2SC1318

Silicon NPN epitaxial planar type

For low-frequency power amplification and driver amplification
Complementary to 2SA0720

■ Features

- Low collector-emitter saturation voltage $V_{CE(sat)}$
- Complementary pair with 2SA0720

■ Package

- Code
  TO-92B-B1
- Pin Name
  1. Emitter
  2. Collector
  3. Base

■ Absolute Maximum Ratings $T_a = 25°C$

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V_{CBO}	60	V
Collector-emitter voltage (Base open)	V_{CEO}	50	V
Emitter-base voltage (Collector open)	V_{EBO}	7	V
Collector current	I_C	0.5	A
Peak collector current	I_{CP}	1	A
Collector power dissipation	P_C	625	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	–55 to +150	°C

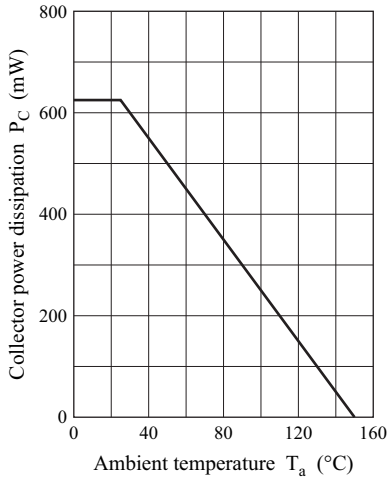
■ Electrical Characteristics $T_a = 25°C \pm 3°C$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	V_{CBO}	$I_C = 10\ \mu A$, $I_E = 0$	60			V
Collector-emitter voltage (Base open)	V_{CEO}	$I_C = 10$ mA, $I_B = 0$	50			V
Emitter-base voltage (Collector open)	V_{EBO}	$I_E = 10\ \mu A$, $I_C = 0$	7			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	85		340	—
	h_{FE2}	$V_{CE} = 10$ V, $I_C = 500$ mA	40			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 300$ mA, $I_B = 30$ mA		0.35	0.60	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 300$ mA, $I_B = 30$ mA		1.1	1.5	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_{re}	$V_{CB} = 10$ V, $I_E = 0$, $f = 1$ MHz		6	15	pF

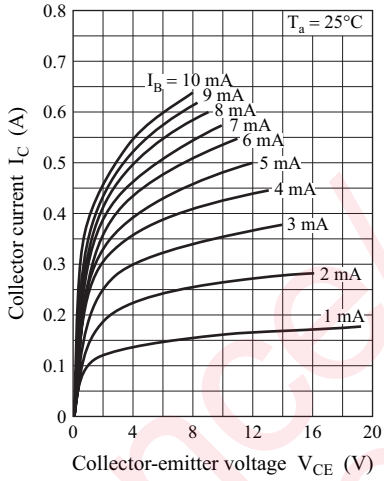
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.
2. *: Rank classification

