2SD814, 2SD814A

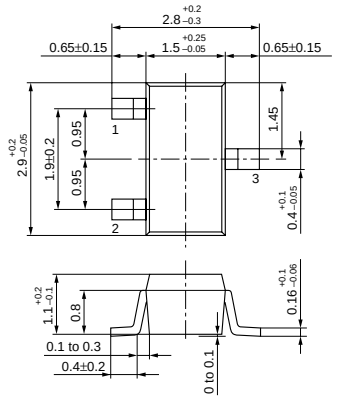
Silicon NPN epitaxial planer type

For high breakdown voltage low-frequency and low-noise amplification

Features

- High collector to emitter voltage V_{CEO}.
- Low noise voltage NV.
- Mini type package, allowing downsizing of the equipment and automatic insertion through the tape packing and the magazine packing.

Unit: mm



1:Base
2:Emitter
3:Collector

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

Marking symbol : P(2SD814)
L(2SD814A)

Absolute Maximum Ratings (Ta=25˚C)

Parameter		Symbol	Ratings	Unit
Collector to base voltage	2SD814	V_{CBO}	150	V
	2SD814A		185	
Collector to emitter voltage	2SD814	V_{CEO}	150	V
	2SD814A		185	
Emitter to base voltage		V_{EBO}	5	V
Peak collector current		I_{CP}	100	mA
Collector current		I_C	50	mA
Collector power dissipation		P_C	200	mW
Junction temperature		T_j	150	˚C
Storage temperature		T_{stg}	–55 ~ +150	˚C

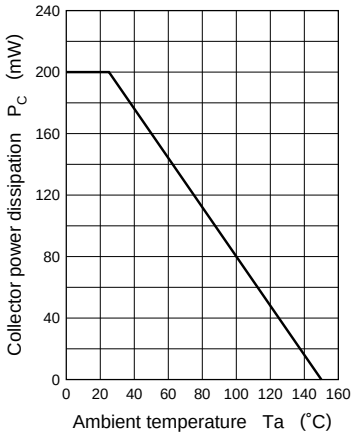
Electrical Characteristics (Ta=25˚C)

Parameter		Symbol	Conditions	min	typ	max	Unit
Collector cutoff current		I_{CBO}	V_{CB} = 100V, I_E = 0			1	μA
Collector to emitter voltage	2SD814	V_{CEO}	I_C = 100μA, I_B = 0	150			V
	2SD814A			185			
Emitter to base voltage		V_{EBO}	I_E = 10μA, I_C = 0	5			V
Forward current transfer ratio		h_{FE}*	V_{CE} = 5V, I_C = 10mA	90		330	
Collector to emitter saturation voltage		$V_{CE(sat)}$	I_C = 30mA, I_B = 3mA			1	V
Transition frequency		f_T	V_{CB} = 10V, I_E = –10mA, f = 200MHz		150		MHz
Collector output capacitance		C_{ob}	V_{CB} = 10V, I_E = 0, f = 1MHz		2.3		pF
Noise voltage		NV	V_{CE} = 10V, I_C = 1mA, G_V = 80dB R_g = 100kΩ, Function = FLAT		150		mV

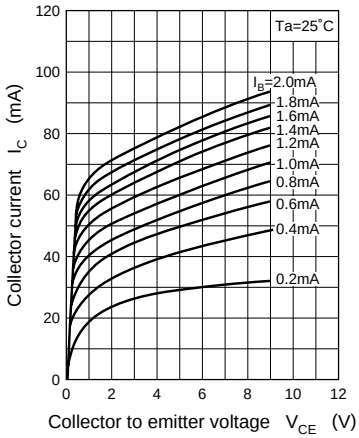
*h_{FE} Rank classification

Rank		Q	R	S
h_{FE}		90 ~ 155	130 ~ 220	185 ~ 330
Marking Symbol	2SD814	PQ	PR	PS
	2SD814A	LQ	LR	LS

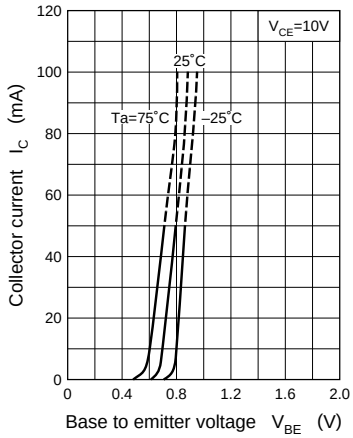
P_C — Ta



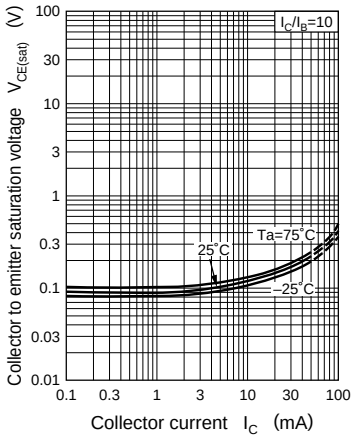
I_C — V_{CE}



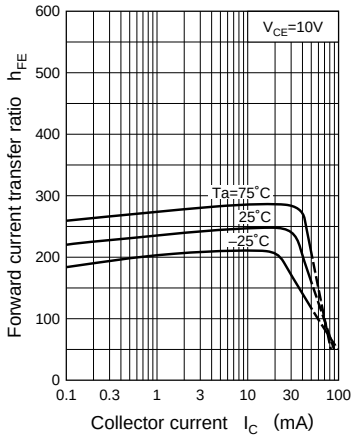
I_C — V_{BE}



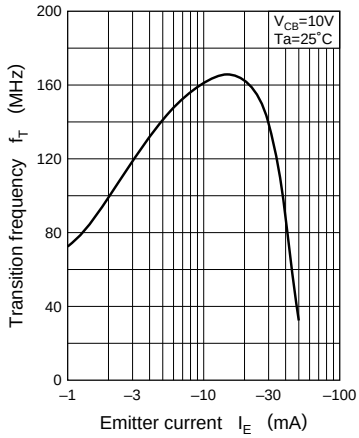
$V_{CE(sat)}$ — I_C



h_{FE} — I_C



f_T — I_E



C_{ob} — V_{CB}