XN04314 (XN4314)

Silicon NPN epitaxial planer transistor (Tr1) Silicon PNP epitaxial planer transistor (Tr2)

For switching/digital circuits

Features

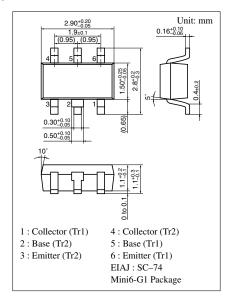
- Two elements incorporated into one package. (Transistors with built-in resistor)
- Reduction of the mounting area and assembly cost by one half.

Basic Part Number of Element

• UNR1214(UN1214) + UNR1114(UN1114)

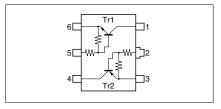
Absolute Maximum Ratings (Ta=25°C)

Parameter		Symbol	Ratings	Unit	
Tr1	Collector to base voltage	V_{CBO}	50	V	
	Collector to emitter voltage	V_{CEO}	50	V	
	Collector current	I_{C}	100	mA	
Tr2	Collector to base voltage	V_{CBO}	-50	V	
	Collector to emitter voltage	V_{CEO}	-50	V	
	Collector current	I_C	-100	mA	
	Total power dissipation	P_{T}	300	mW	
Overall	Junction temperature	T_{j}	150	°C	
	Storage temperature	T_{stg}	-55 to +150	°C	



Marking Symbol: CA

Internal Connection



■ Electrical Characteristics (Ta=25°C)

• Tr1

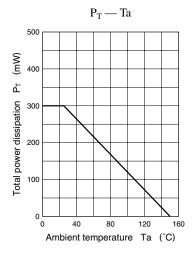
Parameter	Symbol	Conditions	min	typ	max	Unit
Collector to base voltage	V _{CBO}	$I_{\rm C} = 10 \mu A, I_{\rm E} = 0$	50			V
Collector to emitter voltage	V _{CEO}	$I_C = 2mA, I_B = 0$	50			V
C 11 4 6 6	I_{CBO}	$V_{CB} = 50V, I_E = 0$			0.1	μA
Collector cutoff current	I_{CEO}	$V_{CE} = 50V, I_B = 0$			0.5	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = 6V, I_C = 0$			0.2	mA
Forward current transfer ratio	h _{FE}	$V_{CE} = 10V, I_C = 5mA$	80			
Collector to emitter saturation voltage	V _{CE(sat)}	$I_{\rm C} = 10 \text{mA}, I_{\rm B} = 0.3 \text{mA}$		0.09	0.25	V
Output voltage high level	V _{OH}	$V_{CC} = 5V, V_B = 0.5V, R_L = 1k\Omega$	4.9			V
Output voltage low level	V _{OL}	$V_{CC} = 5V, V_B = 2.5V, R_L = 1k\Omega$			0.2	V
Input resistance	R ₁		-30%	10	+30%	kΩ
Resistance ratio	R ₁ /R ₂		0.17	0.21	0.25	
Transition frequency	f_T	$V_{CB} = 10V, I_E = -1mA, f = 200MHz$		150		MHz

• Tr2

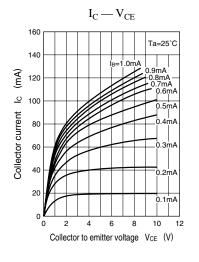
Parameter	Symbol	Conditions	min	typ	max	Unit
Collector to base voltage	V _{CBO}	$I_{\rm C} = -10\mu A, I_{\rm E} = 0$	-50			V
Collector to emitter voltage	V _{CEO}	$I_C = -2mA, I_B = 0$	-50			V
Collector cutoff current	I_{CBO}	$V_{CB} = -50V, I_{E} = 0$			- 0.1	μΑ
Collector cutoff current	I _{CEO}	$V_{CE} = -50V, I_B = 0$			- 0.5	μΑ
Emitter cutoff current	I _{EBO}	$V_{EB} = -6V, I_C = 0$			- 0.2	mA
Forward current transfer ratio	h _{FE}	$V_{CE} = -10V, I_{C} = -5mA$	80			
Collector to emitter saturation voltage	V _{CE(sat)}	$I_C = -10 \text{mA}, I_B = -0.3 \text{mA}$			- 0.25	V
Output voltage high level	V _{OH}	$V_{CC} = -5V, V_B = -0.5V, R_L = 1k\Omega$	-4.9			V
Output voltage low level	V _{OL}	$V_{CC} = -5V, V_B = -2.5V, R_L = 1k\Omega$			- 0.2	V
Input resistance	R ₁		-30%	10	+30%	kΩ
Resistance ratio	R ₁ /R ₂		0.17	0.21	0.25	
Transition frequency	f_T	$V_{CB} = -10V, I_E = 1 \text{mA}, f = 200 \text{MHz}$		80		MHz

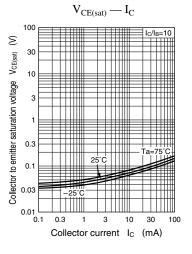
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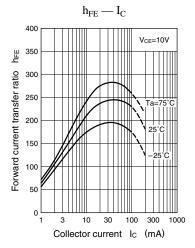
Common characteristics chart

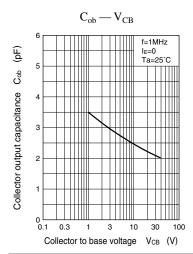


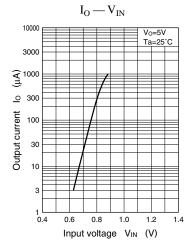
Characteristics charts of Tr1

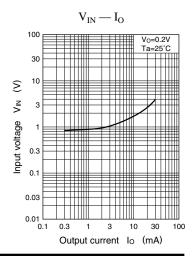




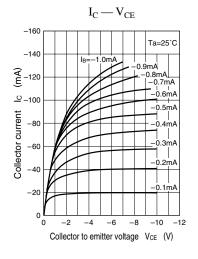


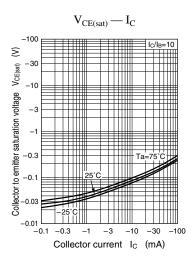


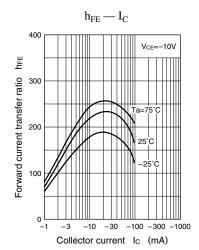


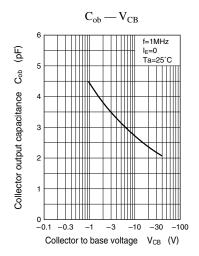


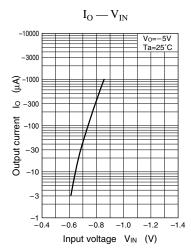
Characteristics charts of Tr2

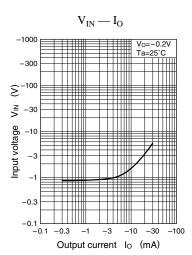












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