Rank	Q	R	S
h_{FE1}	85 to 170	120 to 240	170 to 340

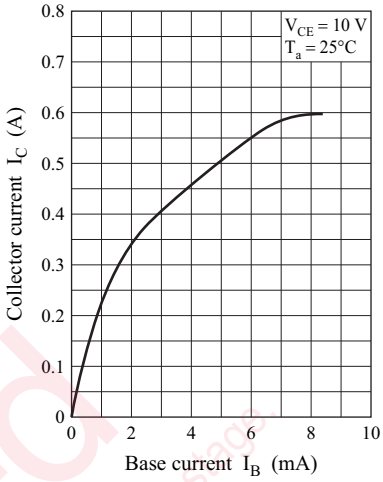
P_C — T_a



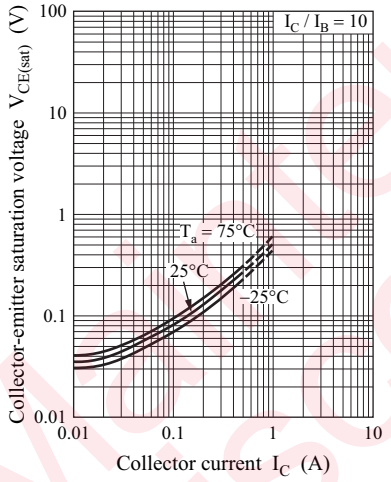
I_C — V_{CE}



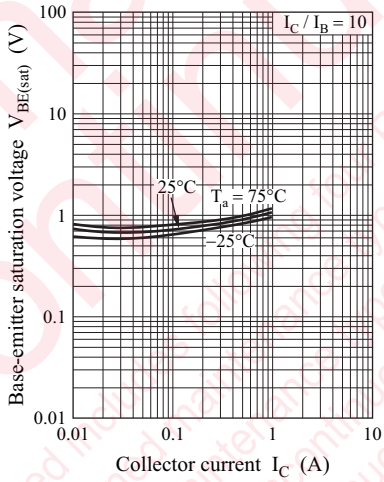
I_C — I_B



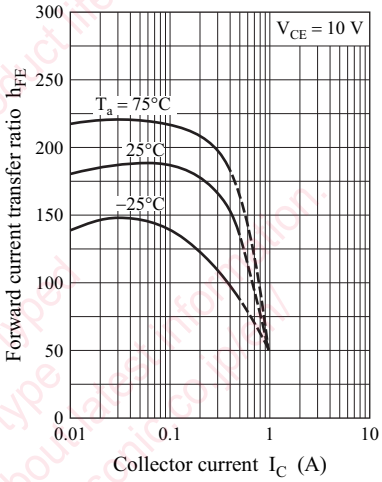
$V_{CE(sat)}$ — I_C



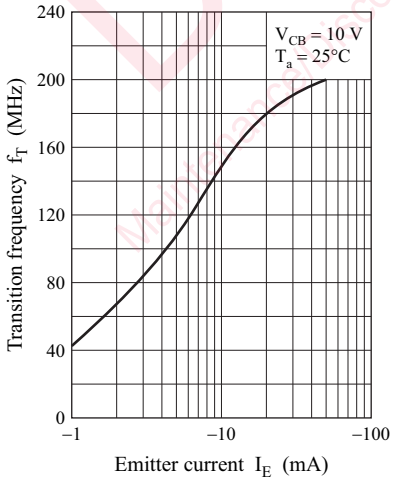
$V_{BE(sat)}$ — I_C



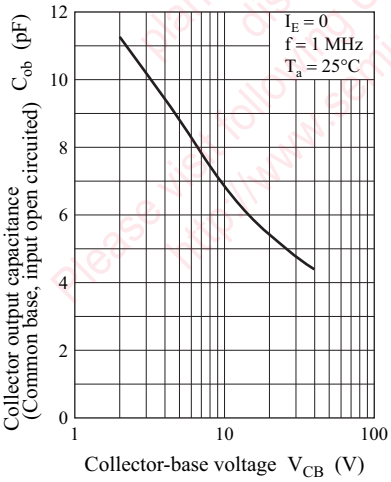
