

# UNR212x Series (UN212x 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.
- Mini type package allowing easy automatic insertion through tape packing and magazine packing

## ■ Resistance by Part Number

	Marking Symbol (R <sub>1</sub> )	(R <sub>2</sub> )
• UNR2121 (UN2121)	7A	2.2 kΩ 2.2 kΩ
• UNR2122 (UN2122)	7B	4.7 kΩ 4.7 kΩ
• UNR2123 (UN2123)	7C	10 kΩ 10 kΩ
• UNR2124 (UN2124)	7D	2.2 kΩ 10 kΩ
• UNR212X (UN212X)	7I	0.27 kΩ 5 kΩ
• UNR212Y (UN212Y)	7Y	3.1 kΩ 4.6 kΩ

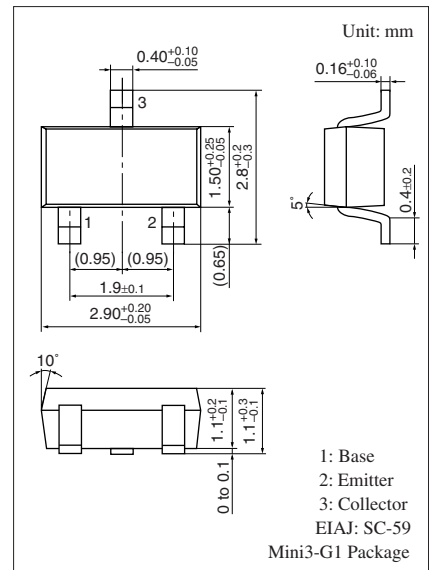
## ■ Absolute Maximum Ratings T<sub>a</sub> = 25°C

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V <sub>CBO</sub>	-50	V
Collector-emitter voltage (Base open)	V <sub>CEO</sub>	-50	V
Collector current	I <sub>C</sub>	-500	mA
Total power dissipation	P <sub>T</sub>	200	mW
Junction temperature	T <sub>j</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55 to +150	°C

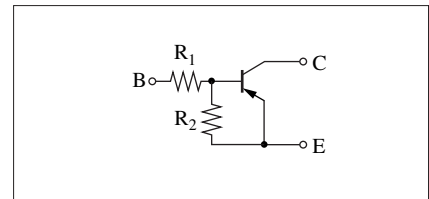
## ■ Electrical Characteristics T<sub>a</sub> = 25°C ± 3°C

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	V <sub>CBO</sub>	I <sub>C</sub> = -10 μA, I <sub>E</sub> = 0	-50			V
Collector-emitter voltage (Base open)	V <sub>CEO</sub>	I <sub>C</sub> = -2 mA, I <sub>B</sub> = 0	-50			V
Collector-base cutoff current (Emitter open)	I <sub>CBO</sub>	V <sub>CB</sub> = -50 V, I <sub>E</sub> = 0			-1.0	μA
	UNR212X				-0.1	
Collector-emitter cutoff current (Base open)	I <sub>CEO</sub>	V <sub>CE</sub> = -50 V, I <sub>B</sub> = 0			-1.0	μA
	UNR212X				-0.5	
Emitter-base cutoff current (Collector open)	I <sub>EBO</sub>	V <sub>EB</sub> = -6 V, I <sub>C</sub> = 0			-5	mA
	UNR2121				-2	
	UNR2122/212X/212Y				-1	
	UNR2123/2124					
Forward current transfer ratio	h <sub>FE</sub>	V <sub>CE</sub> = -10 V, I <sub>C</sub> = -5 mA	40			—
	UNR2121		50			
	UNR2122/212Y		60			
	UNR2123/2124		20			
	UNR212X					

Note) The part numbers in the parenthesis show conventional part number.



