

UNR6221/6222/6223/6224 (UN6221/6222/6223/6224)

Silicon NPN epitaxial planer transistor

For digital circuits

Features

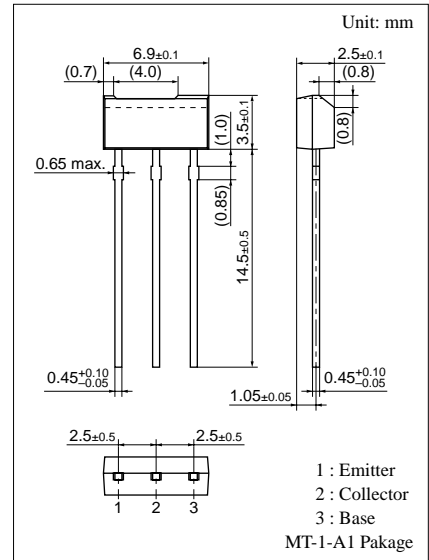
- Costs can be reduced through downsizing of the equipment and reduction of the number of parts.
- MT-1 type package, allowing supply with the radial taping.

Resistance by Part Number

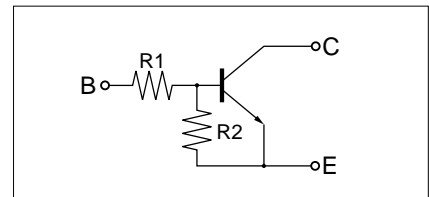
- | | (R ₁) | (R ₂) |
|-----------|-------------------|-------------------|
| • UNR6221 | 2.2kΩ | 2.2kΩ |
| • UNR6222 | 4.7kΩ | 4.7kΩ |
| • UNR6223 | 10kΩ | 10kΩ |
| • UNR6224 | 2.2kΩ | 10kΩ |

Absolute Maximum Ratings (Ta=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	600	mW
Junction temperature	T _j	150	°C
Storage temperature	T _{stg}	-55 to +150	°C



Internal Connection

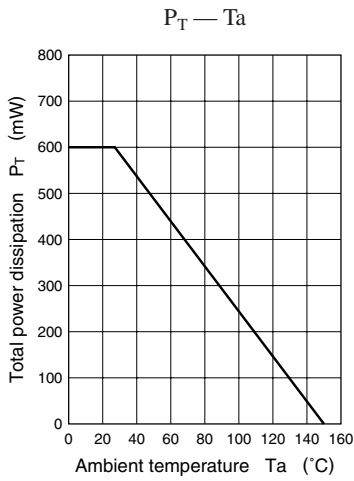


Note) The Part numbers in the Parenthesis show conventional part number.

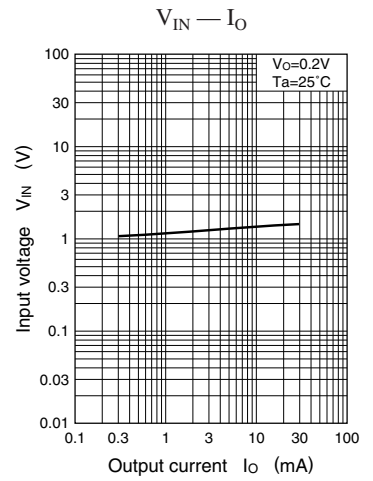
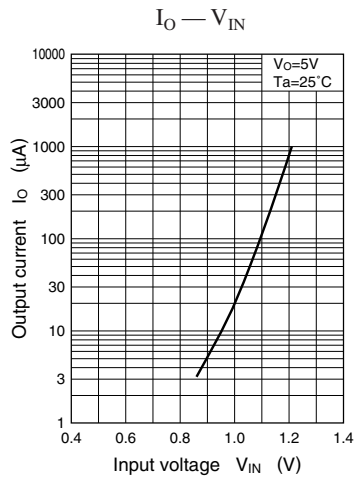
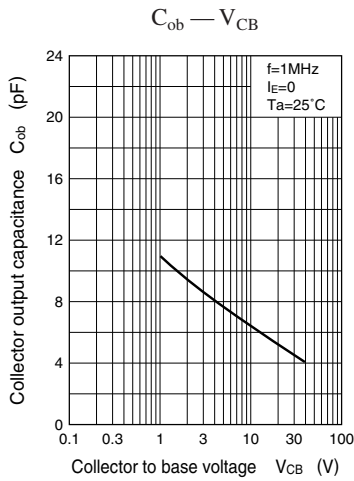
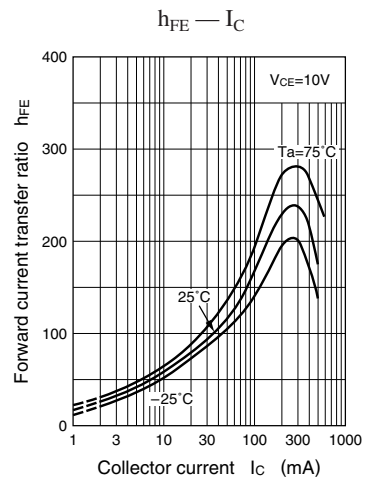
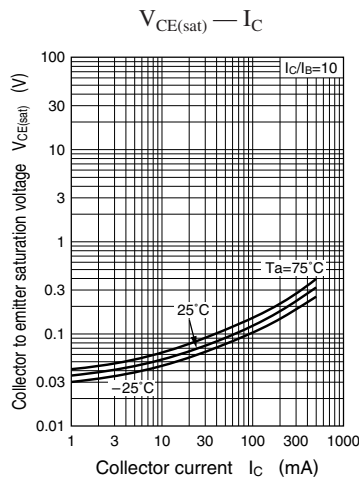
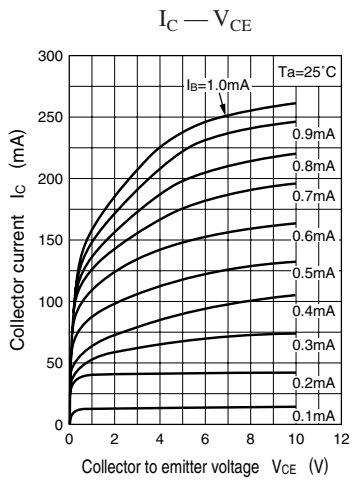
Electrical Characteristics ($T_a=25^\circ\text{C}$)

