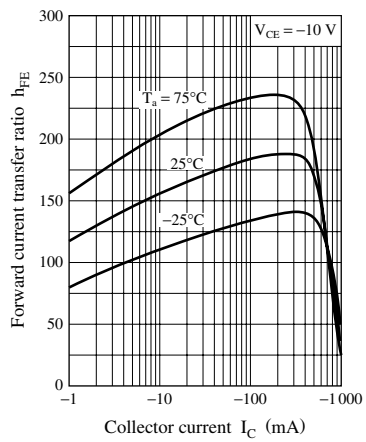
$V_{CE(sat)}$ — I_C



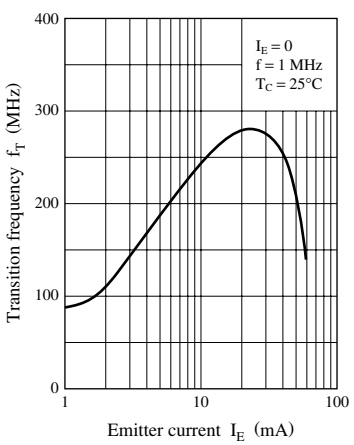
$V_{BE(sat)}$ — I_C



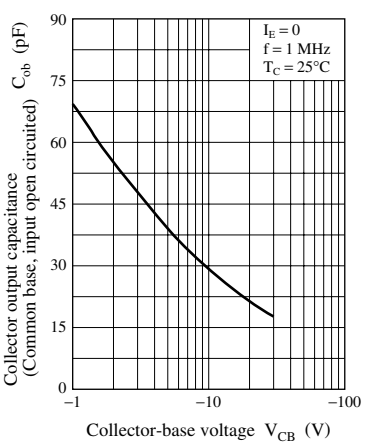
h_{FE} — I_C



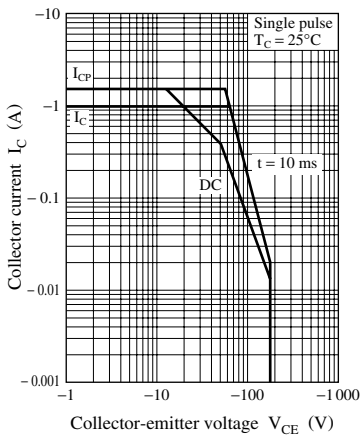
f_T — I_E



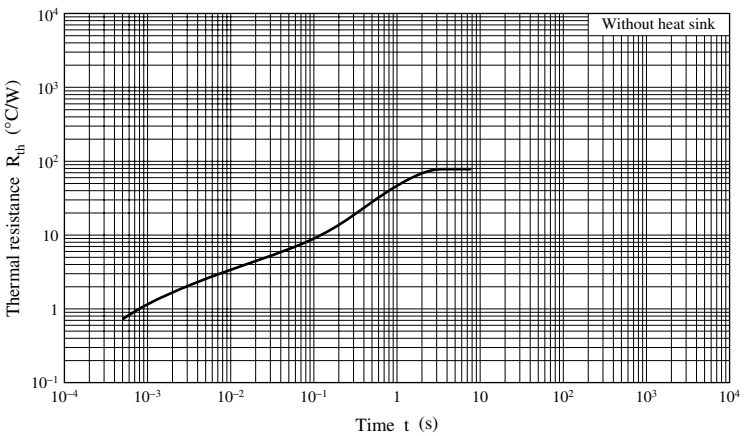
C_{ob} — V_{CB}



Safe operation area



R_{th} — t



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