

# XP1507

## Silicon NPN epitaxial planer transistor

High breakdown voltage and for low noise amplification

### ■ Features

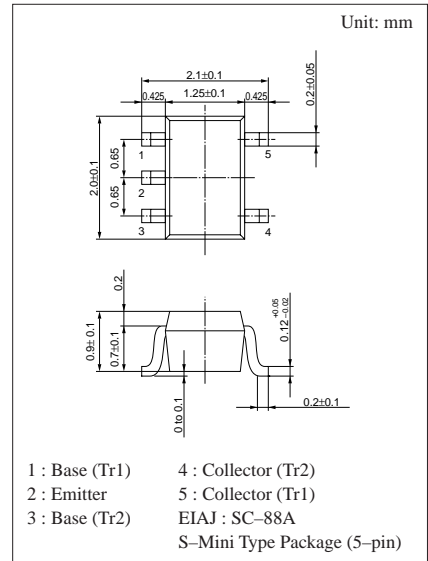
- Two elements incorporated into one package.  
(Emitter-coupled transistors)
- Reduction of the mounting area and assembly cost by one half.

### ■ Basic Part Number of Element

- 2SD814 × 2 elements

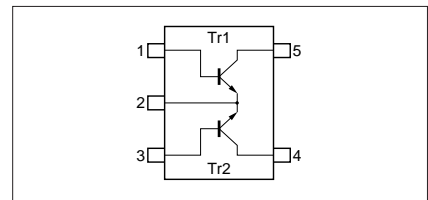
### ■ Absolute Maximum Ratings (Ta=25°C)

	Parameter	Symbol	Rated	Unit
Rating of element	Collector to base voltage	$V_{CBO}$	150	V
	Collector to emitter voltage	$V_{CEO}$	150	V
	Emitter to base voltage	$V_{EBO}$	5	V
	Collector current	$I_C$	50	mA
	Peak collector current	$I_{CP}$	100	mA
Overall	Total power dissipation	$P_T$	150	mW
	Junction temperature	$T_j$	150	°C
	Storage temperature	$T_{sig}$	-55 to +150	°C



Marking Symbol: 40

Internal Connection



### ■ Electrical Characteristics (Ta=25°C)

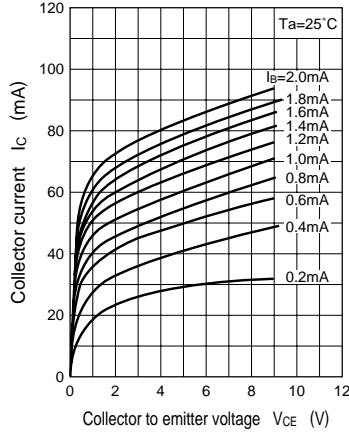
Parameter	Symbol	Conditions	min	typ	max	Unit
Collector to emitter voltage	$V_{CEO}$	$I_C = 100\mu A, I_B = 0$	150			V
Emitter to base voltage	$V_{EBO}$	$I_E = 10\mu A, I_C = 0$	5			V
Collector cutoff current	$I_{CBO}$	$V_{CB} = 100V, I_E = 0$			1	$\mu A$
Forward current transfer ratio	$h_{FE}$	$V_{CE} = 5V, I_C = 10mA$	90		450	
Forward current transfer $h_{FE}$ ratio	$h_{FE}(\text{small/large})^{*1}$	$V_{CE} = 5V, I_C = 10mA$	0.5	0.99		
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

\*1 Ratio between 2 elements

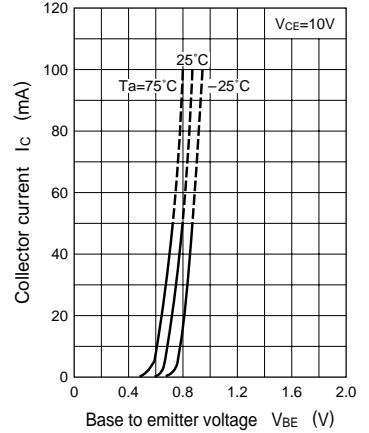
$P_T - T_a$



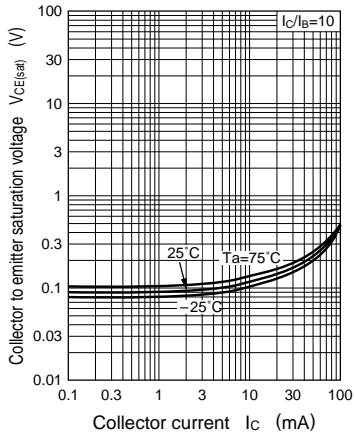
$I_C - V_{CE}$



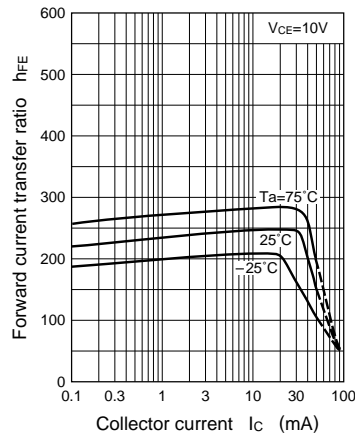
$I_C - V_{BE}$



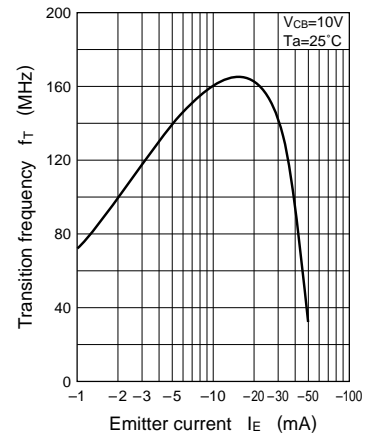
$V_{CE(sat)} - I_C$



$h_{FE} - I_C$



$f_T - I_E$



$C_{ob} - V_{CB}$

