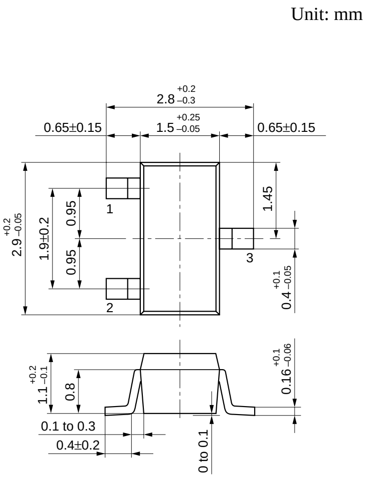
2SD1304

Silicon NPN epitaxial planer type

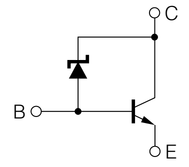
For low-frequency amplification



1:Base JEDEC:TO–236
2:Emitter EIAJ:SC–59
3:Collector Mini Type Package

Marking symbol : 2A

Internal Connection



■ Features

- Zener diode built in.
- 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}	20±3	V
Collector to emitter voltage	V_{CEO}	20±3	V
Emitter to base voltage	V_{EBO}	7	V
Peak collector current	I_{CP}	200	mA
Collector current	I_C	100	mA
Collector power dissipation	P_C	200	mW
Junction temperature	T_j	150	˚C
Storage temperature	T_{stg}	–55 ~ +150	˚C

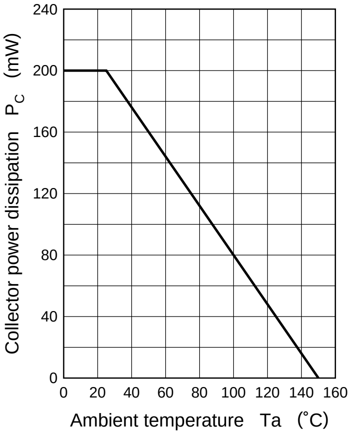
■ Electrical Characteristics (Ta=25˚C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I_{CBO}	V_{CB} = 10V, I_E = 0			0.1	µA
Collector to emitter voltage	V_{CEO}	I_C = 1mA, I_B = 0	17		23	V
Emitter to base voltage	V_{EBO}	I_E = 10µA, I_C = 0	7			V
Forward current transfer ratio	h_{FE1}*	V_{CE} = 10V, I_C = 2mA	160		460	
	h_{FE2}	V_{CE} = 2V, I_C = 100mA	90			
Collector to emitter saturation voltage	$V_{CE(sat)}$	I_C = 100mA, I_B = 10mA			0.5	V
Transition frequency	f_T	V_{CB} = 10V, I_E = –2mA, f = 200MHz		150		MHz

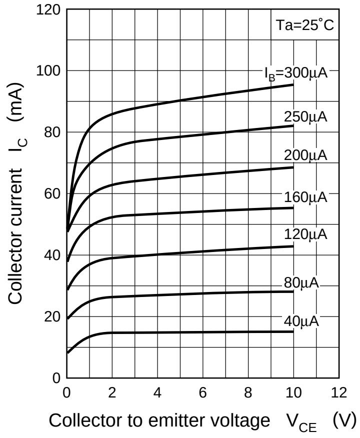
*h_{FE1} Rank classification

Rank	Q	R	S
h_{FE1}	160 ~ 260	210 ~ 340	290 ~ 460
Marking Symbol	2AQ	2AR	2AS

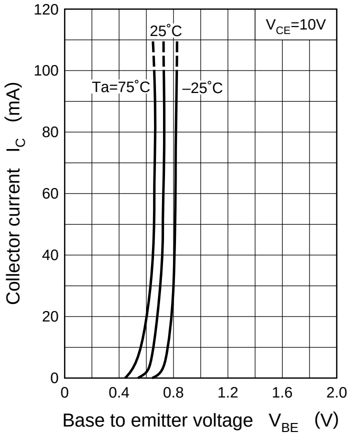
P_C — Ta



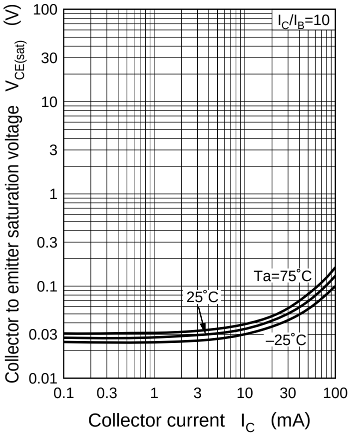
I_C — V_{CE}



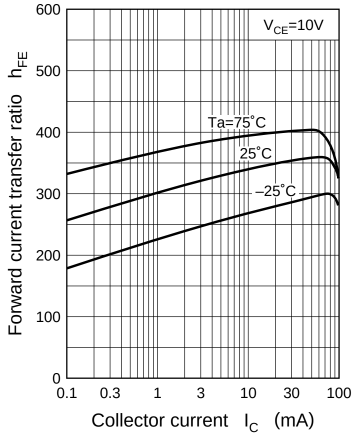
I_C — V_{BE}



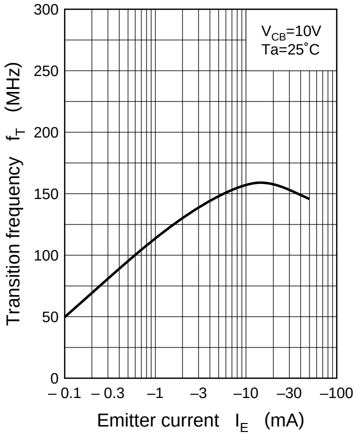
$V_{CE(sat)}$ — I_C



h_{FE} — I_C



f_T — I_E



C_{ob} — V_{CB}