

UNR412x Series (UN412x 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

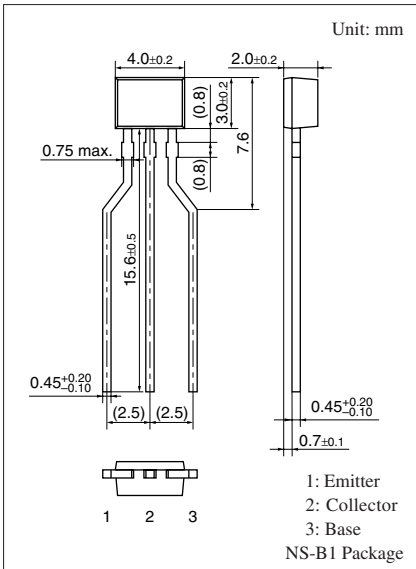
	(R ₁)	(R ₂)
• UNR4121 (UN4121)	2.2 kΩ	2.2 kΩ
• UNR4122 (UN4122)	4.7 kΩ	4.7 kΩ
• UNR4123 (UN4123)	10 kΩ	10 kΩ
• UNR4124 (UN4124)	2.2 kΩ	10 kΩ
• UNR412X (UN412X)	0.27 kΩ	5 kΩ
• UNR412Y (UN412Y)	3.1 kΩ	4.6 kΩ

■ Absolute Maximum Ratings T_a = 25°C

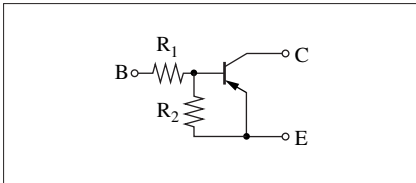
Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V _{CBO}	-50	V
Collector-emitter voltage (Base open)	V _{CEO}	-50	V
Collector current	I _C	-500	mA
Total power dissipation	P _T	300	mW
Junction temperature	T _j	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

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

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	V _{CBO}	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 _{CBO}	V _{CB} = -50 V, I _E = 0			-1	μA
	UNR412X				-0.1	
Collector-emitter cutoff current (Base open)	I _{CEO}	V _{CE} = -50 V, I _B = 0			-1	μA
	UNR412X				-0.5	
Emitter-base cutoff current (Collector open)	I _{EBO}	V _{EB} = -6 V, I _C = 0			-5	mA
	UNR4121				-2	
	UNR4122/412X/412Y				-1	
	UNR4123/4124				-1	



Internal Connection

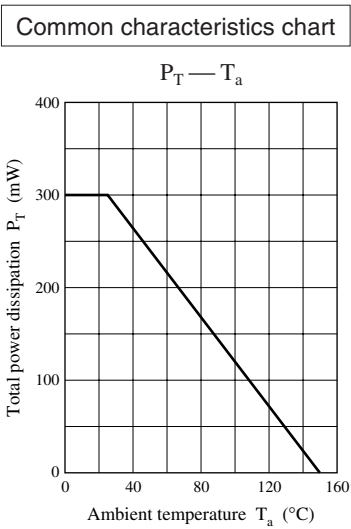


Note) The part numbers in the parenthesis show conventional part number.

