2SA1022

Silicon PNP epitaxial planer type

For high-frequency amplification
Complementary to 2SC2295

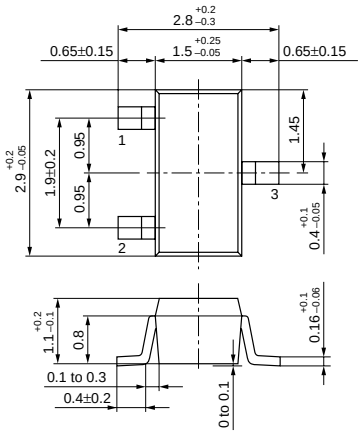
■ Features

- 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 (Ta=25˚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	˚C
Storage temperature	T_{stg}	–55 ~ +150	˚C

Unit: mm



1:Base
2:Emitter
3:Collector

JEDEC:TO–236
EIAJ:SC–59
Mini Type Package

Marking symbol : E

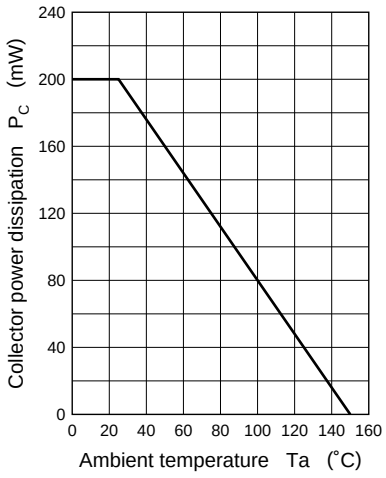
■ Electrical Characteristics (Ta=25˚C)

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

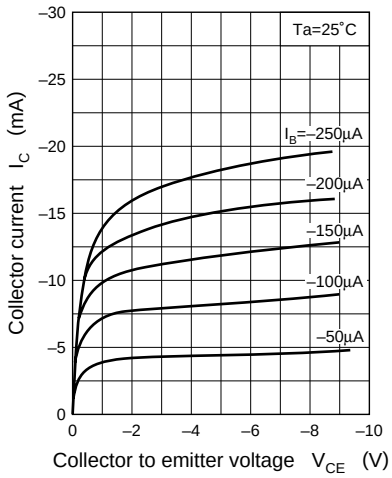
*h_{FE} Rank classification

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

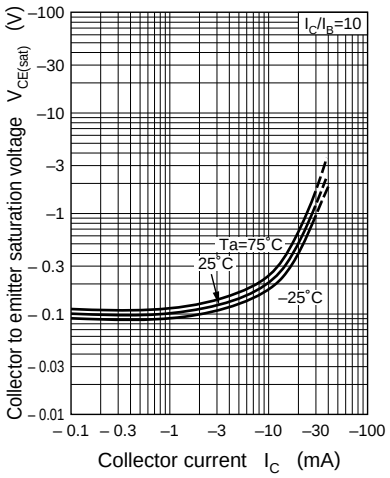
P_C — Ta



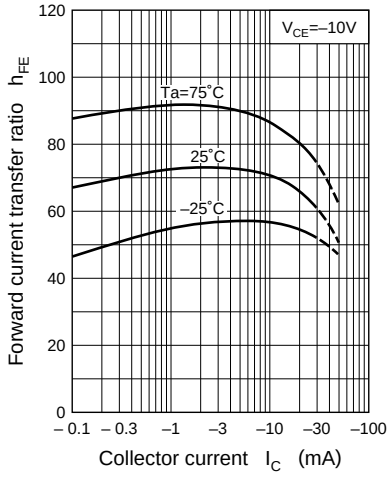
I_C — V_{CE}



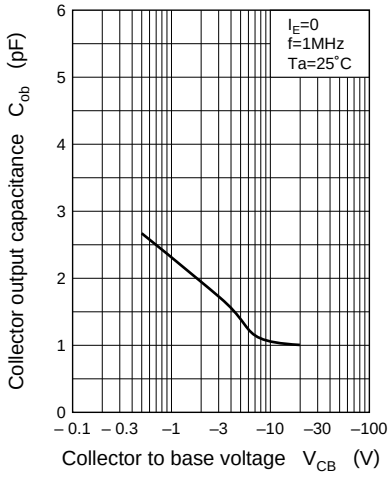
$V_{CE(sat)}$ — I_C



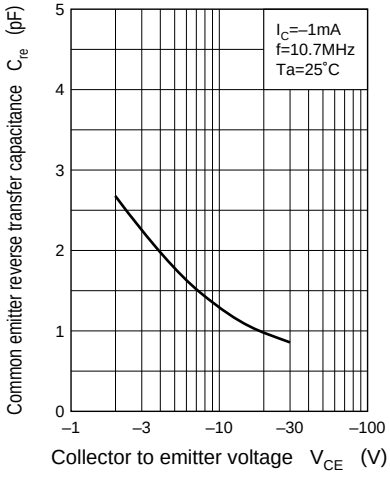
h_{FE} — I_C



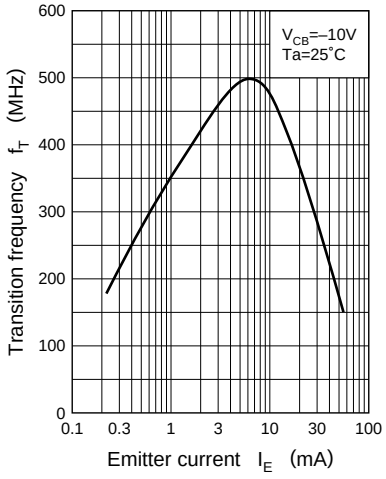
C_{ob} — V_{CB}



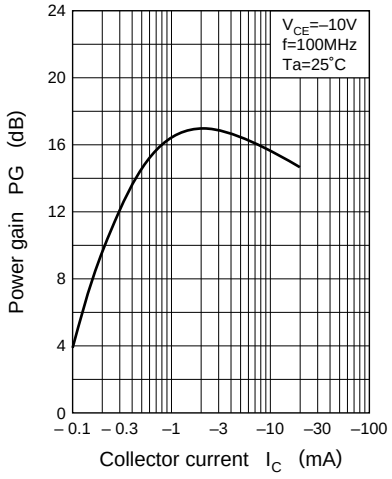
C_{re} — V_{CE}



f_T — I_E



PG — I_C



NF — I_E