

Composite Transistors

# XN1501

## Silicon NPN epitaxial planer transistor

For general amplification

### Features

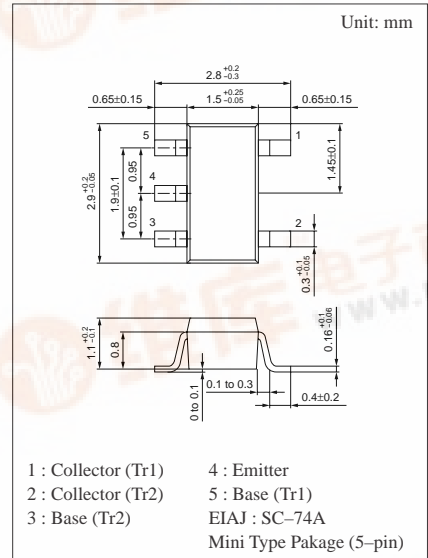
- Two elements incorporated into one package.  
(Emitter-coupled transistors)
- Reduction of the mounting area and assembly cost by one half.

### Basic Part Number of Element

- 2SD601A × 2 elements

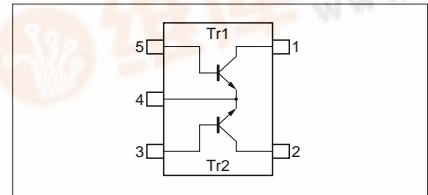
### Absolute Maximum Ratings (Ta=25°C)

	Parameter	Symbol	Ratings	Unit
Rating of element	Collector to base voltage	$V_{CBO}$	60	V
	Collector to emitter voltage	$V_{CEO}$	50	V
	Emitter to base voltage	$V_{EBO}$	7	V
	Collector current	$I_C$	100	mA
	Peak collector current	$I_{CP}$	200	mA
Overall	Total power dissipation	$P_T$	300	mW
	Junction temperature	$T_j$	150	°C
	Storage temperature	$T_{stg}$	-55 to +150	°C



Marking Symbol: 5R

Internal Connection



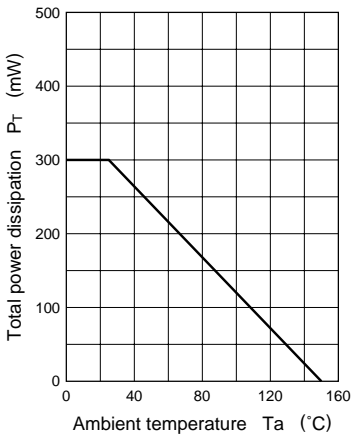
### Electrical Characteristics (Ta=25°C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector to base voltage	$V_{CBO}$	$I_C = 10\mu A, I_E = 0$	60			V
Collector to emitter voltage	$V_{CEO}$	$I_C = 2mA, I_B = 0$	50			V
Emitter to base voltage	$V_{EBO}$	$I_E = 10\mu A, I_C = 0$	7			V
Collector cutoff current	$I_{CBO}$	$V_{CB} = 20V, I_E = 0$			0.1	$\mu A$
	$I_{CEO}$	$V_{CE} = 10V, I_B = 0$			100	$\mu A$
Forward current transfer ratio	$h_{FE}$	$V_{CE} = 10V, I_C = 2mA$	160		460	
Forward current transfer $h_{FE}$ ratio	$h_{FE} (small/large)^{*1}$	$V_{CE} = 10V, I_C = 2mA$	0.5	0.99		
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 100mA, I_B = 10mA$		0.1	0.3	V
Transition frequency	$f_T$	$V_{CB} = 10V, I_E = -2mA, f = 200MHz$		150		MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = 10V, I_E = 0, f = 1MHz$		3.5		pF