h_{FE} — I_C



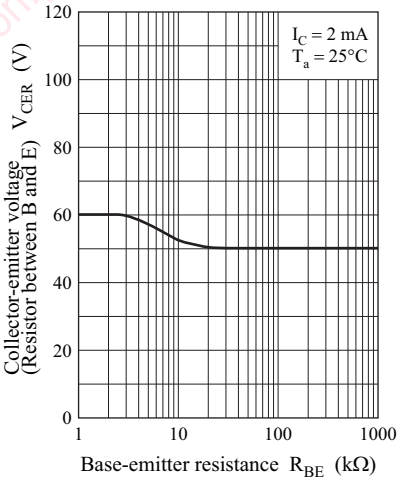
f_T — I_E



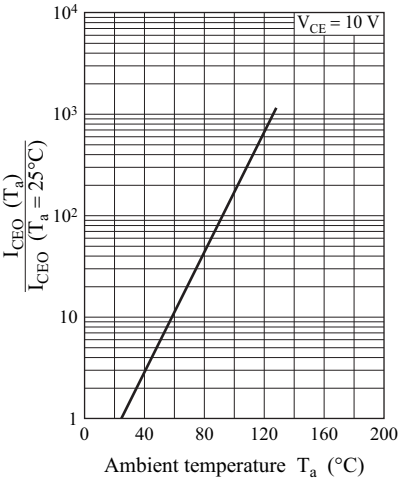
C_{ob} — V_{CB}



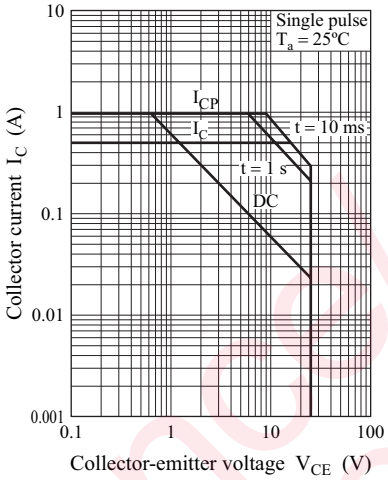
V_{CER} — R_{BE}



I_{CEO} — T_a

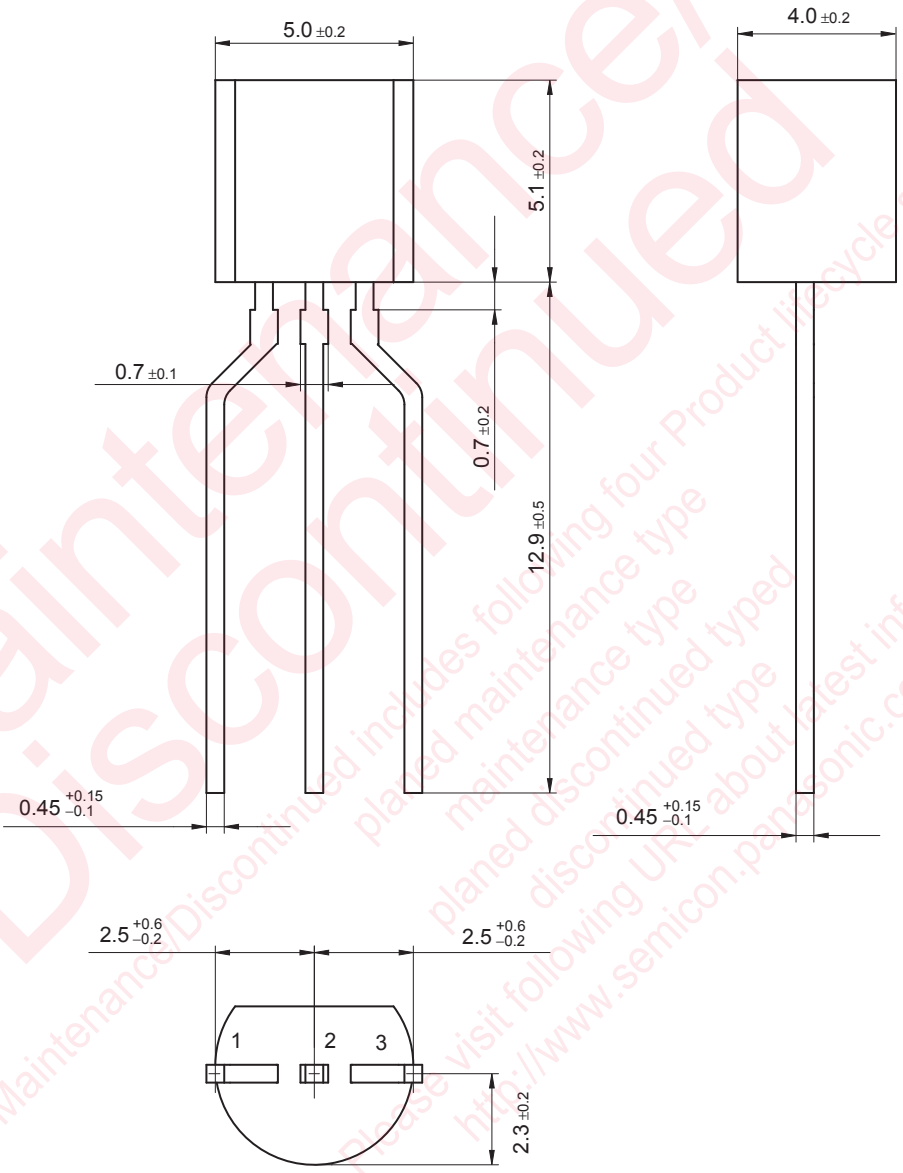


Safe operation area



TO-92-B1

Unit: mm



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