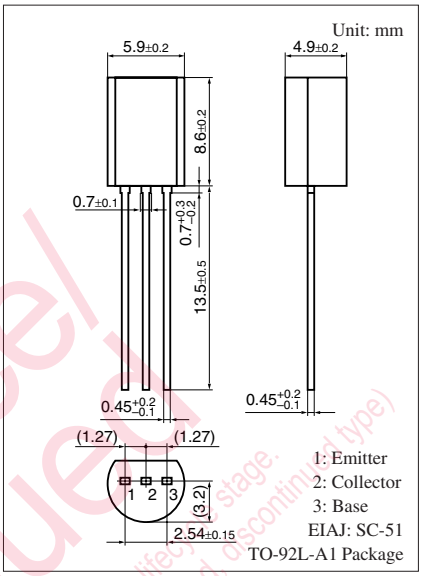
2SC1509

Silicon NPN epitaxial planar type

For low-frequency driver amplification
Complementary to 2SA0777 (2SA777)



■ Features

- High collector-emitter voltage (Base open) V_{CEO}
- Optimum for the driver stage of a low-frequency and 25 W to 30 W output amplifier

■ Absolute Maximum Ratings $T_a = 25°C$

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V_{CBO}	80	V
Collector-emitter voltage (Base open)	V_{CEO}	80	V
Emitter-base voltage (Collector open)	V_{EBO}	5	V
Collector current	I_C	0.5	A
Peak collector current	I_{CP}	1	A
Collector power dissipation	P_C	750	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	80			V
Collector-emitter voltage (Base open)	V_{CEO}	I_C = 100 µA, I_B = 0	80			V
Emitter-base voltage (Collector open)	V_{EBO}	I_E = 10 µA, I_C = 0	5			V
Collector-base cutoff current (Emitter open)	I_{CBO}	V_{CB} = 20 V, I_E = 0			0.1	µA
Forward current transfer ratio	h_{FE1}*	V_{CE} = 10 V, I_C = 150 mA	130		330	—
	h_{FE2}	V_{CE} = 5 V, I_C = 500 mA	50	100		—
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C = 300 mA, I_B = 30 mA		0.2	0.4	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C = 300 mA, I_B = 30 mA		0.85	1.2	V
Transition frequency	f_T	V_{CB} = 10 V, I_E = −50 mA, f = 200 MHz		120		MHz
Collector output capacitance (Common base, input open circuited)	C_{ob}	V_{CB} = 10 V, I_E = 0, f = 1 MHz		11	20	pF

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

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

Note) The part number in the parenthesis shows conventional part number.

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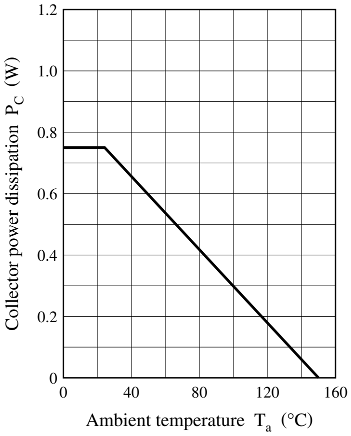
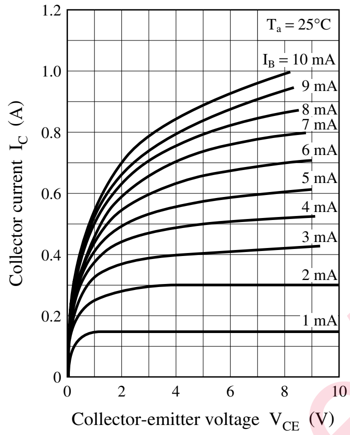
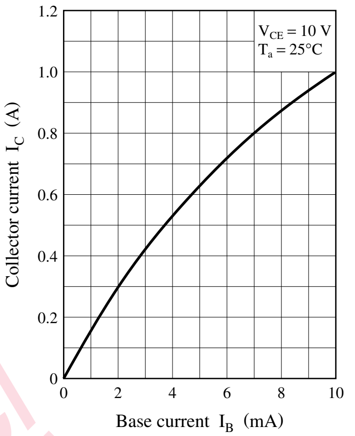
P_C — T_a