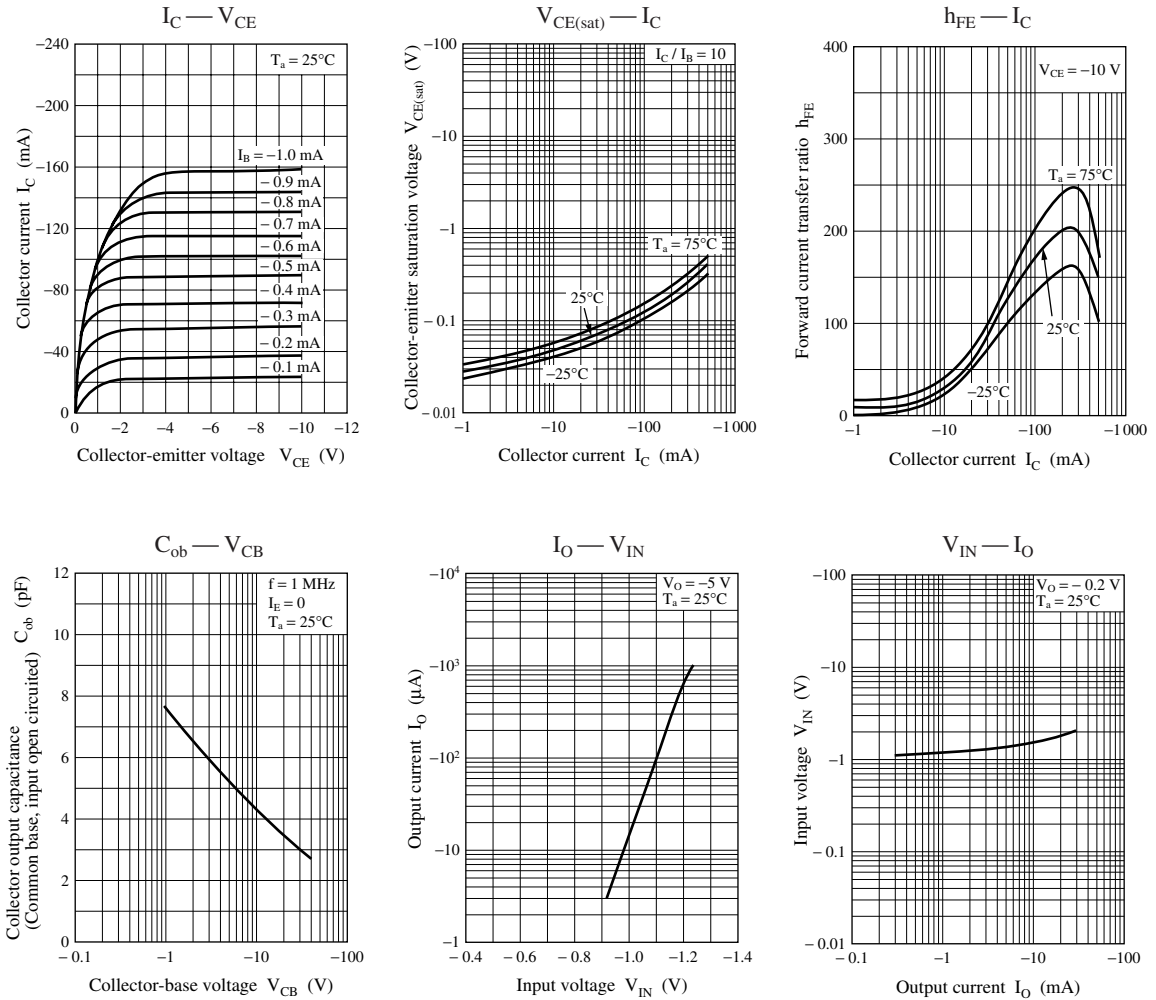
■ Electrical Characteristics (continued) $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

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			—
	UNR4122/412Y			50			
	UNR4123/4124			60			
	UNR412X			20			
Collector-emitter saturation voltage		$V_{CE(sat)}$	$I_C = -100\text{ mA}$, $I_B = -5\text{ mA}$			- 0.25	V
	UNR412X		$I_C = -10\text{ mA}$, $I_B = -0.3\text{ mA}$			- 0.25	
	UNR412Y		$I_C = -50\text{ mA}$, $I_B = -5\text{ mA}$			- 0.15	
Output voltage high-level		V_{OH}	$V_{CC} = -5\text{ V}$, $V_B = -0.5\text{ V}$, $R_L = 500\text{ }\Omega$	-4.9			V
Output voltage low-level		V_{OL}	$V_{CC} = -5\text{ V}$, $V_B = -3.5\text{ V}$, $R_L = 500\text{ }\Omega$			- 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		
	UNR412X				0.27		
	UNR412Y				3.1		
Resistance ratio		R_1/R_2		0.8	1.0	1.2	—
	UNR4124			0.17	0.22	0.27	
	UNR412X			0.043	0.054	0.065	
	UNR412Y				0.67		

