

UNR412x Series

Silicon PNP epitaxial planar type

For digital circuits

■ Features

- Costs can be reduced through downsizing of the equipment and reduction of the number of parts.
- New S type package, allowing supply with the radial taping

■ Resistance by Part Number

	(R ₁)	(R ₂)
• UNR4121	2.2 kΩ	2.2 kΩ
• UNR4122	4.7 kΩ	4.7 kΩ
• UNR4123	10 kΩ	10 kΩ
• UNR4124	2.2 kΩ	10 kΩ

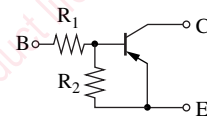
■ Absolute Maximum Ratings T_a = 25°C

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V _{CB0}	-50	V
Collector-emitter voltage (Base open)	V _{CEO}	-50	V
Collector current	I _C	-500	mA
Total power dissipation	P _T	300	mW
Junction temperature	T _j	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

■ Package

- Code
NS-A1
- Pin Name
1: Emitter
2: Collector
3: Base

■ Internal Connection



■ Electrical Characteristics T_a = 25°C ± 3°C

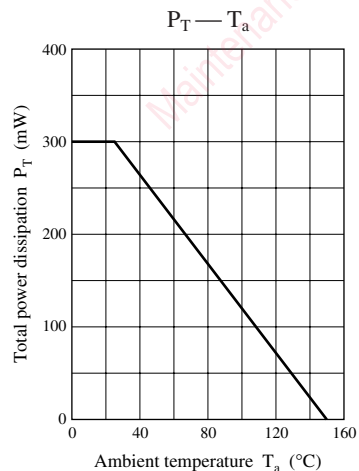
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	V _{CB0}	I _C = -10 μA, I _E = 0	-50			V
Collector-emitter voltage (Base open)	V _{CEO}	I _C = -2 mA, I _B = 0	-50			V
Collector-base cutoff current (Emitter open)	I _{CB0}	V _{CB} = -50 V, I _E = 0			-1	μA
Collector-emitter cutoff current (Base open)	I _{CEO}	V _{CE} = -50 V, I _B = 0			-1	μA
Emitter-base cutoff current (Collector open)	UNR4121	V _{EB} = -6 V, I _C = 0			-5	mA
	UNR4122			-2		
	UNR4123/4124				-1	

■ Electrical Characteristics (continued) $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