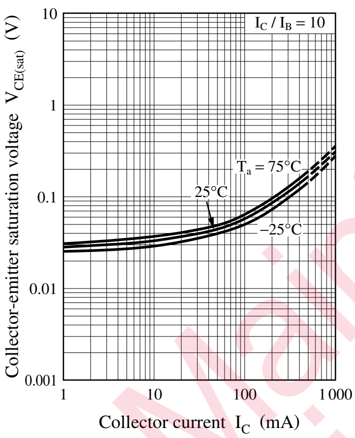
I_C — V_{CE}



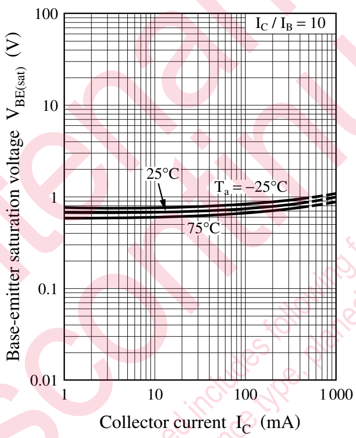
I_C — I_B



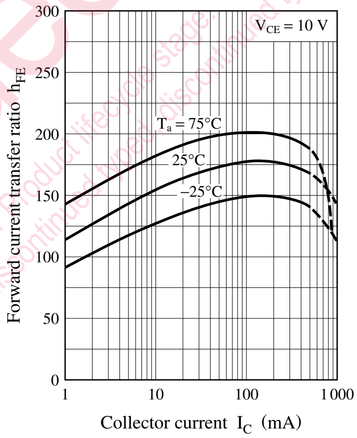
$V_{CE(sat)}$ — I_C



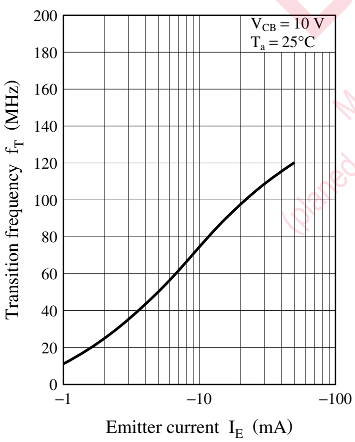
$V_{BE(sat)}$ — I_C



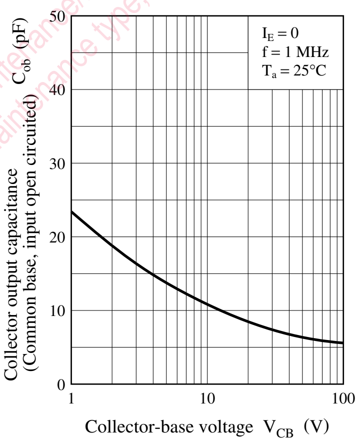
h_{FE} — I_C



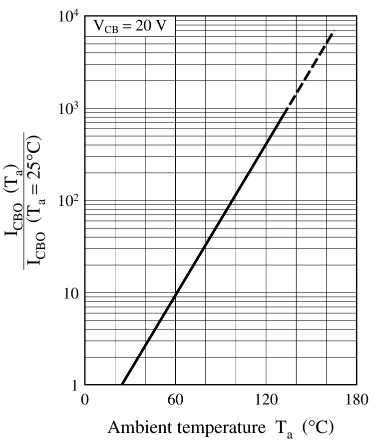
f_T — I_E



C_{ob} — V_{CB}



I_{CBO} — T_a



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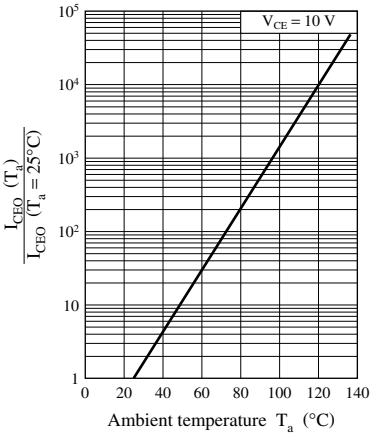
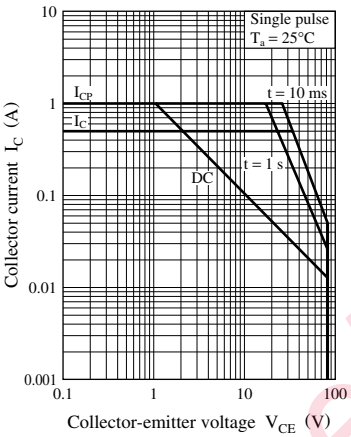
I_{CEO} — T_a



Safe operation area



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