

XN1216

Silicon NPN epitaxial planer transistor

For switching/digital circuits

Features

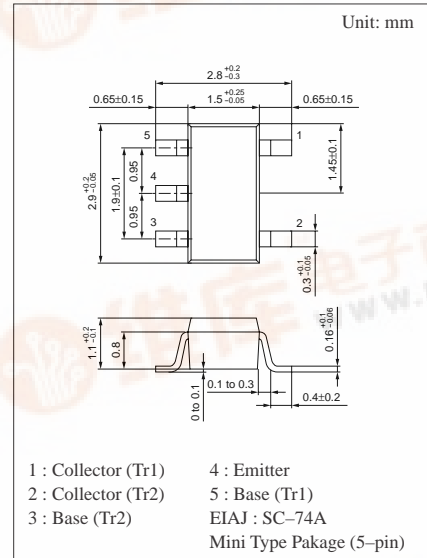
- Two elements incorporated into one package.
(Emitter-coupled transistors with built-in resistor)
- Reduction of the mounting area and assembly cost by one half.

Basic Part Number of Element

- UN1216 × 2 elements

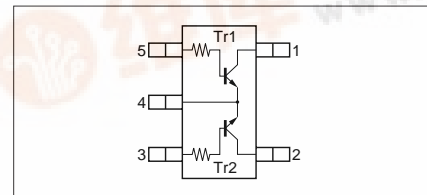
Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Rating of element	Collector to base voltage	V _{CBO}	50 V
	Collector to emitter voltage	V _{CEO}	50 V
	Collector current	I _C	100 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: 9N

Internal Connection



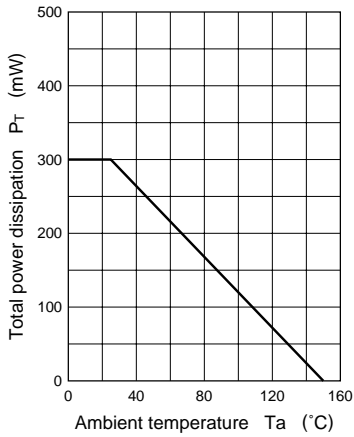
Electrical Characteristics (Ta=25°C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector to base voltage	V _{CBO}	I _C = 10μA, I _E = 0	50			V
Collector to emitter voltage	V _{CEO}	I _C = 2mA, I _B = 0	50			V
Collector cutoff current	I _{CBO}	V _{CB} = 50V, I _E = 0			0.1	μA
	I _{CEO}	V _{CE} = 50V, I _B = 0			0.5	μA
Emitter cutoff current	I _{EBO}	V _{EB} = 6V, I _C = 0			0.01	mA
Forward current transfer ratio	h _{FE}	V _{CE} = 10V, I _C = 5mA	160		460	
Forward current transfer h _{FE} ratio	h _{FE} (small/large)*1	V _{CE} = 10V, I _C = 5mA	0.5	0.99		
Collector to emitter saturation voltage	V _{CE(sat)}	I _C = 10mA, I _B = 0.3mA			0.25	V
Output voltage high level	V _{OH}	V _{CC} = 5V, V _B = 0.5V, R _L = 1kΩ	4.9			V
Output voltage low level	V _{OL}	V _{CC} = 5V, V _B = 2.5V, R _L = 1kΩ			0.2	V
Transition frequency	f _T	V _{CB} = 10V, I _E = -2mA, f = 200MHz		150		MHz
Input resistance	R _i		-30%	4.7	+30%	kΩ

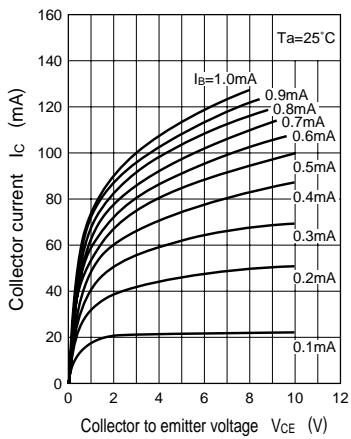
*1 Ratio between 2 elements



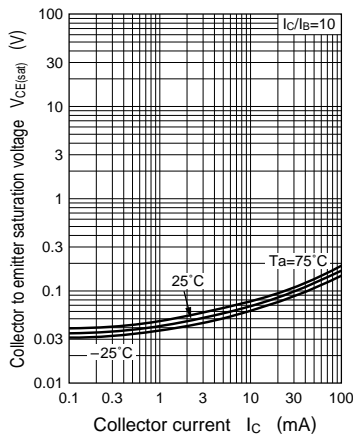
$P_T - T_a$



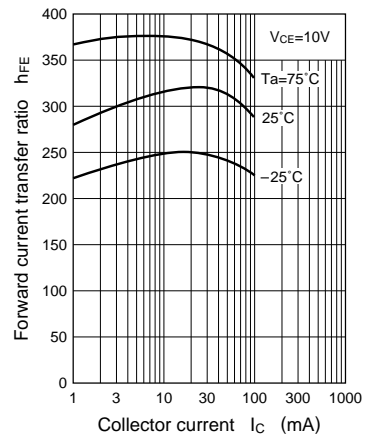
$I_C - V_{CE}$



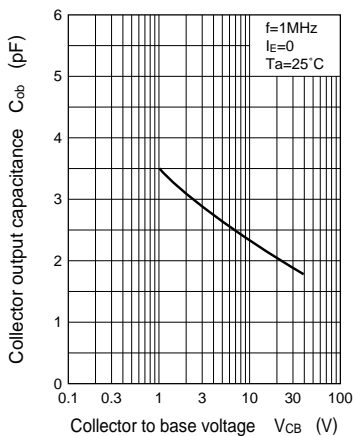
$V_{CE(sat)} - I_C$



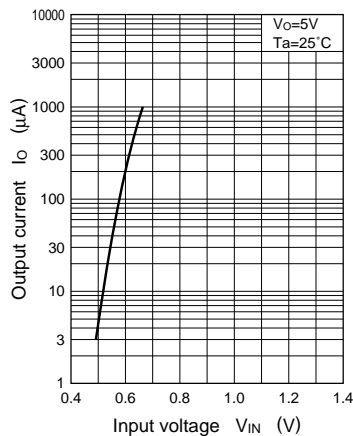
$h_{FE} - I_C$



$C_{ob} - V_{CB}$



$I_O - V_{IN}$



$V_{IN} - I_O$

