

XN1504

Silicon NPN epitaxial planer transistor

For amplification of low frequency output

■ Features

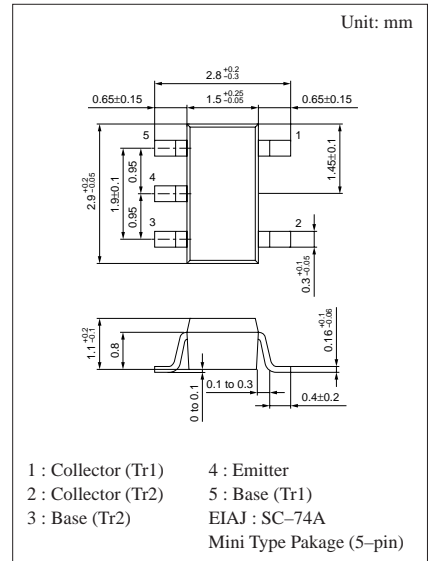
- Two elements incorporated into one package. (Emitter-coupled transistors)
- Reduction of the mounting area and assembly cost by one half.

■ Basic Part Number of Element

- 2SD1938 × 2 elements

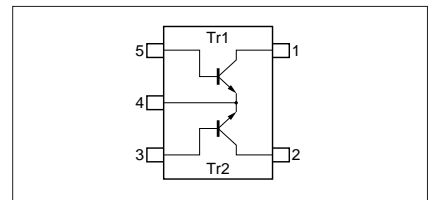
■ Absolute Maximum Ratings (Ta=25°C)

	Parameter	Symbol	Rated	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	300	mW
	Junction temperature	T_j	150	°C
	Storage temperature	T_{sig}	-55 to +150	°C



Marking Symbol: 5S

Internal Connection

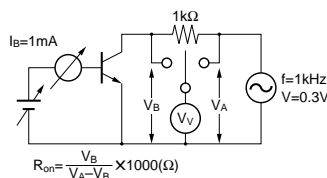


■ Electrical Characteristics (Ta=25°C)

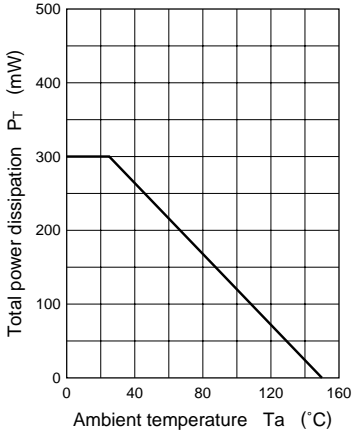
Parameter	Symbol	Conditions	min	typ	max	Unit
Collector to emitter voltage	V_{CEO}	$I_C = 1\text{mA}, I_B = 0$	20			V
Collector cutoff current	I_{CBO}	$V_{CB} = 50\text{V}, I_E = 0$			0.1	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = 25\text{V}, I_C = 0$			0.1	μA
Forward current transfer ratio	h_{FE}	$V_{CE} = 2\text{V}, I_C = 4\text{mA}$	500		2500	
Forward current transfer h_{FE} ratio	$h_{FE}(\text{small/large})^{*1}$	$V_{CE} = 2\text{V}, I_C = 4\text{mA}$	0.5	0.99		
Collector to emitter saturation voltage	$V_{CE(\text{sat})}$	$I_C = 30\text{mA}, I_B = 3\text{mA}$			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}^{*2}			1.0		Ω

*1 Ratio between 2 elements

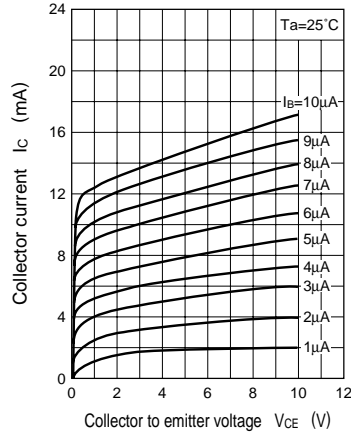
*2 R_{on} test circuit



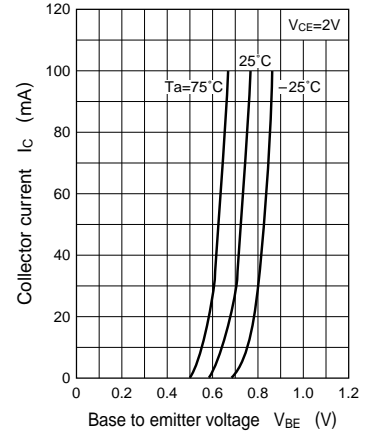
$P_T - T_a$



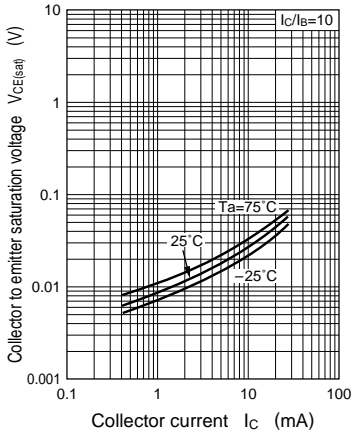
$I_C - V_{CE}$



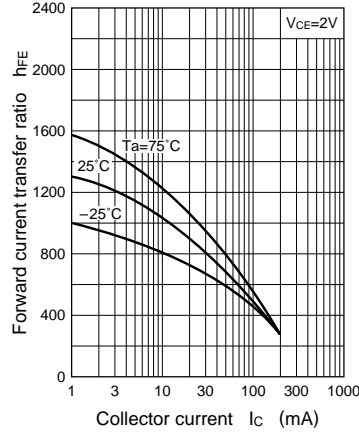
$I_C - V_{BE}$



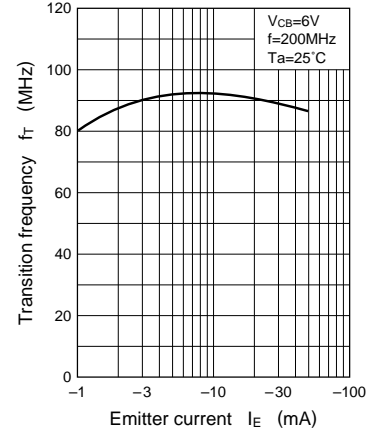
$V_{CE(sat)} - I_C$



$h_{FE} - I_C$



$f_T - I_E$



$C_{ob} - V_{CB}$

