XN04315 (XN4315)

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

For switching/digital circuits

Features

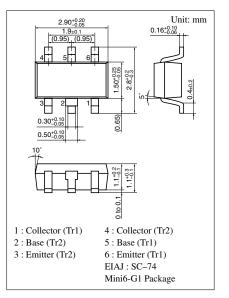
- Two elements incorporated into one package. (Transistors with built-in resistor)
- Reduction of the mounting area and assembly cost by one half.

Basic Part Number of Element

• UNR1215(UN1215) + UNR1115(UN1115)

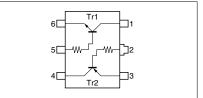
Parameter		Symbol	Ratings	Unit	
Tr1	Collector to base voltage	V _{CBO}	50	V	
	Collector to emitter voltage	V _{CEO}	50	V	
	Collector current	I _C	100	mA	
Tr2	Collector to base voltage	V _{CBO}	-50	V	
	Collector to emitter voltage	V _{CEO}	-50	V	
	Collector current	I _C	-100	mA	
Overall	Total power dissipation	P _T	300	mW	
	Junction temperature	Tj	150	°C	
	Storage temperature	T _{stg}	-55 to +150	°C	

Absolute Maximum Ratings (Ta=25°C)



Marking Symbol: CB

Internal Connection



Note) The Part number in the Parenthesis shows conventional part number.

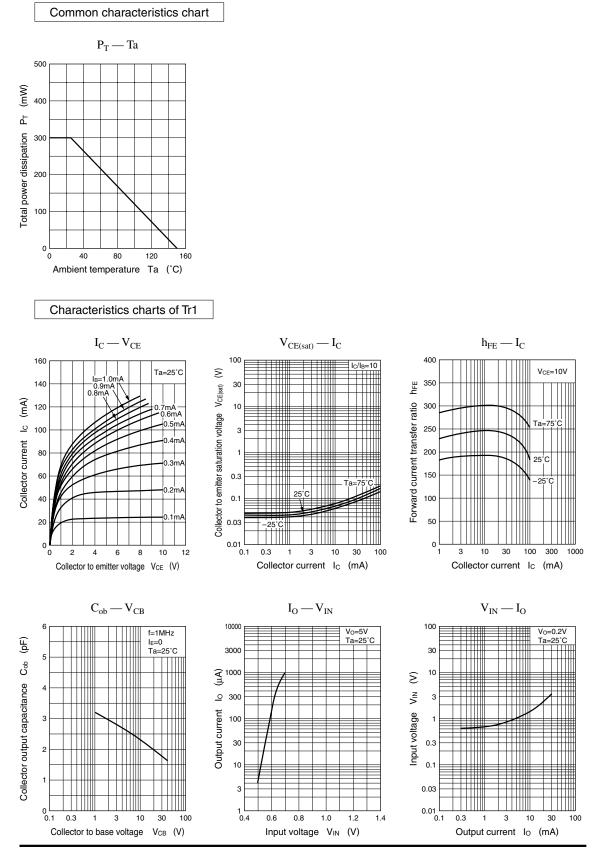
Electrical Characteristics (Ta=25°C)

• Tr1

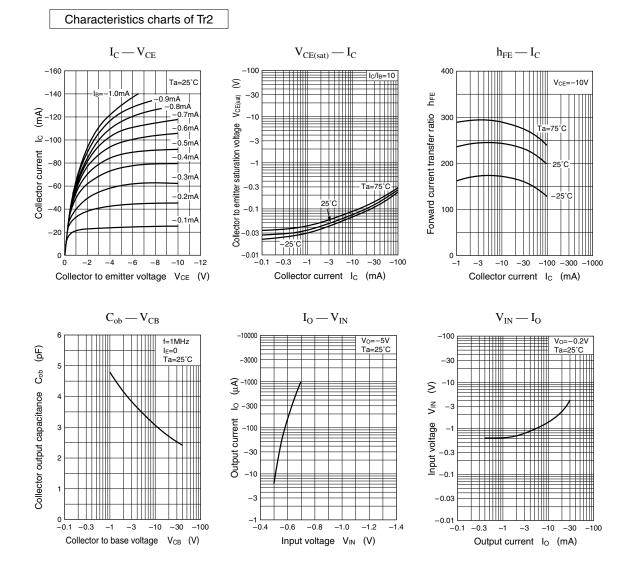
Parameter	Symbol	Conditions	min	typ	max	Unit
Collector to base voltage	V _{CBO}	$I_{\rm C} = 10 \mu A, I_{\rm E} = 0$	50			V
Collector to emitter voltage	V _{CEO}	$I_{\rm C} = 2mA, I_{\rm B} = 0$	50			V
	I _{CBO}	$V_{CB} = 50V, I_E = 0$			0.1	μΑ
Collector cutoff current	I _{CEO}	$V_{CE} = 50V, I_B = 0$			0.5	μΑ
Emitter cutoff current	I _{EBO}	$V_{EB} = 6V, I_C = 0$			0.01	mA
Forward current transfer ratio	h _{FE}	$V_{CE} = 10V, I_C = 5mA$	160		460	
Collector to emitter saturation voltage	V _{CE(sat)}	$I_{\rm C} = 10 {\rm mA}, I_{\rm B} = 0.3 {\rm mA}$			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
Transition frequency	f _T	$V_{CB} = 10V, I_E = -2mA, f = 200MHz$		150		MHz
Input resistance	R ₁		-30%	10	+30%	kΩ

• 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}	$I_{\rm C} = -2mA, I_{\rm B} = 0$	-50			V
Collector cutoff current	I _{CBO}	$V_{CB} = -50V, I_E = 0$			- 0.1	μΑ
	I _{CEO}	$V_{CE} = -50V, I_B = 0$			- 0.5	μΑ
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	
Collector to emitter saturation voltage	V _{CE(sat)}	$I_{\rm C} = -10 {\rm mA}, I_{\rm B} = -0.3 {\rm mA}$			- 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
Transition frequency	f _T	$V_{CB} = -10V, I_E = 1mA, f = 200MHz$		80		MHz
Input resistance	R ₁		-30%	10	+30%	kΩ



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