## Internal Connection

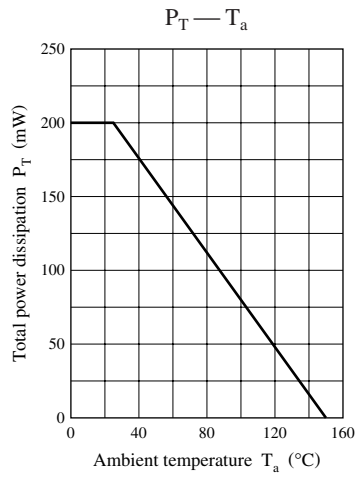


■ Electrical Characteristics (continued)  $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

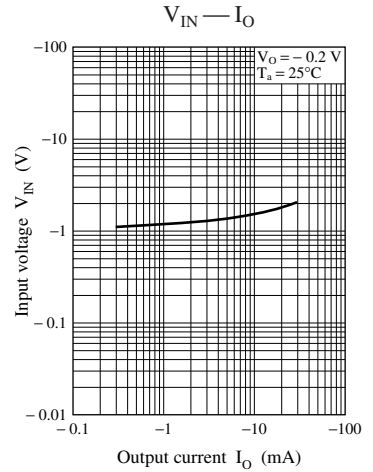
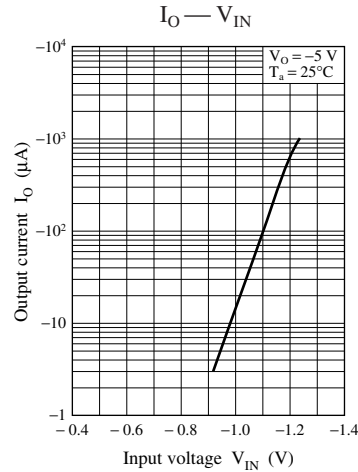
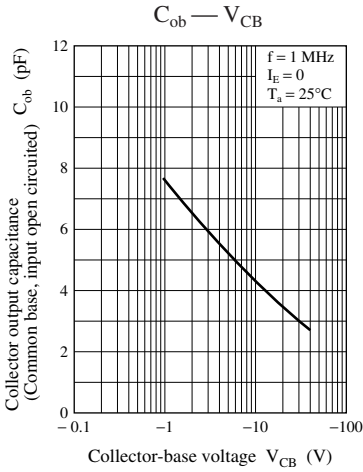
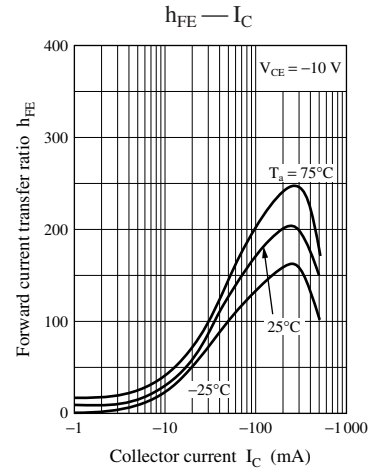
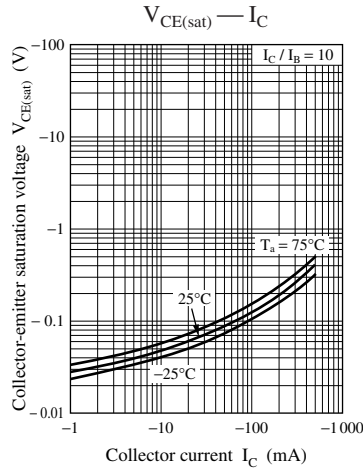
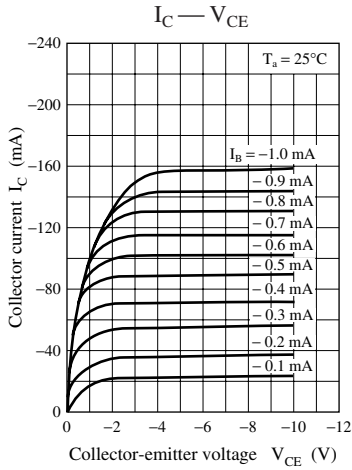
Parameter	Symbol	Conditions	Min	Typ	Max	Unit				
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -100\text{ mA}, I_B = -5\text{ mA}$			-0.25	V				
		$I_C = -10\text{ mA}, I_B = -0.3\text{ mA}$								
Output voltage high-level	$V_{OH}$	$V_{CC} = -5\text{ V}, V_B = -0.5\text{ V}, R_L = 500\ \Omega$	-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	$R_1$		-30%	UNR2121/2124	2.2	+30%	k $\Omega$			
				UNR2122	4.7					
				UNR2123	10					
				UNR212X	0.27					
				UNR212Y	3.1					
Resistance ratio	$R_1/R_2$		0.8	1.0	1.2					
							UNR2124	0.17	0.22	0.27
							UNR212X	0.043	0.054	0.065
							UNR212Y	0.53	0.67	0.81

