

UNR4221/4222/4223/4224

(UN4221/4222/4223/4224)

Silicon NPN epitaxial planer transistor

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)
● UNR4221	2.2kΩ	2.2kΩ
● UNR4222	4.7kΩ	4.7kΩ
● UNR4223	10kΩ	10kΩ
● UNR4224	2.2kΩ	10kΩ

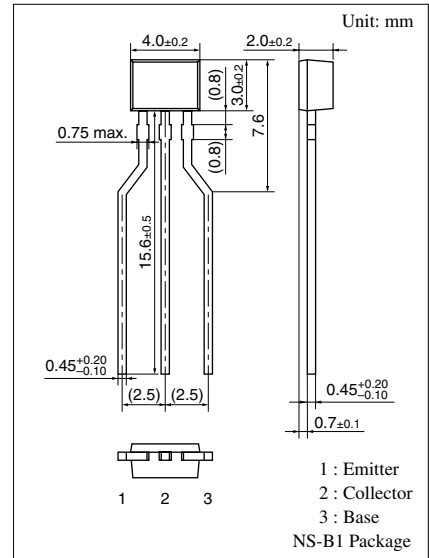
Absolute Maximum Ratings (T_a=25°C)

Parameter	Symbol	Ratings	Unit
Collector to base voltage	V _{CBO}	50	V
Collector to emitter voltage	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

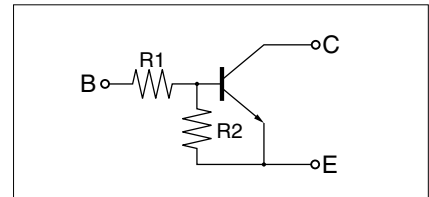
Electrical Characteristics (T_a=25°C)

Parameter		Symbol	Conditions	min	typ	max	Unit
Collector cutoff current		I _{CBO}	V _{CB} = 50V, I _E = 0			1	μA
		I _{CEO}	V _{CE} = 50V, I _B = 0			1	μA
Emitter cutoff current	UNR4221	I _{EBO}	V _{EB} = 6V, I _C = 0			5	mA
	UNR4222					2	
	UNR4223/4224					1	
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
Forward current transfer ratio	UNR4221	h _{FE}	V _{CE} = 10V, I _C = 100mA	40			
	UNR4222			50			
	UNR4223/4224			60			
Collector to emitter saturation voltage		V _{CE(sat)}	I _C = 100mA, I _B = 5mA			0.25	V
Output voltage high level		V _{OH}	V _{CC} = 5V, V _B = 0.5V, R _L = 500Ω	4.9			V
Output voltage low level		V _{OL}	V _{CC} = 5V, V _B = 3.5V, R _L = 500Ω			0.2	V
Input resistance	UNR4221/4224	R ₁			2.2		kΩ
	UNR4222			(-30%)	4.7	(+30%)	
	UNR4223				10		
Resistance ratio		R ₁ /R ₂		0.8	1.0	1.2	
				UNR4224	0.17	0.22	

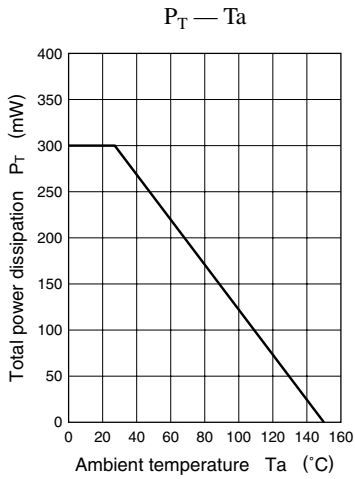
Note) The Part numbers in the Parenthesis show conventional part number.