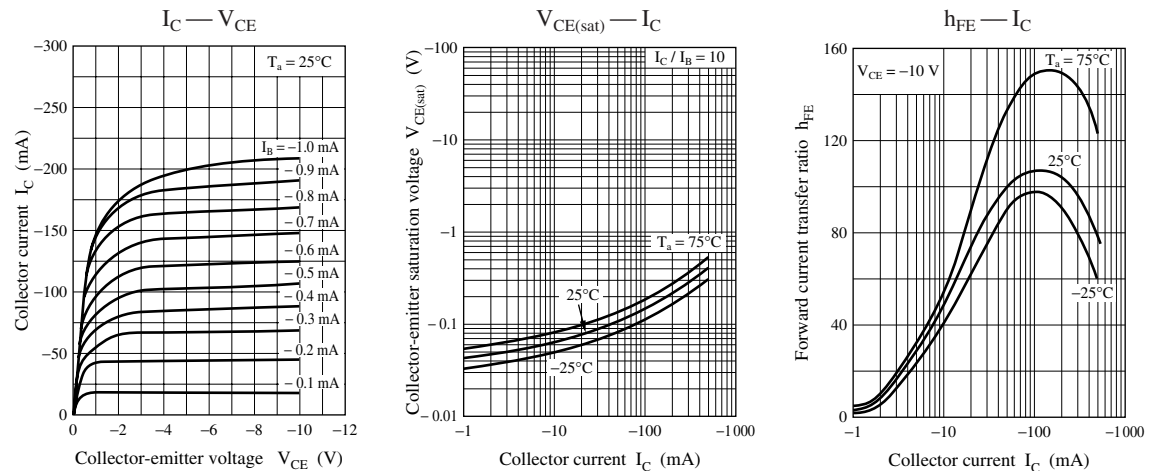
Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

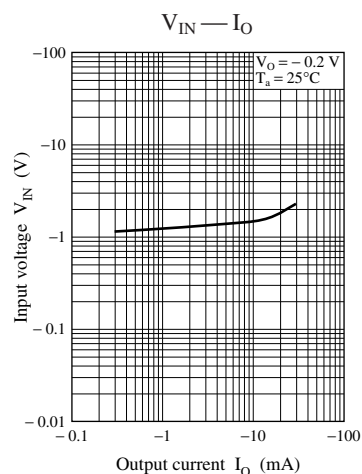
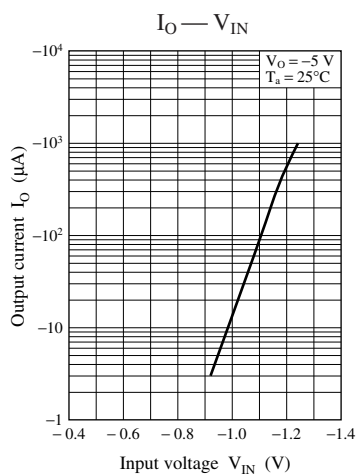
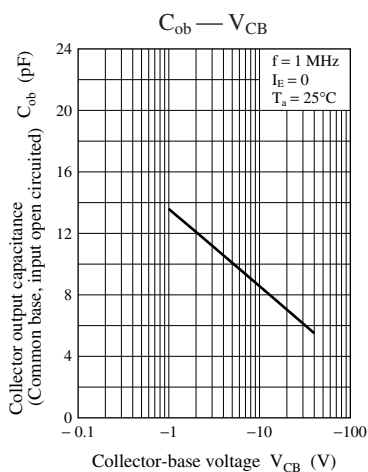