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

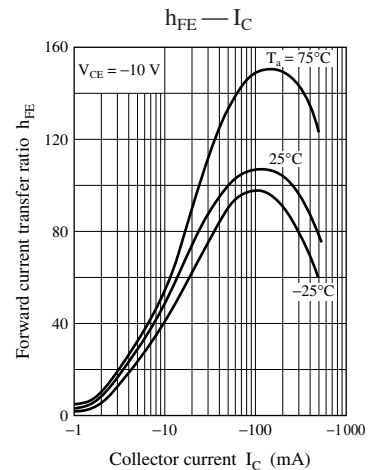
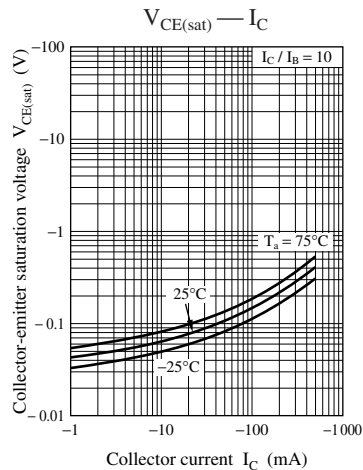
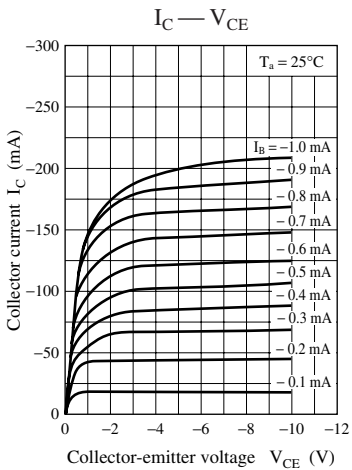
Common characteristics chart

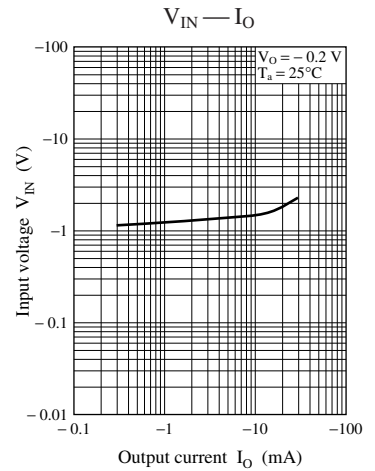
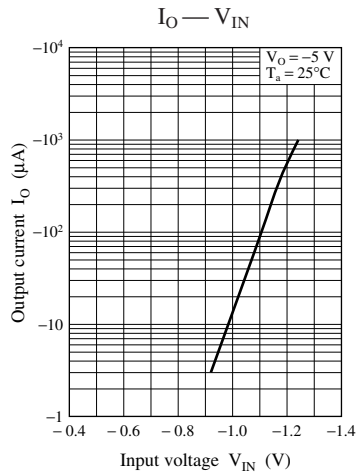
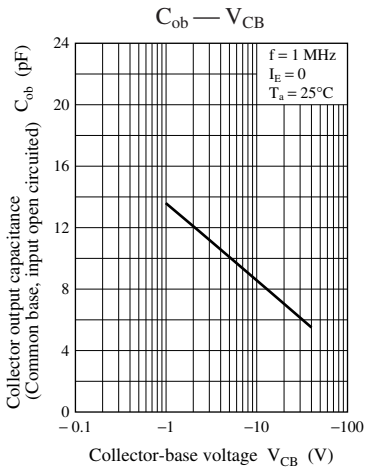