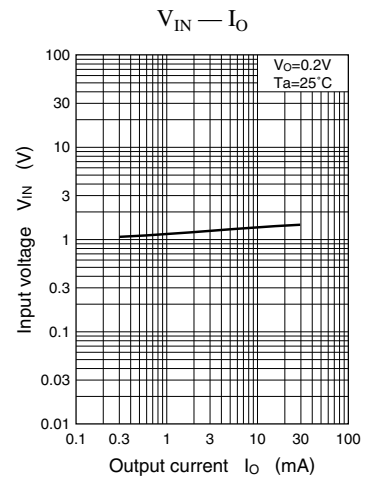
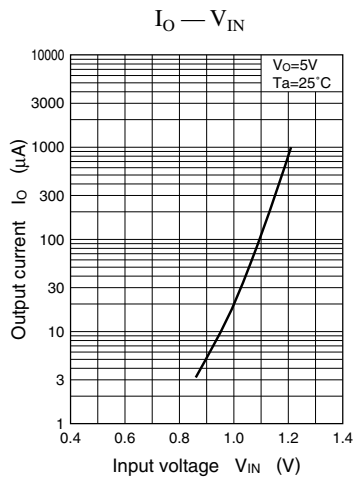
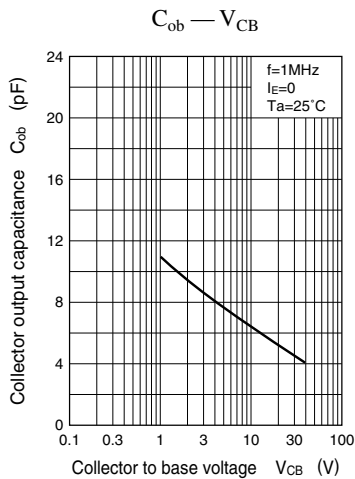
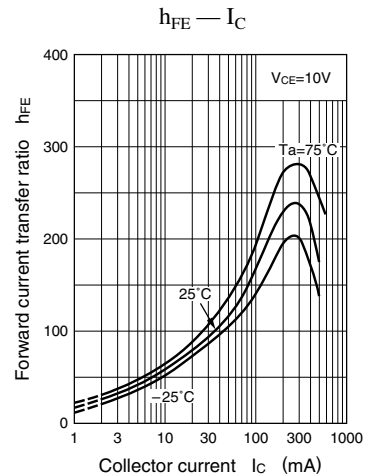
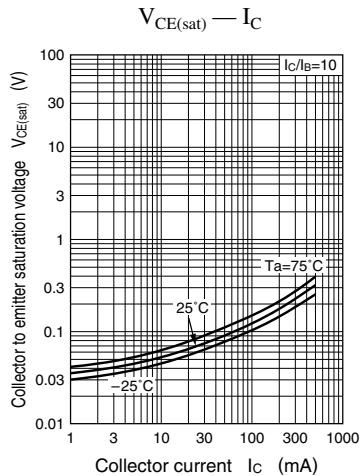
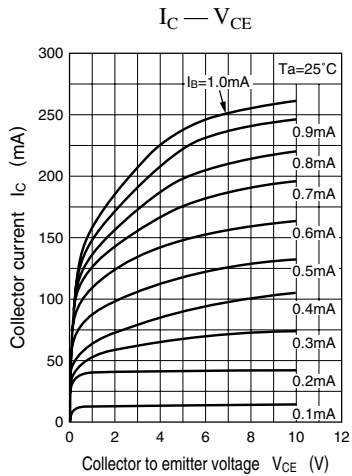
Internal Connection



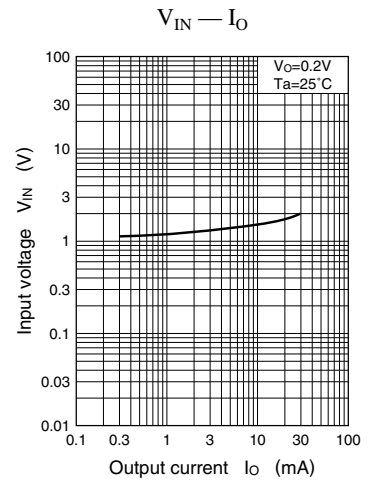
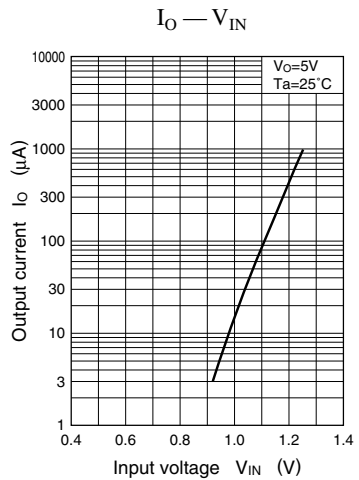
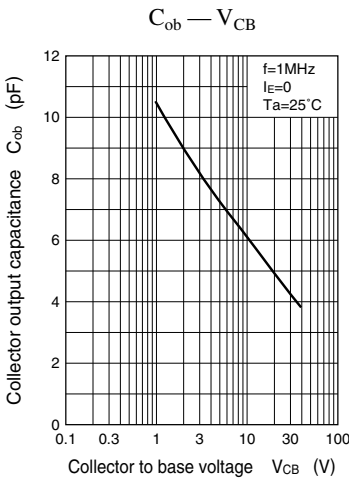
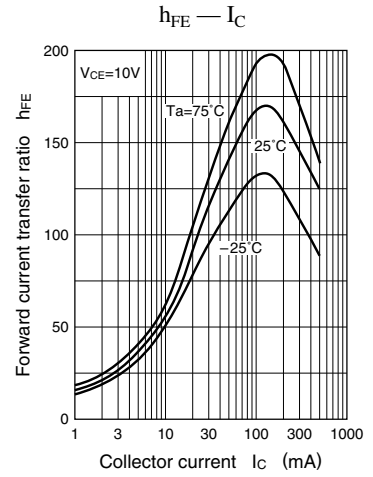
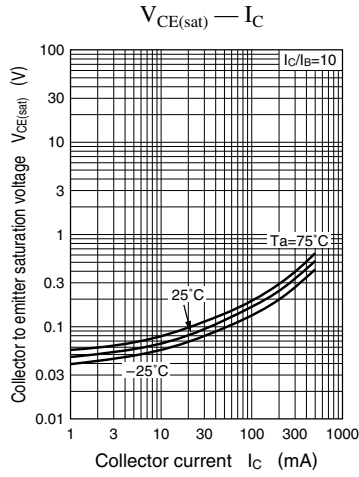
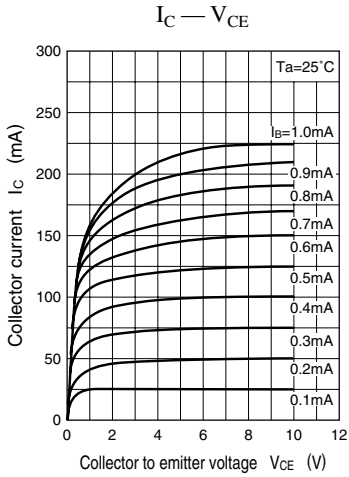
Common characteristics chart



