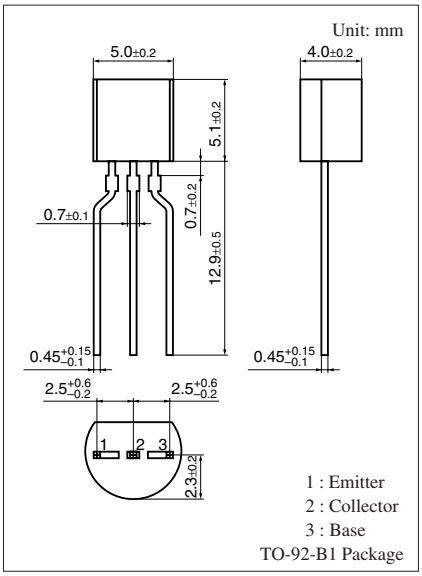
2SD2504

Silicon NPN epitaxial planar type

For low-frequency power amplification



■ Features

- Low collector-emitter saturation voltage $V_{CE(sat)}$
- Large collector current I_C

■ Absolute Maximum Ratings $T_a = 25°C$

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V_{CBO}	15	V
Collector-emitter voltage (Base open)	V_{CEO}	10	V
Emitter-base voltage (Collector open)	V_{EBO}	10	V
Collector current	I_C	5	A
Peak collector current *	I_{CP}	9	A
Collector power dissipation	P_C	750	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	−55 to +150	°C

Note) ∗: t = 380 µs

■ 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 = 1 mA, I_E = 0	10			V
Collector-emitter voltage (Base open)	V_{CEO}	I_C = 10 µA, I_B = 0	10			V
Collector-base cutoff current (Emitter open)	I_{CBO}	V_{CB} = 10 V, I_E = 0			0.1	µA
Collector-emitter cutoff current (Base open)	I_{CEO}	V_{CE} = 5 V, I_B = 0			1.0	µA
Emitter-base cutoff current (Collector open)	I_{EBO}	V_{EB} = 5 V, I_E = 0			0.1	µA
Forward current transfer ratio *	h_{FE1}	V_{CE} = 2 V, I_C = 0.5 A	300		800	—
	h_{FE2}	V_{CE} = 2 V, I_C = 2 A	195			
Collector-emitter saturation voltage *	$V_{CE(sat)}$	I_C = 3 A, I_B = 0.1 A		0.28	0.50	V
Transition frequency	f_T	V_{CB} = 6 V, I_E = −50 mA, f = 200 MHz		170		MHz
Collector output capacitance (Common base, input open circuited)	C_{ob}	V_{CB} = 20 V, I_E = 0, f = 1 MHz		45	65	pF

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

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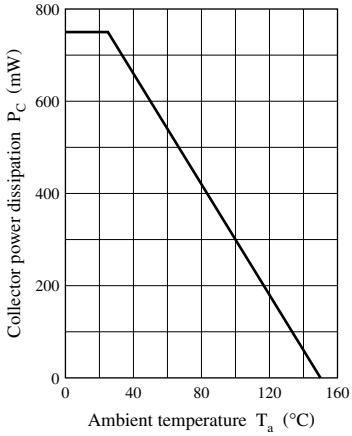
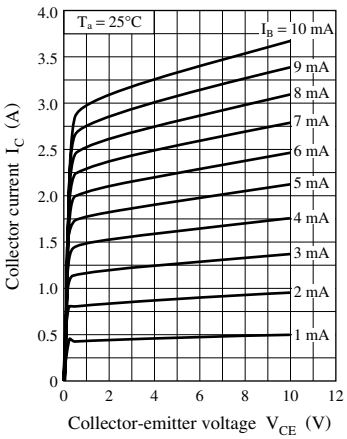
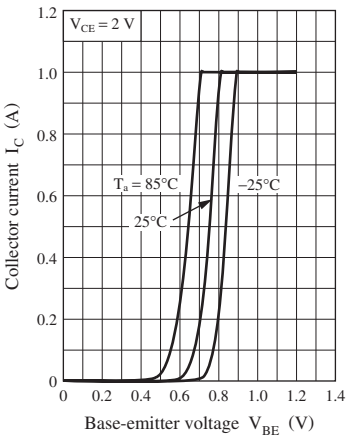
P_C — T_a



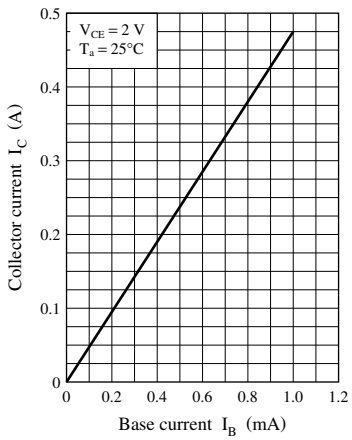
I_C — V_{CE}



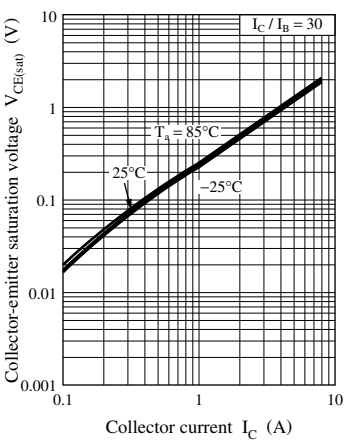
I_C — V_{BE}



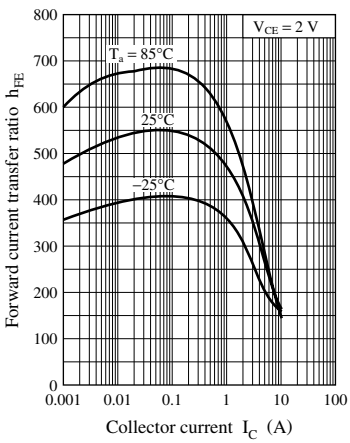
I_C — I_B



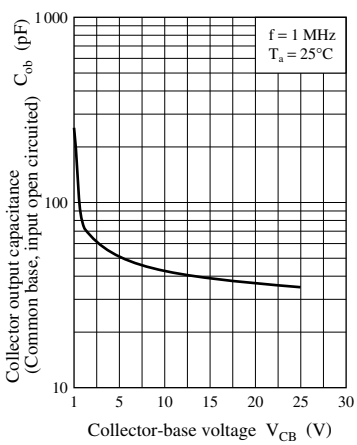
$V_{CE(sat)}$ — I_C



h_{FE} — I_C



C_{ob} — V_{CB}



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