Characteristics charts of UNR2121

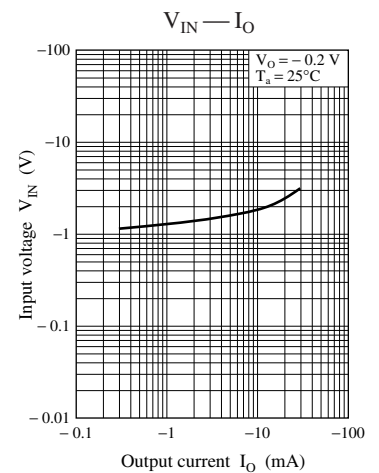
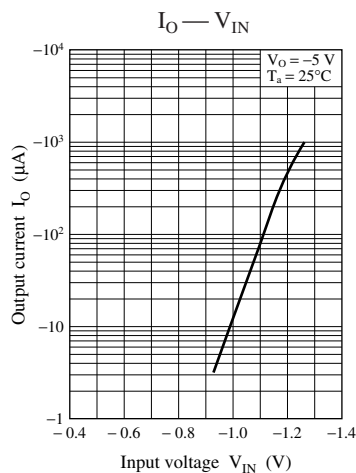
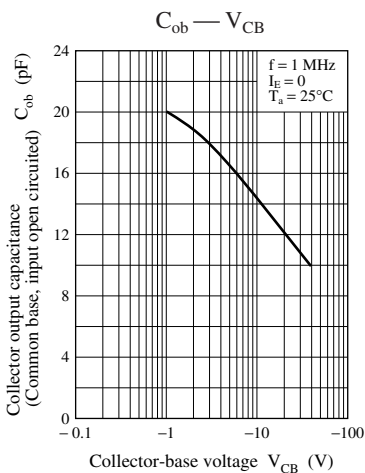
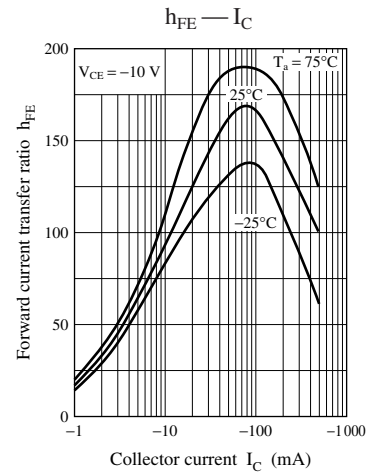
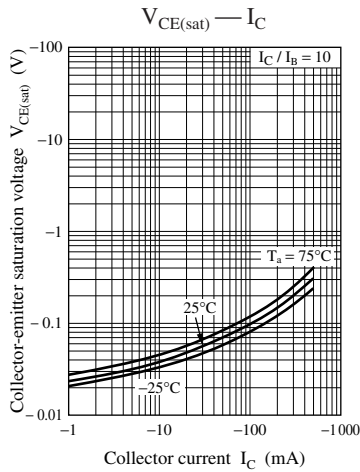
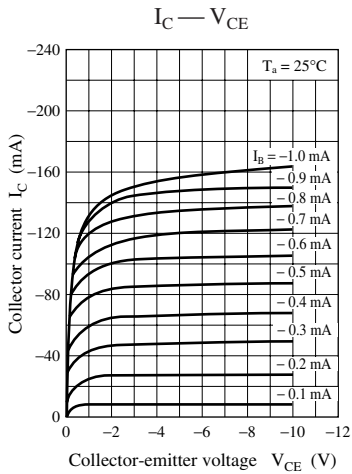