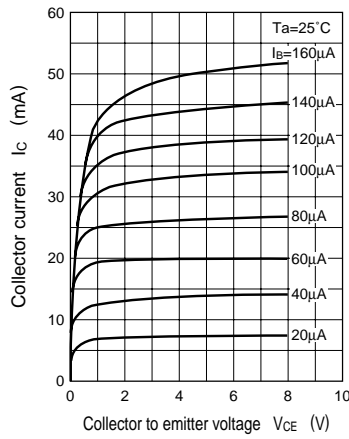
\*1 Ratio between 2 elements



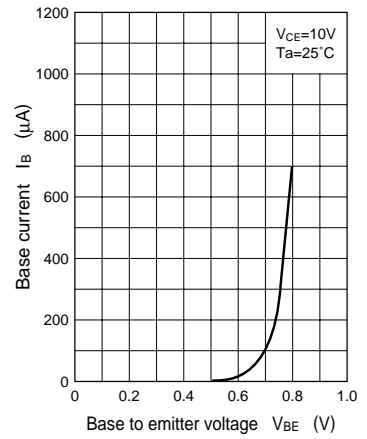
$P_T - T_a$



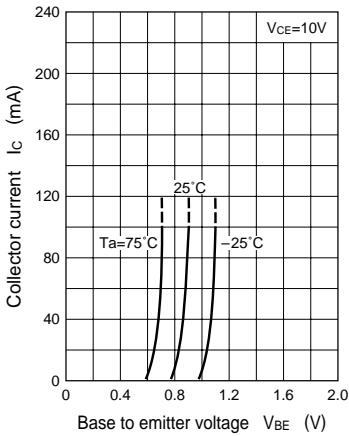
$I_C - V_{CE}$



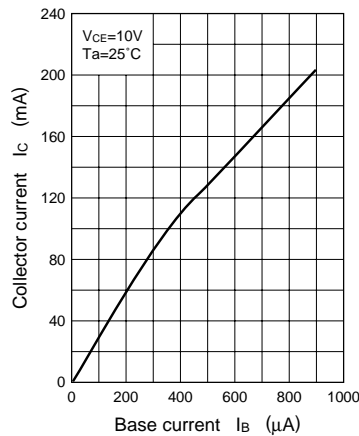
$I_B - V_{BE}$



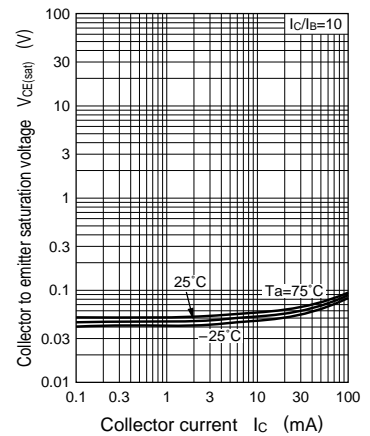
$I_C - V_{BE}$



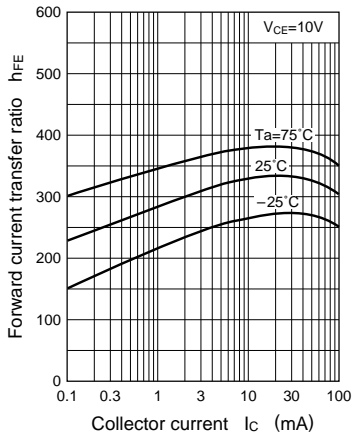
$I_C - I_B$



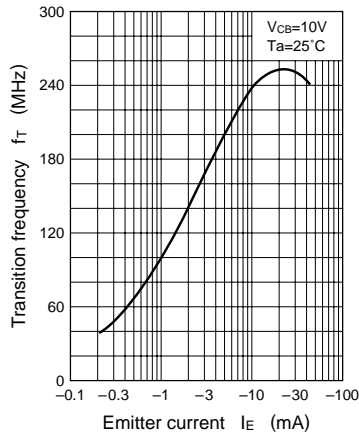
$V_{CE(sat)} - I_C$



$h_{FE} - I_C$



$f_T - I_E$



$NV - I_C$