Characteristics charts of UNR4121

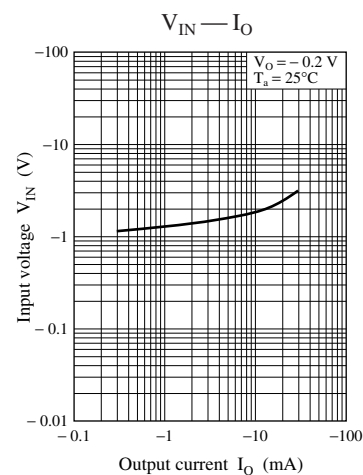
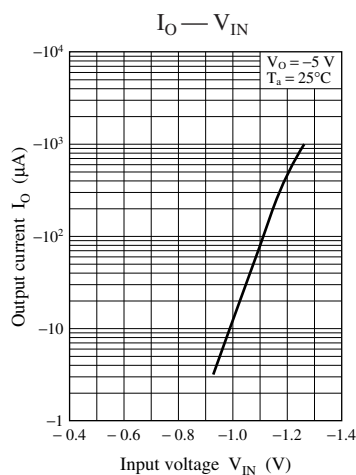
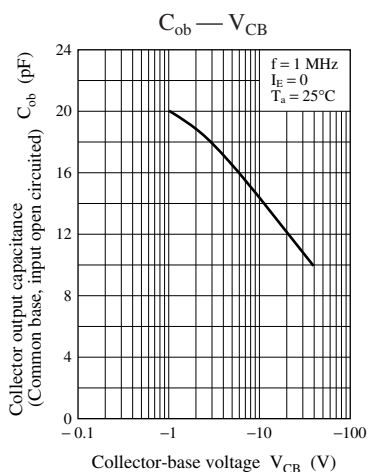
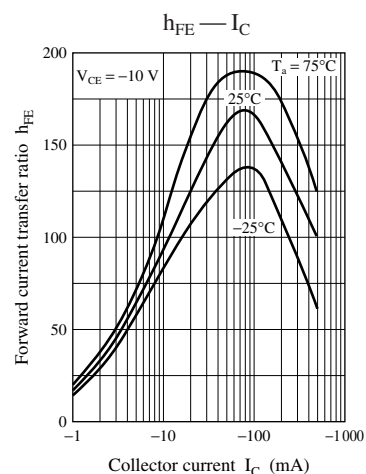
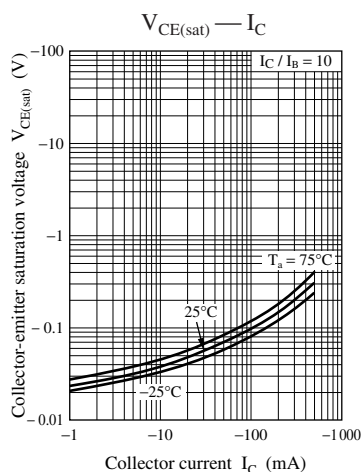
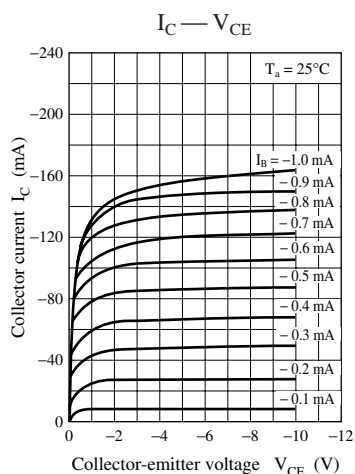