Parameter		Symbol	Conditions	min	typ	max	Unit
Collector cutoff current		I_{CBO}	$V_{CB} = 50\text{V}, I_E = 0$			1	μA
		I_{CEO}	$V_{CE} = 50\text{V}, I_B = 0$			1	μA
Emitter cutoff current	UNR6221	I_{EBO}	$V_{EB} = 6\text{V}, I_C = 0$			5	mA
	UNR6222					2	
	UNR6223/6224					1	
Collector to base voltage		V_{CBO}	$I_C = 10\mu\text{A}, I_E = 0$	50			V
Collector to emitter voltage		V_{CEO}	$I_C = 2\text{mA}, I_B = 0$	50			V
Forward current transfer ratio	UNR6221	h_{FE}	$V_{CE} = 10\text{V}, I_C = 100\text{mA}$	40			
	UNR6222			50			
	UNR6223/6224			60			
Collector to 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	UNR6221/6224	R_1		(-30%)	2.2	(+30%)	k Ω
	UNR6222				4.7		
	UNR6223				10		
Resistance ratio		R_1/R_2			0.8	1.0	1.2
					UNR6224	0.17	0.22

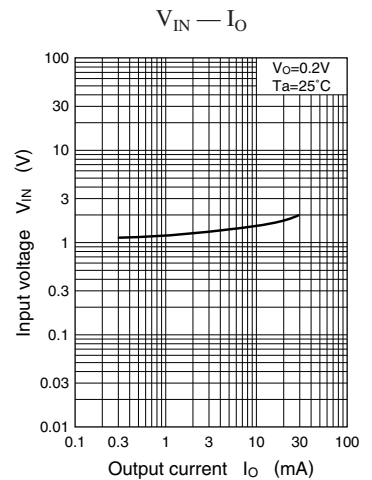
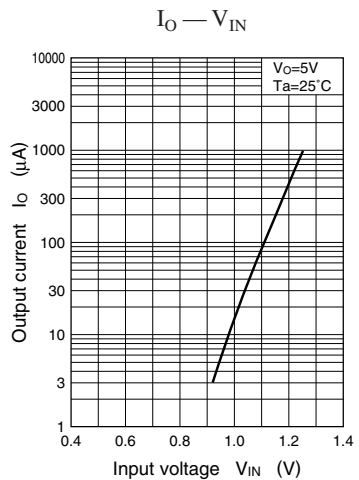
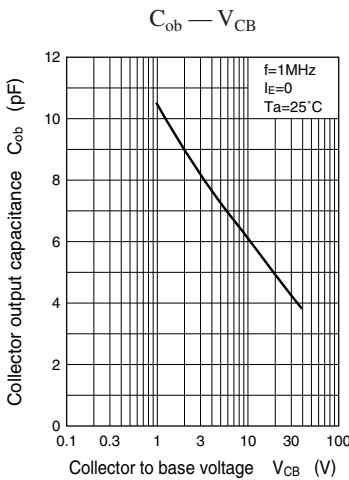
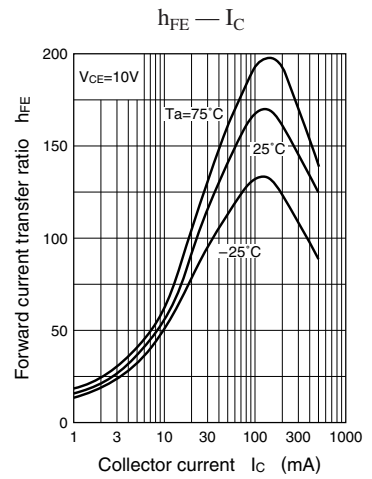
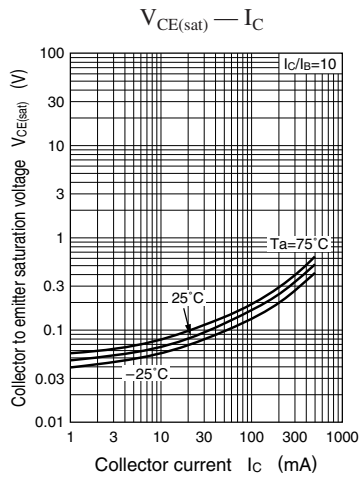
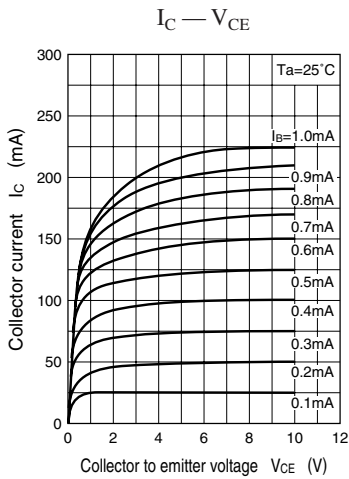
Common characteristics chart



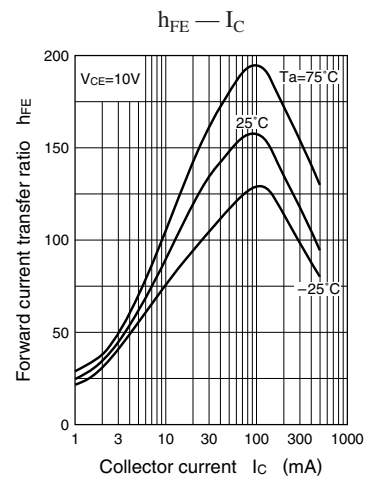
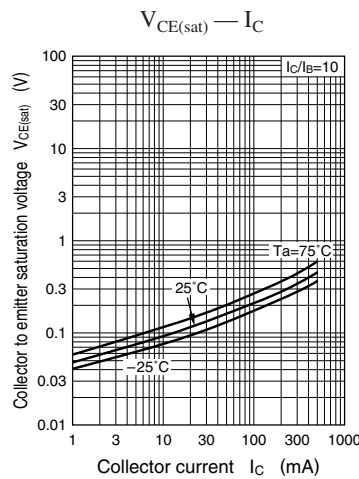
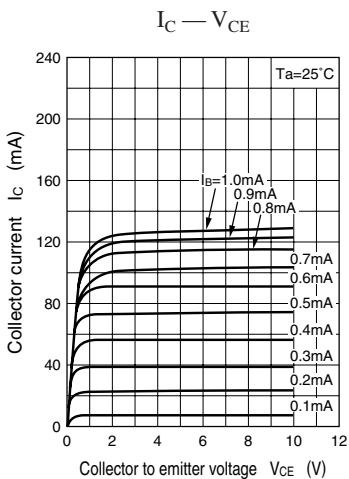
Characteristics charts of UNR6221

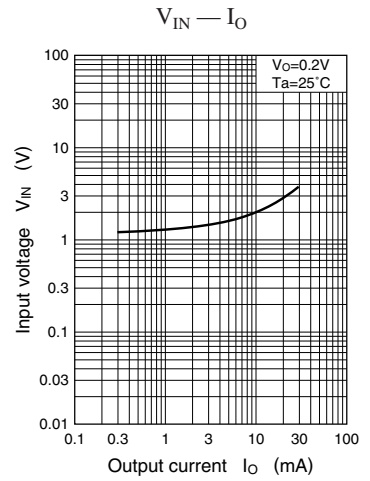
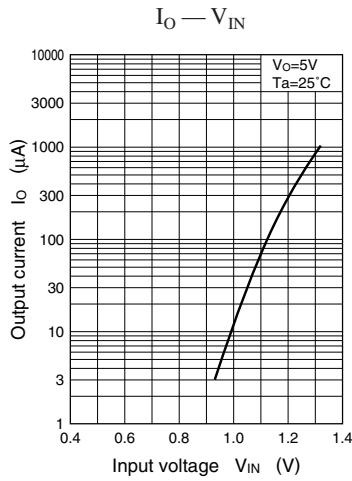
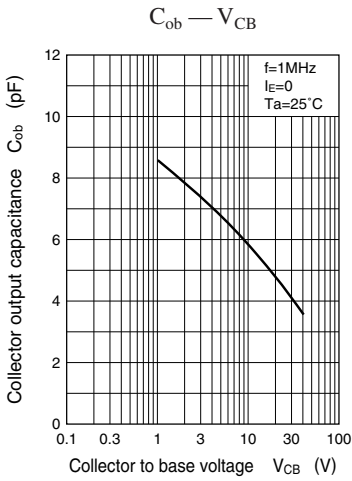