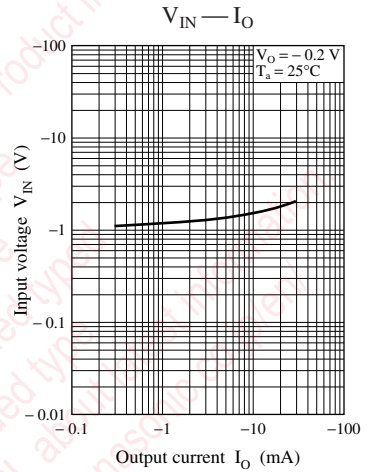
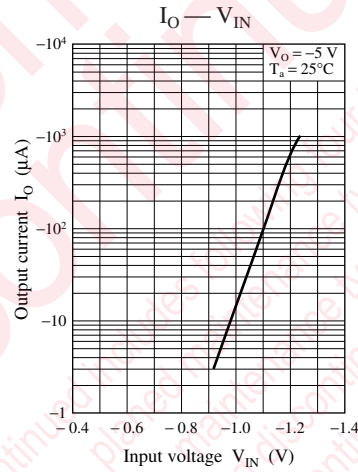
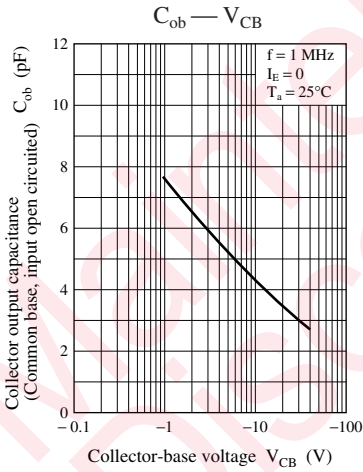
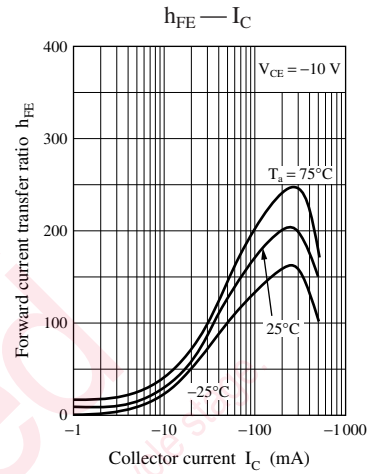
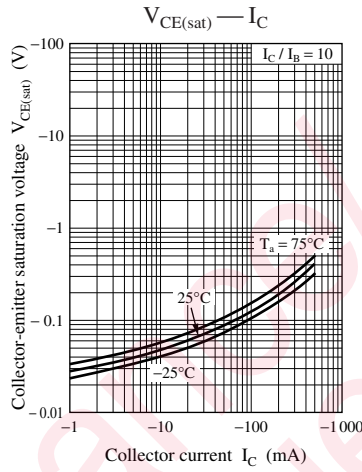
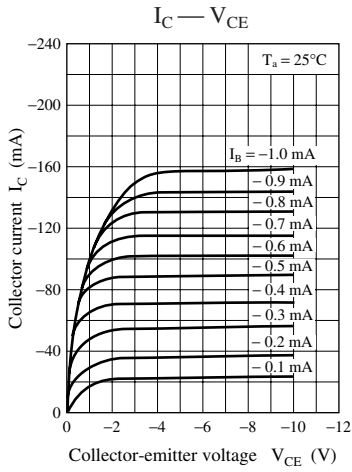
Parameter		Symbol	Conditions	Min	Typ	Max	Unit
Forward current transfer ratio	UNR4121	h_{FE}	$V_{CE} = -10\text{ V}, I_C = -100\text{ mA}$	40			—
	UNR4122			50			
	UNR4123/4124			60			
Collector-emitter saturation voltage		$V_{CE(sat)}$	$I_C = -100\text{ mA}, I_B = -5\text{ mA}$			-0.25	V
Output voltage high-level		V_{OH}	$V_{CC} = -5\text{ V}, V_B = -0.5\text{ V}, R_L = 500\ \Omega$	-4.9			V
Output voltage low-level		V_{OL}	$V_{CC} = -5\text{ V}, V_B = -3.5\text{ V}, R_L = 500\ \Omega$			-0.2	V
Transition frequency		f_T	$V_{CB} = -10\text{ V}, I_E = 50\text{ mA}, f = 200\text{ MHz}$		200		MHz
Input resistance	UNR4121/4124	R_1		-30%	2.2	+30%	k Ω
	UNR4122				4.7		
	UNR4123				10		
Resistance ratio		R_1/R_2		0.8	1.0	1.2	—
	UNR4124			0.17	0.22	0.27	

Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

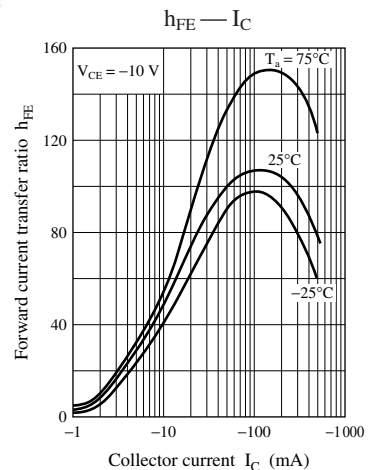
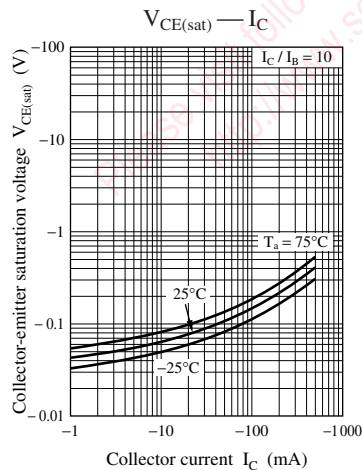
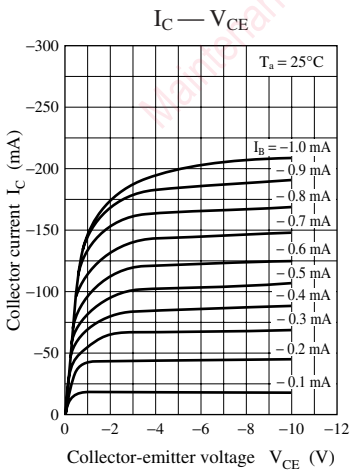
Common characteristics chart