Characteristics charts of UNR4122

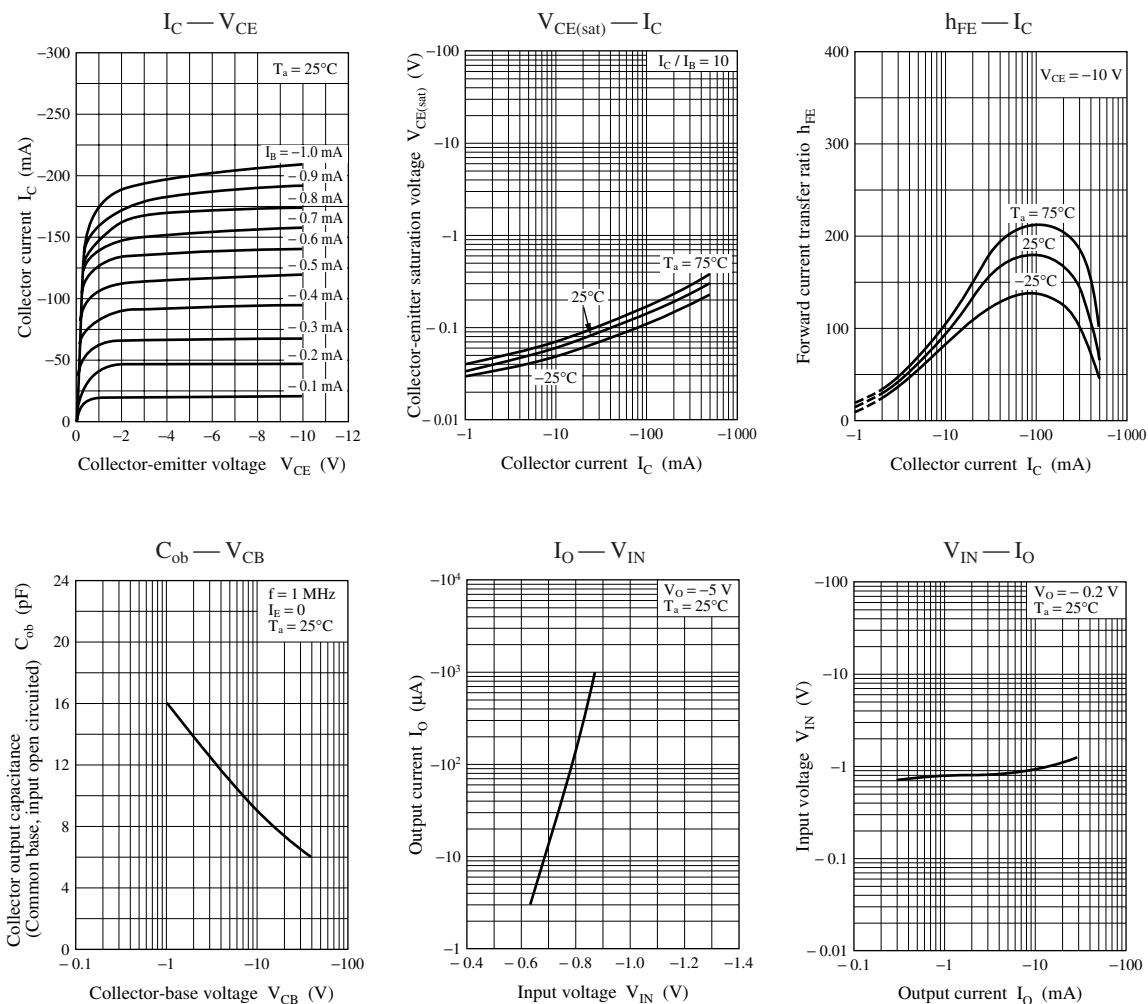




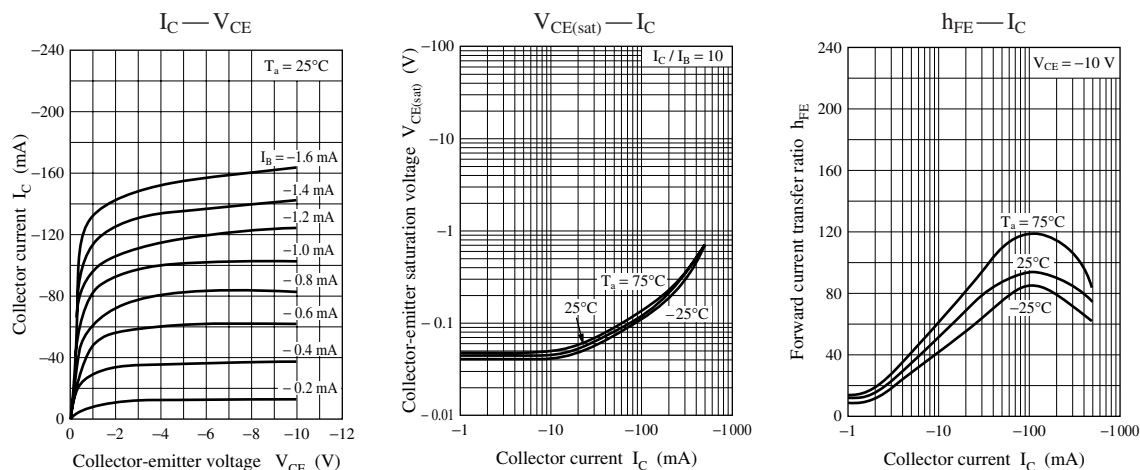
Characteristics charts of UNR4123

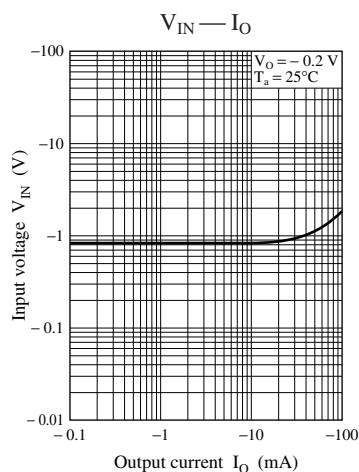
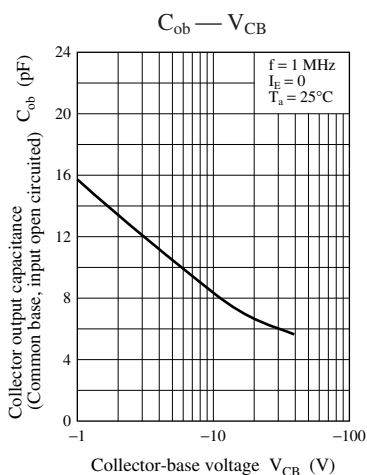


Characteristics charts of UNR4124

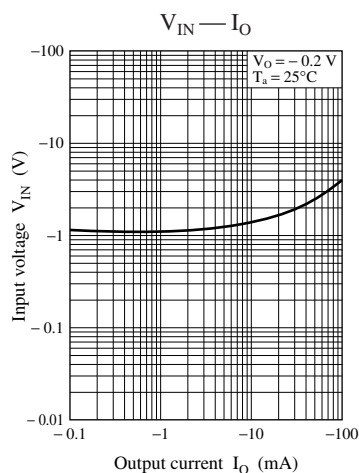
