

2SA1022

Silicon PNP epitaxial planer type

For high-frequency amplification

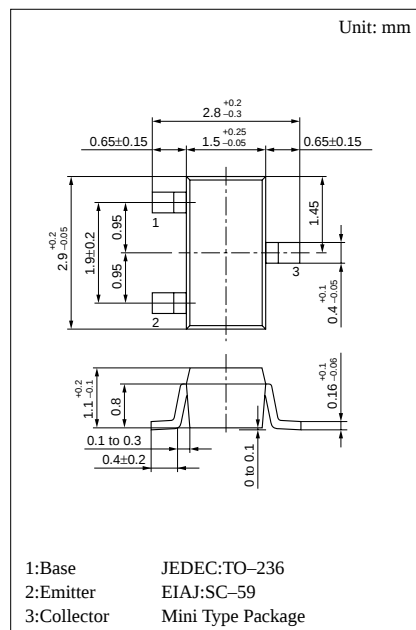
Complementary to 2SC2295

Features

- High transition frequency f_T .
- Mini type package, allowing downsizing of the equipment and automatic insertion through the tape packing and the magazine packing.

Absolute Maximum Ratings ($T_a=25^\circ\text{C}$)

Parameter	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	-30	V
Collector to emitter voltage	V_{CEO}	-20	V
Emitter to base voltage	V_{EBO}	-5	V
Collector current	I_C	-30	mA
Collector power dissipation	P_C	200	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 ~ +150	$^\circ\text{C}$



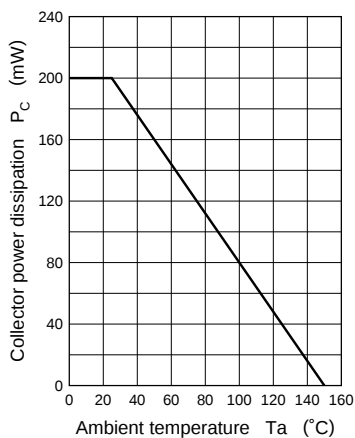
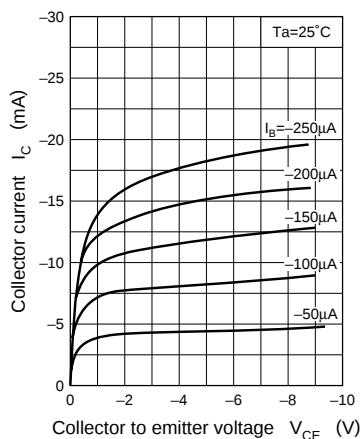
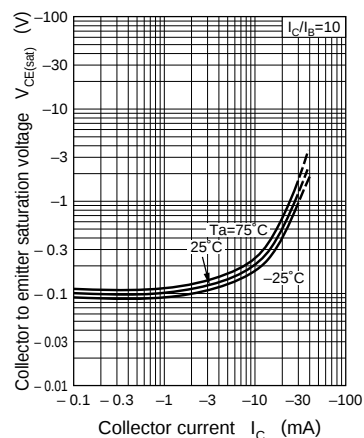
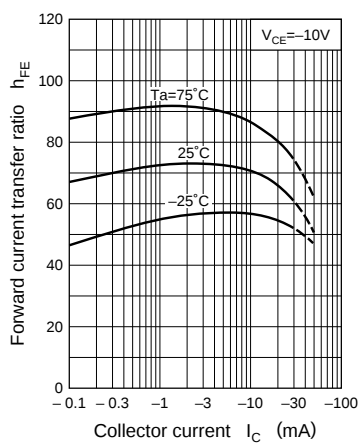
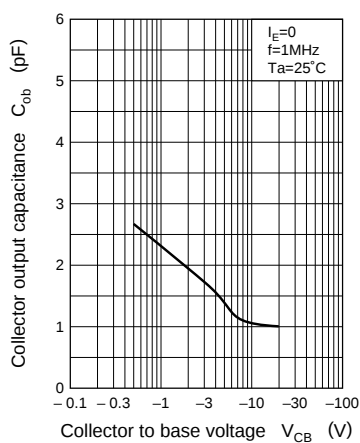
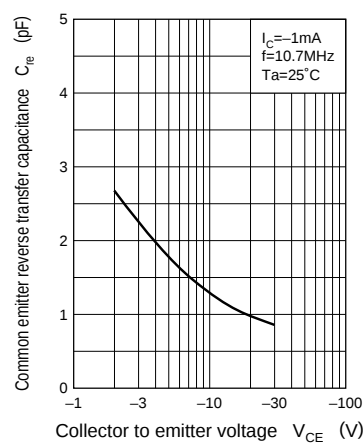
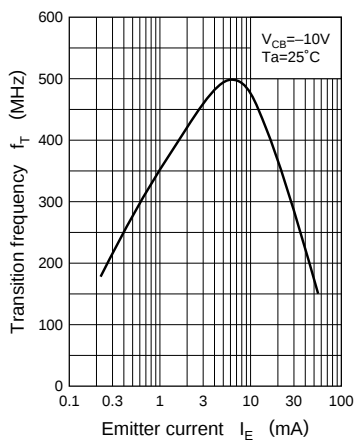
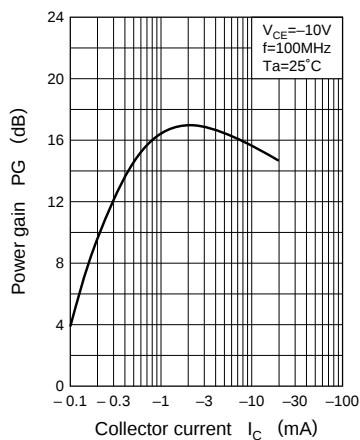
Marking symbol : E

Electrical Characteristics ($T_a=25^\circ\text{C}$)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = -10\text{V}, I_E = 0$			- 0.1	μA
	I_{CEO}	$V_{CE} = -20\text{V}, I_B = 0$			-100	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = -5\text{V}, I_C = 0$			-10	μA
Forward current transfer ratio	h_{FE}^*	$V_{CE} = -10\text{V}, I_C = -1\text{mA}$	70		220	
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = -10\text{mA}, I_B = -1\text{mA}$		- 0.1		V
Base to emitter voltage	V_{BE}	$V_{CE} = -10\text{V}, I_C = -1\text{mA}$		- 0.7		V
Transition frequency	f_T	$V_{CB} = -10\text{V}, I_E = 1\text{mA}, f = 200\text{MHz}$	150	300		MHz
Noise figure	NF	$V_{CB} = -10\text{V}, I_E = 1\text{mA}, f = 5\text{MHz}$		2.8		dB
Reverse transfer impedance	Z_{rb}	$V_{CB} = -10\text{V}, I_E = 1\text{mA}, f = 2\text{MHz}$		22		Ω
Common emitter reverse transfer capacitance	C_{re}	$V_{CE} = -10\text{V}, I_C = -1\text{mA}$ $f = 10.7\text{MHz}$		1.2		pF

* h_{FE} Rank classification

Rank	B	C
h_{FE}	70 ~ 140	110 ~ 220
Marking Symbol	EB	EC

$P_C - T_a$  $I_C - V_{CE}$  $V_{CE(sat)} - I_C$  $h_{FE} - I_C$  $C_{ob} - V_{CB}$  $C_{re} - V_{CE}$  $f_T - I_E$  $PG - I_C$  $NF - I_E$ 