Characteristics charts of UNR6222

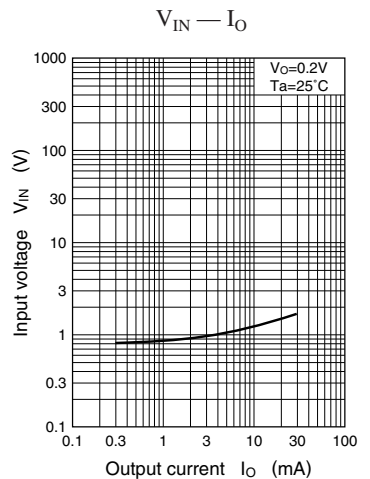
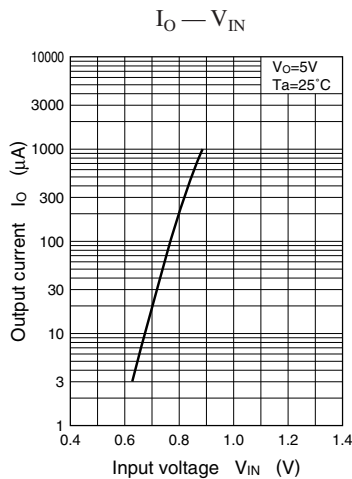
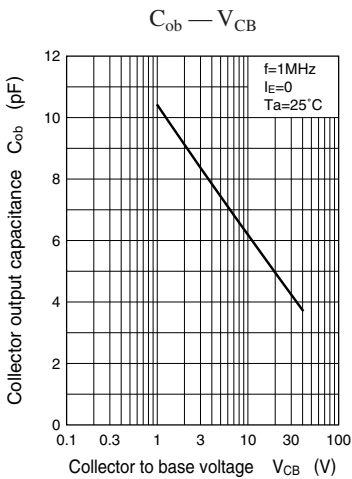
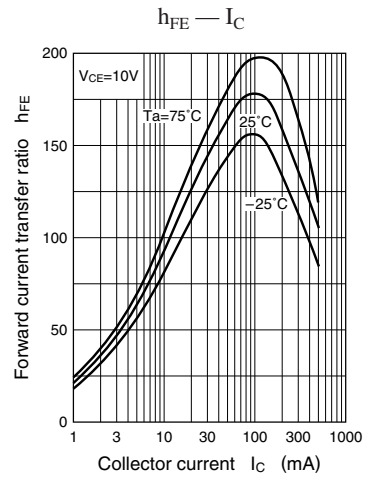
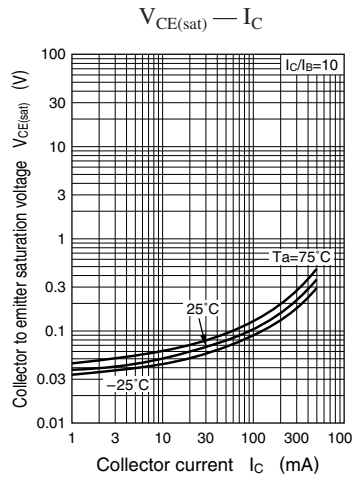
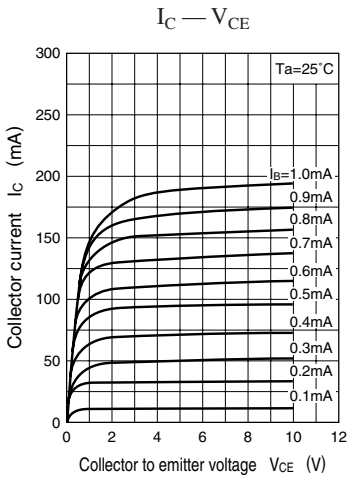


Characteristics charts of UNR6223





Characteristics charts of UNR6224



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