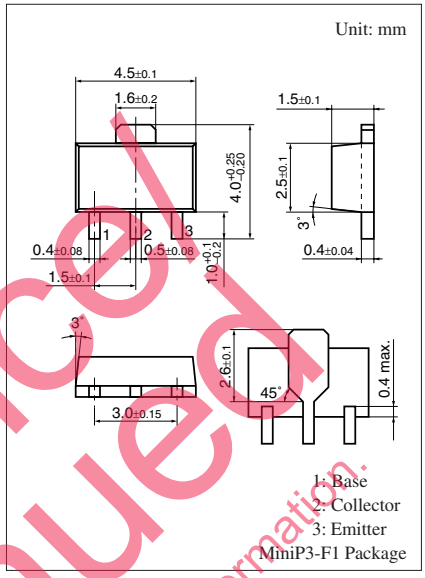
2SB1599

Silicon PNP epitaxial planar type

For power amplification

Complementary to 2SD2457



1: Base
2: Collector
3: Emitter
MiniP3-F1 Package

Marking Symbol: 1X

■ Features

- Low collector-emitter saturation voltage $V_{CE(sat)}$
- Mini Power type package, allowing downsizing of the equipment and automatic insertion through the tape packing and the magazine packing.

■ Absolute Maximum Ratings $T_a = 25°C$

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V_{CBO}	−50	V
Collector-emitter voltage (Base open)	V_{CEO}	−40	V
Emitter-base voltage (Collector open)	V_{EBO}	−5	V
Collector current	I_C	−1.5	A
Peak collector current	I_{CP}	−3	A
Collector power dissipation *	P_C	1	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	−55 to +150	°C

Note) *: Print circuit board: Copper foil area of 1 cm^2 or more, and the board thickness of 1.7 mm for the collector portion

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

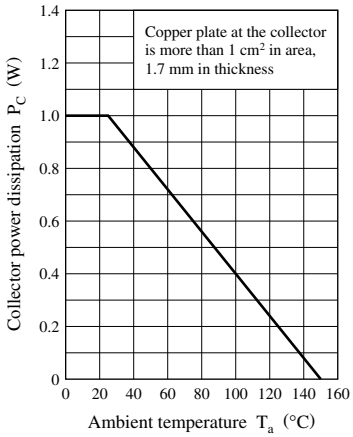
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	V_{CBO}	$I_C = -1$ mA, $I_E = 0$	−50			V
Collector-emitter voltage (Base open)	V_{CEO}	$I_C = -10$ mA, $I_B = 0$	−40			V
Collector-base cutoff current (Emitter open)	I_{CBO}	$V_{CB} = -20$ V, $I_E = 0$			−1	μA
Collector-emitter cutoff current (Base open)	I_{CEO}	$V_{CE} = -12$ V, $I_B = 0$			−100	μA
Emitter-base cutoff current (Collector open)	I_{EBO}	$V_{EB} = -5$ V, $I_C = 0$			−100	μA
Forward current transfer ratio *	h_{FE}	$V_{CE} = -5$ V, $I_C = -1$ A	80		220	—
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -1.5$ A, $I_B = -0.15$ A		− 0.4	−1.0	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = -2$ A, $I_B = -0.2$ A			−1.5	V
Transition frequency	f_T	$V_{CB} = -5$ V, $I_E = 0.5$ A, f = 200 MHz		150		MHz
Collector output capacitance (Common base, input open circuited)	C_{ob}	$V_{CB} = -5$ V, $I_E = 0$, f = 1 MHz		70		pF

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

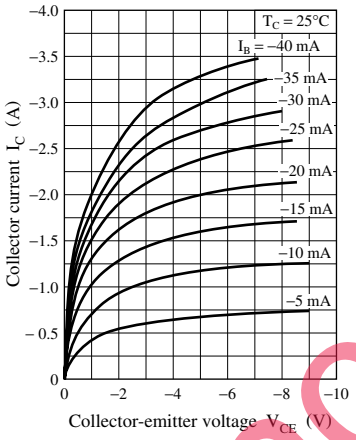
2. *: Rank classification

Rank	Q	R
h_{FE}	80 to 160	100 to 220

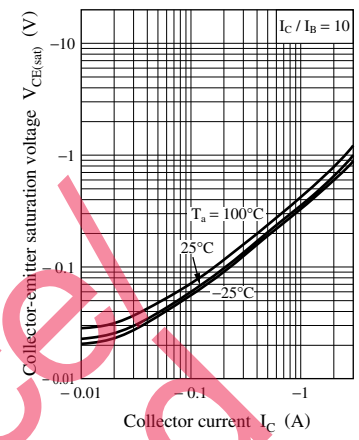
P_C — T_a



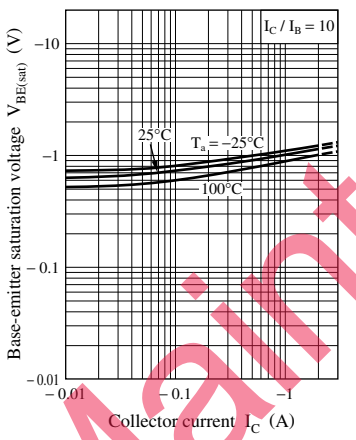
I_C — V_{CE}



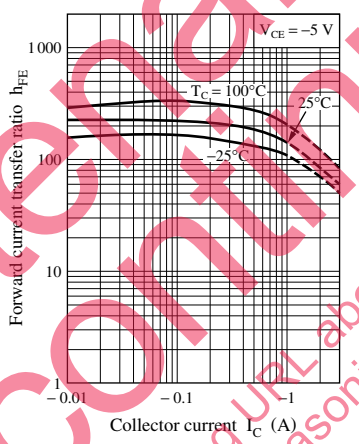
$V_{CE(sat)}$ — I_C



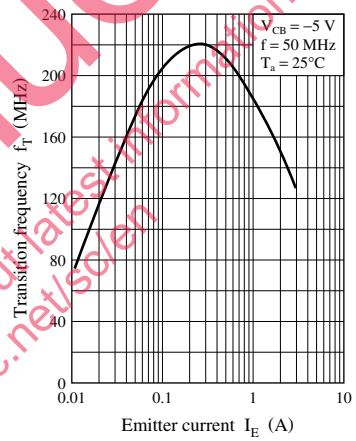
$V_{BE(sat)}$ — I_C



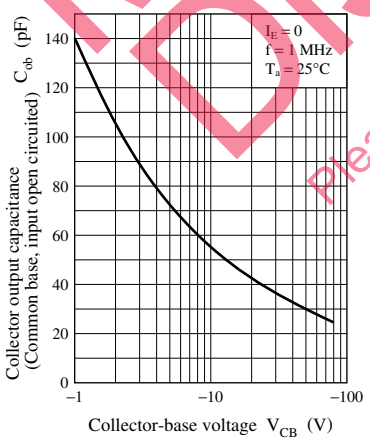
h_{FE} — I_C



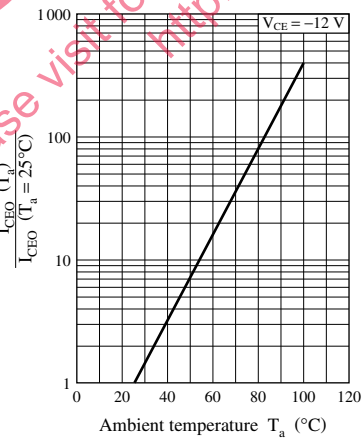
f_T — I_E



C_{ob} — V_{CB}



I_{CEO} — T_a



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