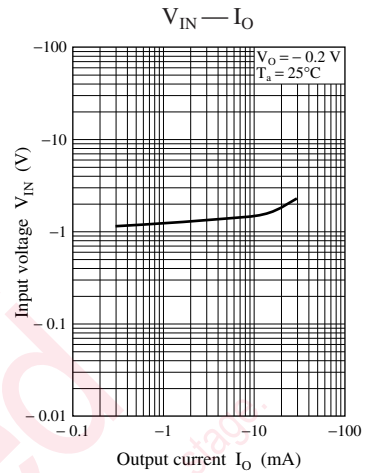
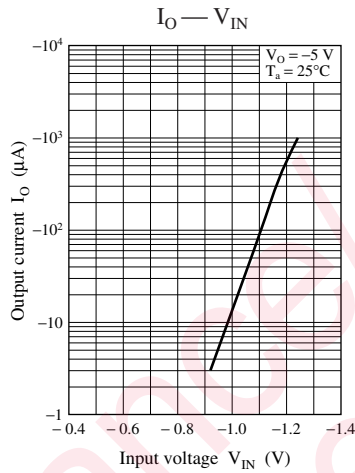
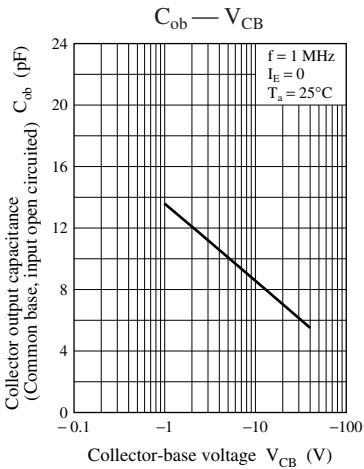


Characteristics charts of UNR4121

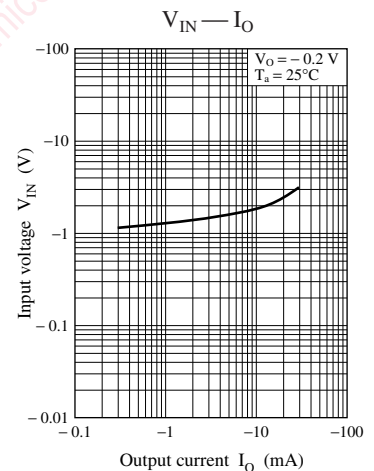
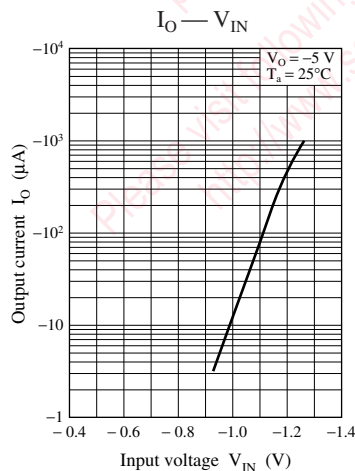
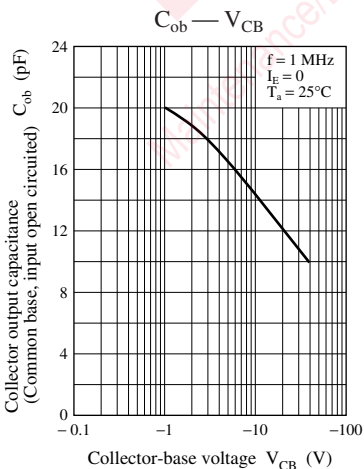
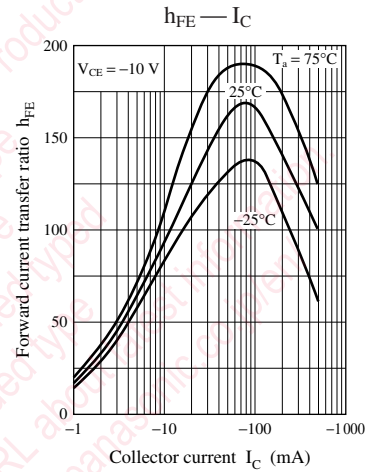
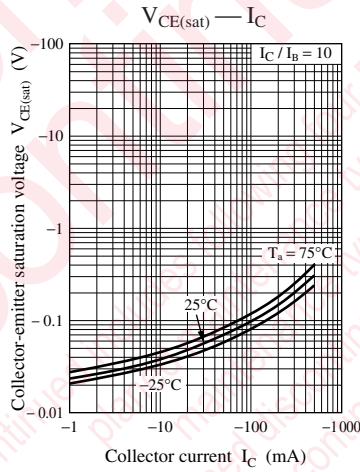
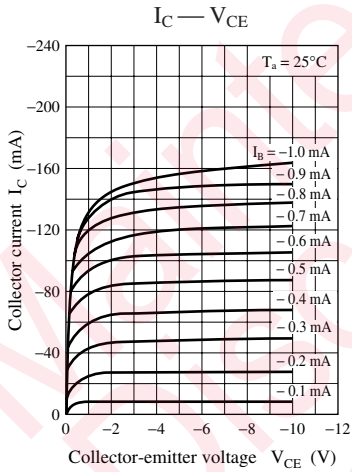


