

# XP1504

## Silicon NPN epitaxial planer transistor

For amplification of low frequency output

### ■ Features

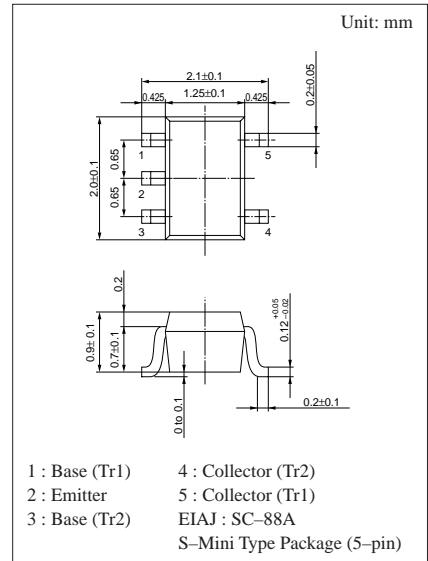
- Two elements incorporated into one package.  
(Emitter-coupled transistors)
- Reduction of the mounting area and assembly cost by one half.

### ■ Basic Part Number of Element

- 2SD1938 × 2 elements

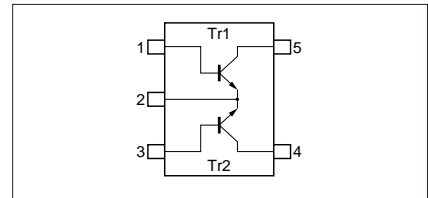
### ■ Absolute Maximum Ratings (Ta=25°C)

	Parameter	Symbol	Ratings	Unit
Rating of element	Collector to base voltage	$V_{CBO}$	50	V
	Collector to emitter voltage	$V_{CEO}$	20	V
	Emitter to base voltage	$V_{EBO}$	25	V
	Collector current	$I_C$	300	mA
	Peak collector current	$I_{CP}$	500	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: **5S**

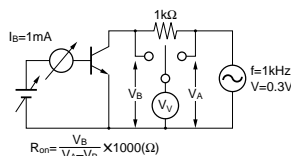
Internal Connection



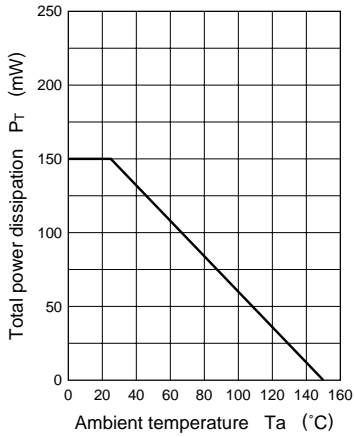
### ■ Electrical Characteristics (Ta=25°C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector to emitter voltage	$V_{CEO}$	$I_C = 1\text{mA}, I_B = 0$	20			V
Collector cutoff current	$I_{CBO}$	$V_{CB} = 50\text{V}, I_E = 0$			0.1	$\mu\text{A}$
Emitter cutoff current	$I_{EBO}$	$V_{EB} = 25\text{V}, I_C = 0$			0.1	$\mu\text{A}$
Forward current transfer ratio	$h_{FE}$	$V_{CE} = 2\text{V}, I_C = 4\text{mA}$	500		2500	
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 30\text{mA}, I_B = 3\text{mA}$			0.1	V
Base to emitter voltage	$V_{BE}$	$V_{CE} = 2\text{V}, I_C = 4\text{mA}$		0.6		V
Transition frequency	$f_T$	$V_{CB} = 6\text{V}, I_E = -4\text{mA}, f = 200\text{MHz}$		80		MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$			7	pF
ON Resistance	$R_{on}^{*1}$			1.0		$\Omega$

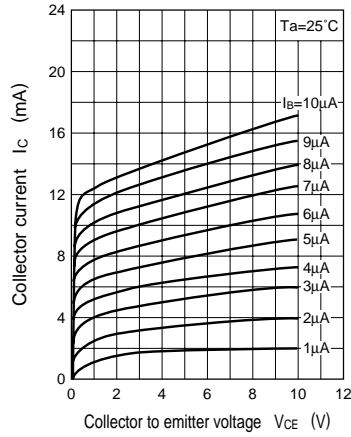
\*1  $R_{on}$  measuring circuit



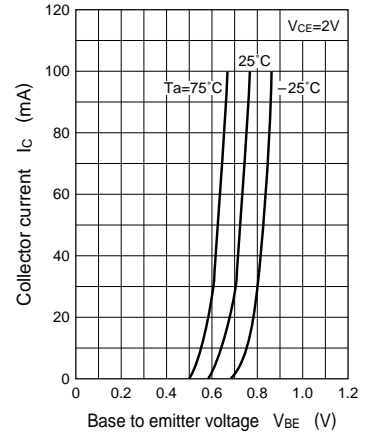
$P_T - T_a$



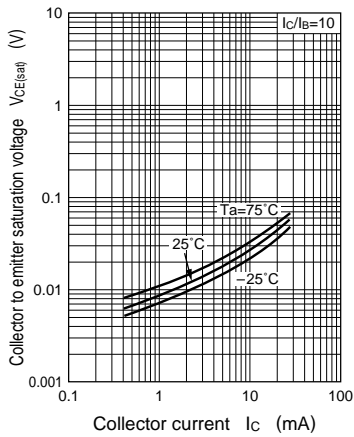
$I_C - V_{CE}$



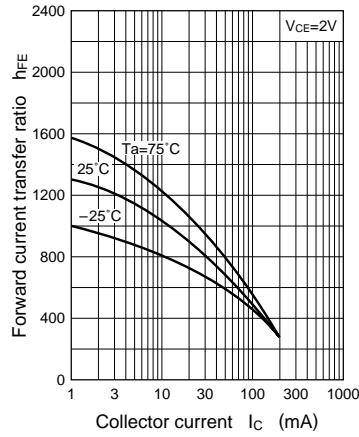
$I_C - V_{BE}$



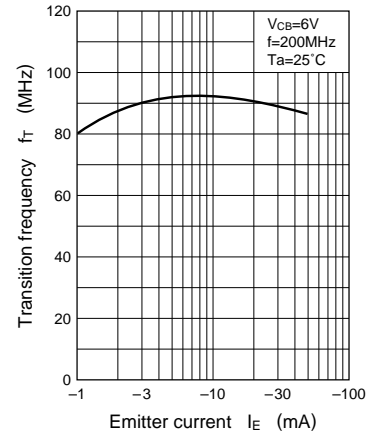
$V_{CE(sat)} - I_C$



$h_{FE} - I_C$



$f_T - I_E$



$C_{ob} - V_{CB}$