Characteristics charts of UNR2122

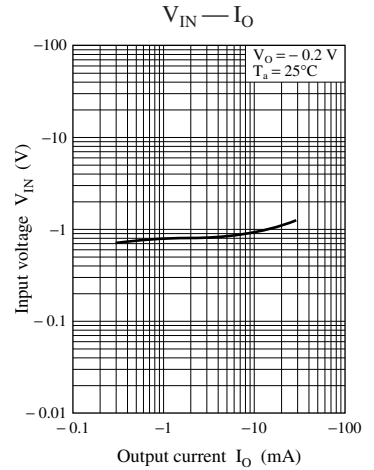
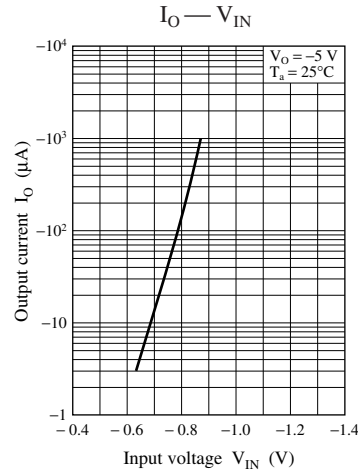
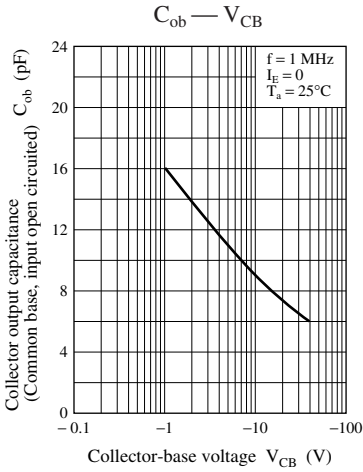
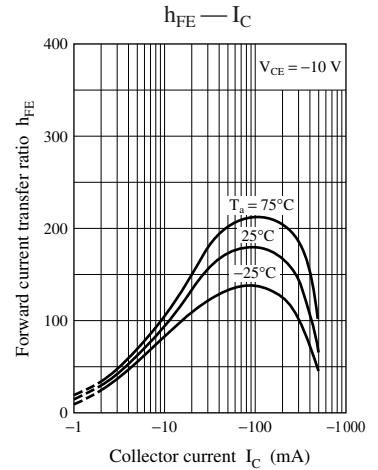
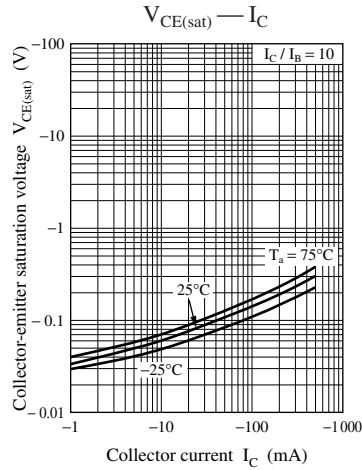
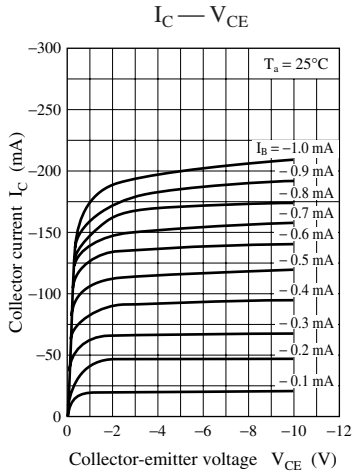




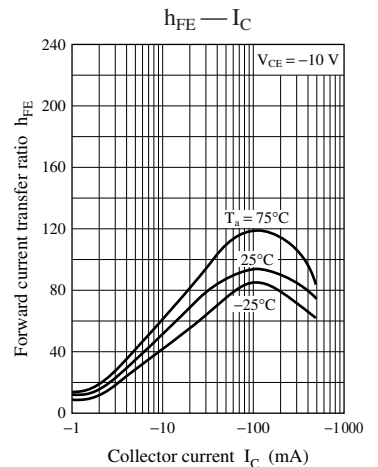
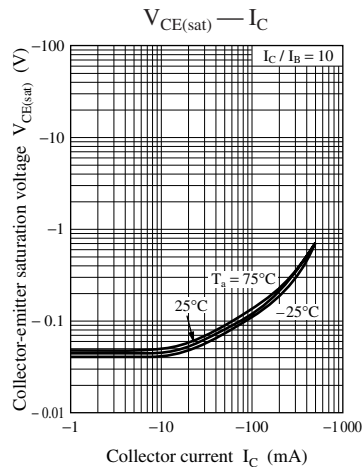
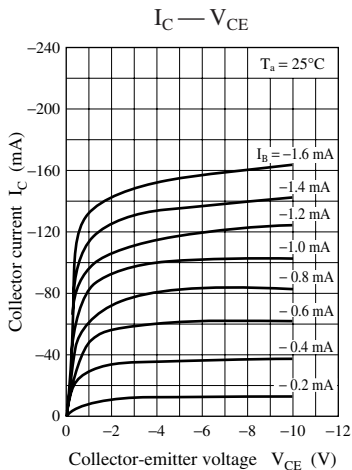
Characteristics charts of UNR2123