Characteristics charts of UNR4122

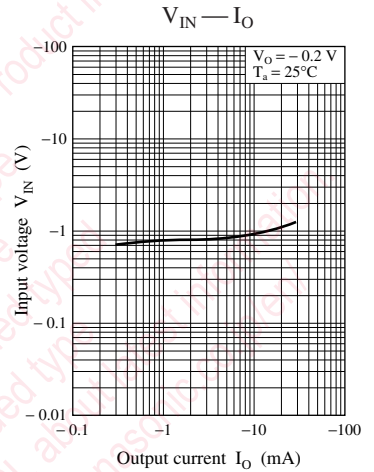
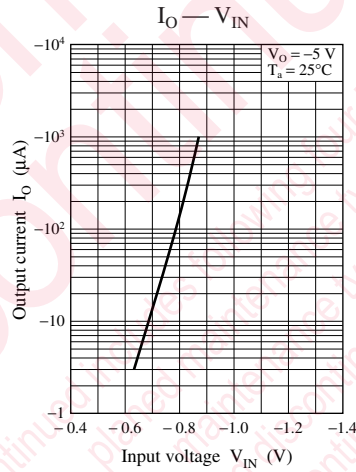
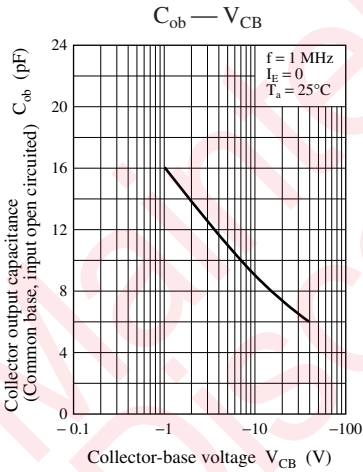
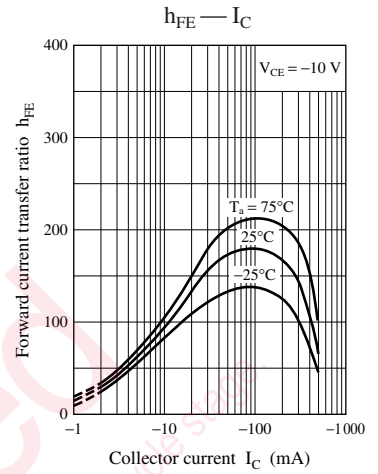
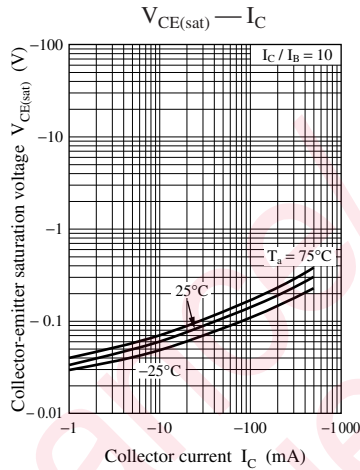
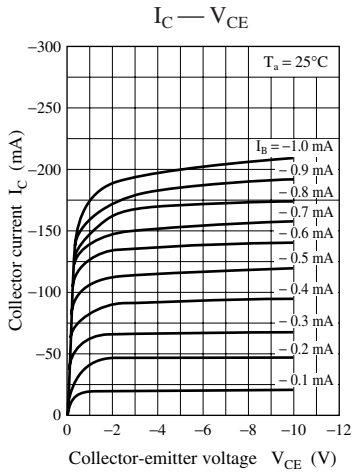