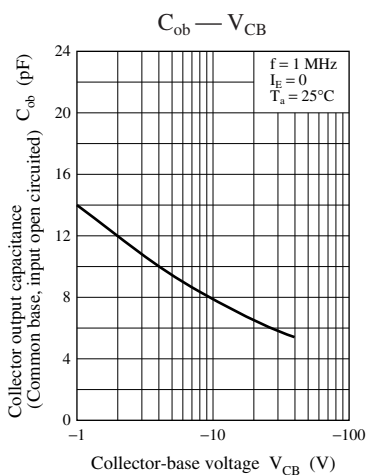
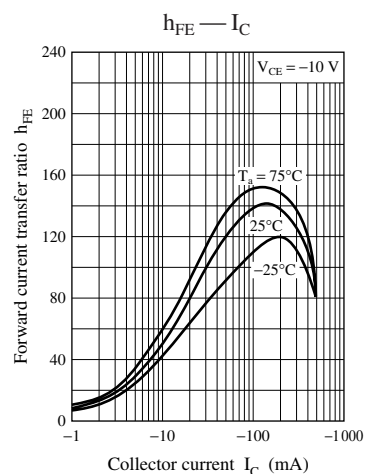
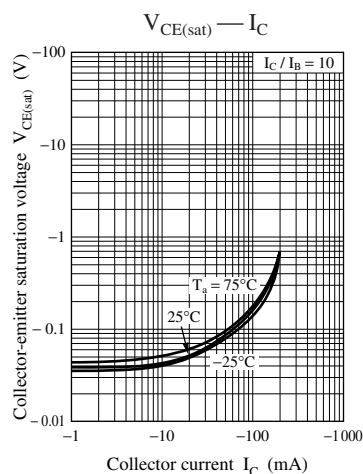
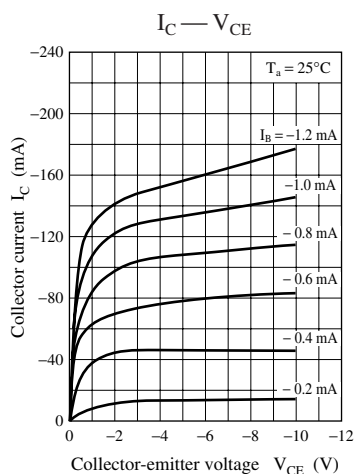


Characteristics charts of UNR412X





Characteristics charts of UNR412Y



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