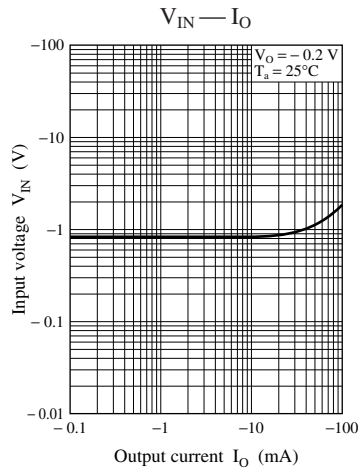
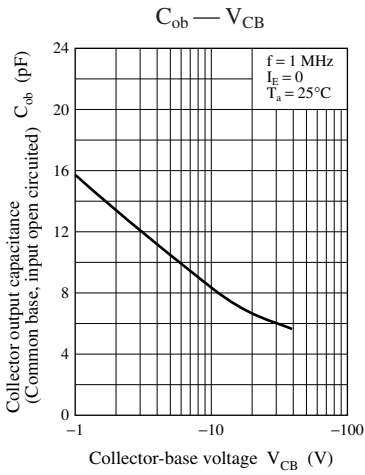


Characteristics charts of UNR2124

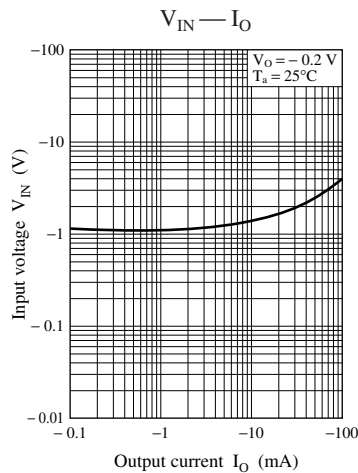
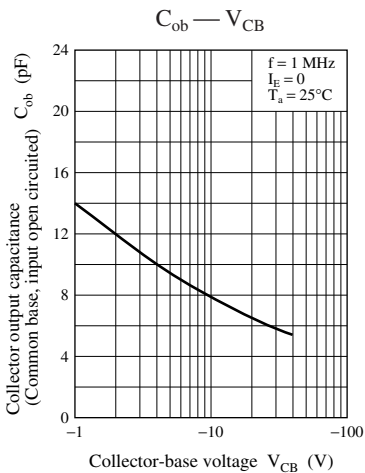
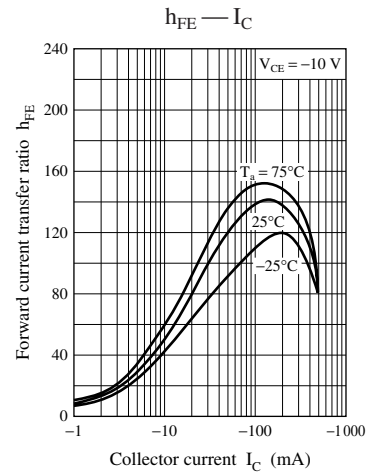
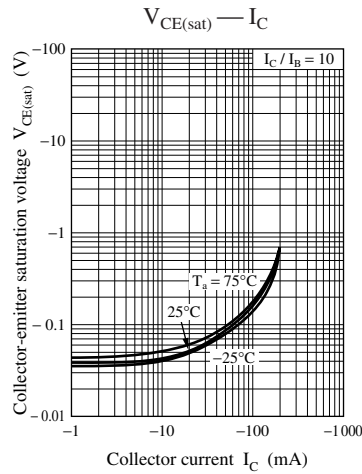
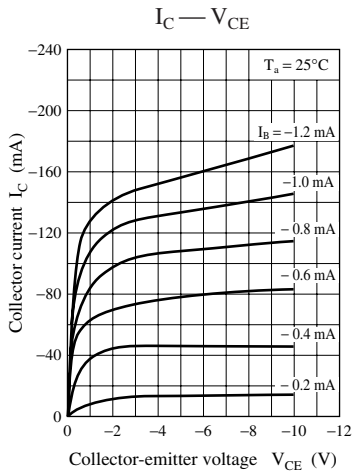


Characteristics charts of UNR212X





Characteristics charts of UNR212Y



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