Characteristics charts of UNR4123

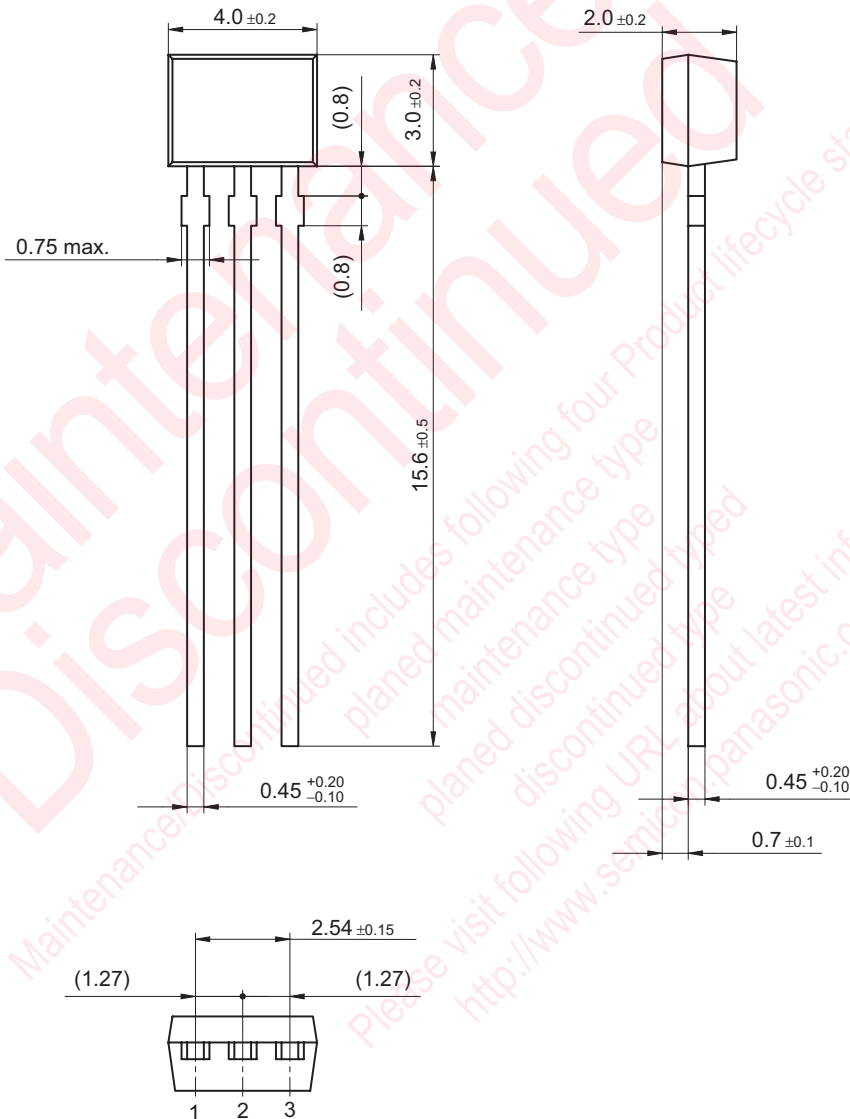


Characteristics charts of UNR4124



NS-A1

Unit: mm



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