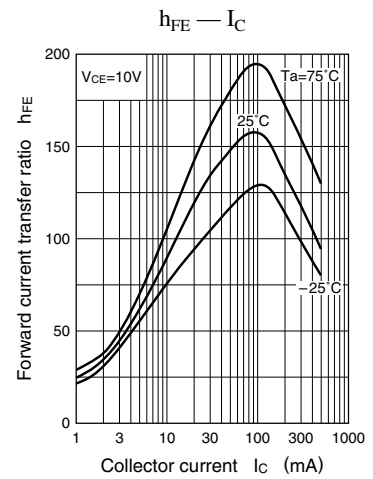
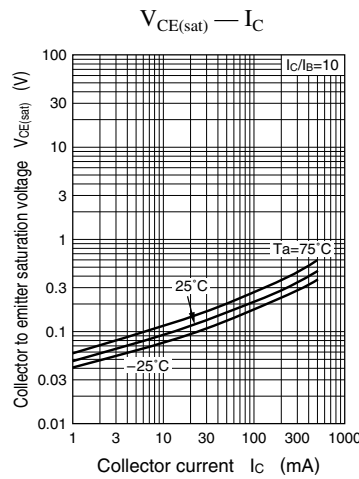
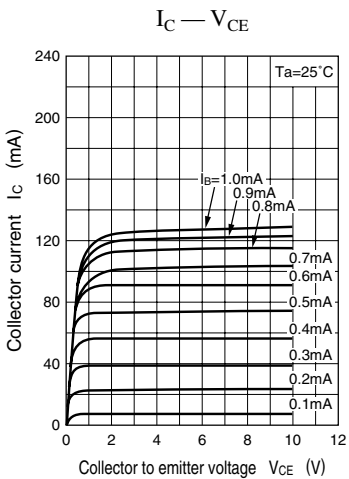
Characteristics charts of UNR4221

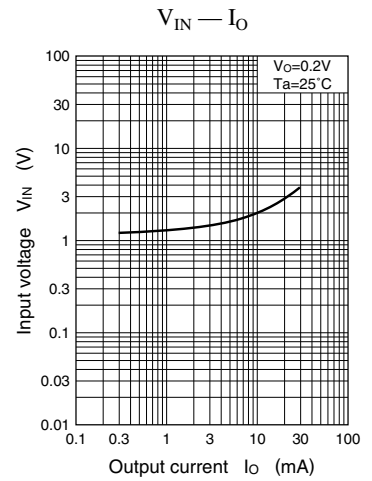
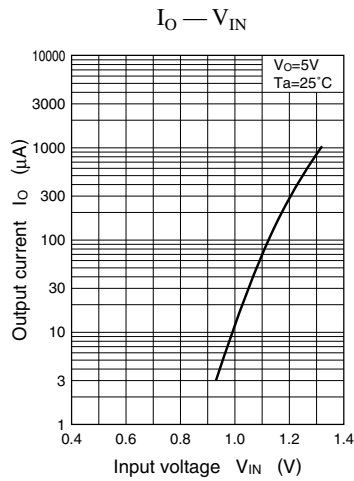
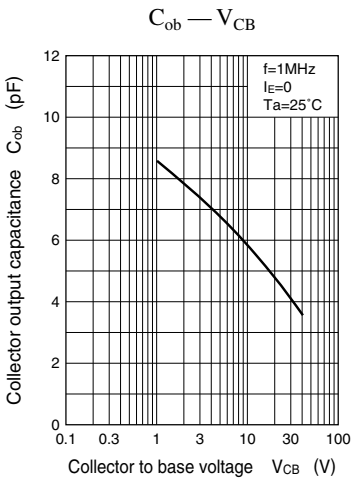


Characteristics charts of UNR4222

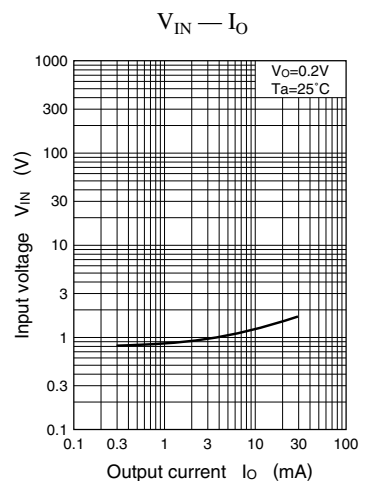
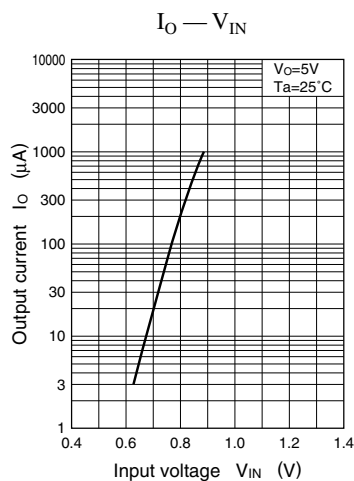
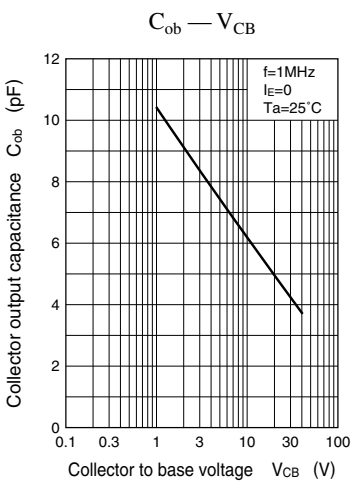
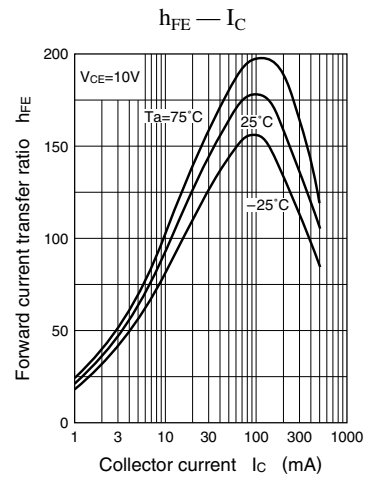
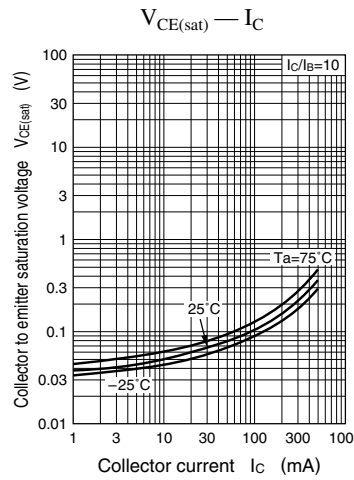
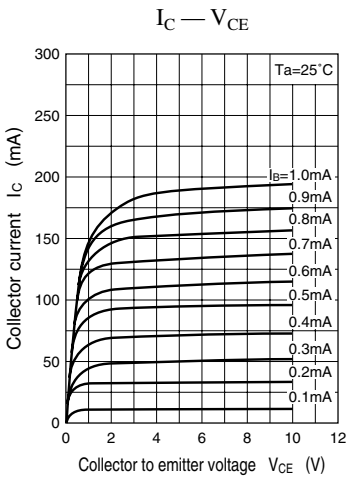


Characteristics charts of UNR4223





Characteristics charts of UNR4224



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