

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

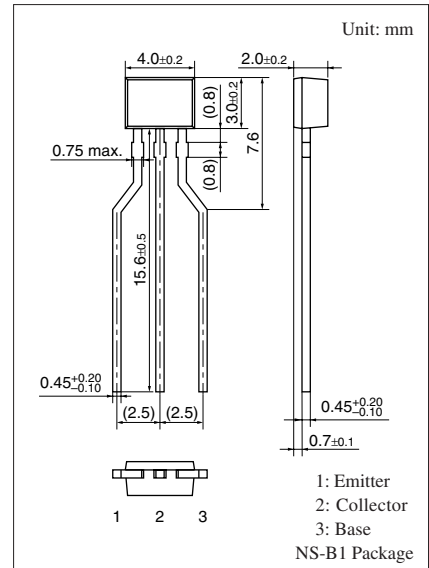
	(R ₁)	(R ₂)
• UNR4121 (UN4121)	2.2 kΩ	2.2 kΩ
• UNR4122 (UN4122)	4.7 kΩ	4.7 kΩ
• UNR4123 (UN4123)	10 kΩ	10 kΩ
• UNR4124 (UN4124)	2.2 kΩ	10 kΩ
• UNR412X (UN412X)	0.27 kΩ	5 kΩ
• UNR412Y (UN412Y)	3.1 kΩ	4.6 kΩ

■ Absolute Maximum Ratings T_a = 25°C

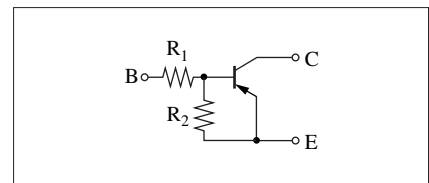
Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V _{CBO}	-50	V
Collector-emitter voltage (Base open)	V _{CEO}	-50	V
Collector current	I _C	-500	mA
Total power dissipation	P _T	300	mW
Junction temperature	T _j	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

■ 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



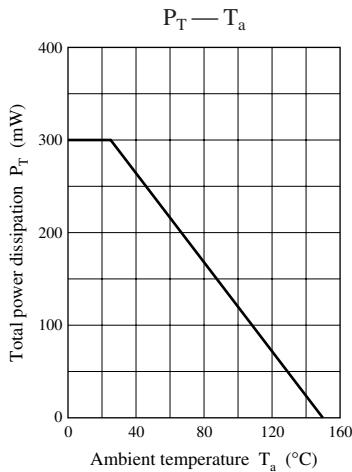
Note) The part numbers in the parenthesis show conventional part number.

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

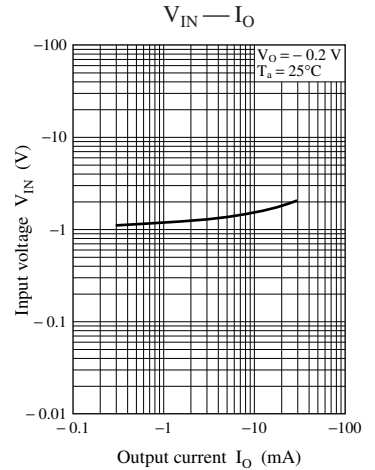
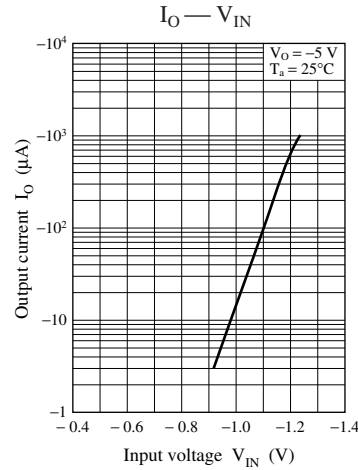
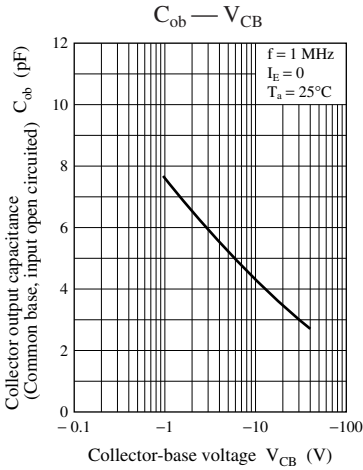
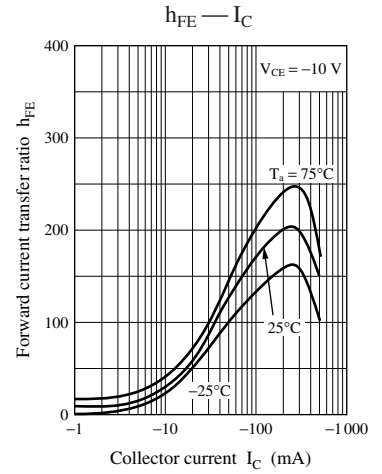
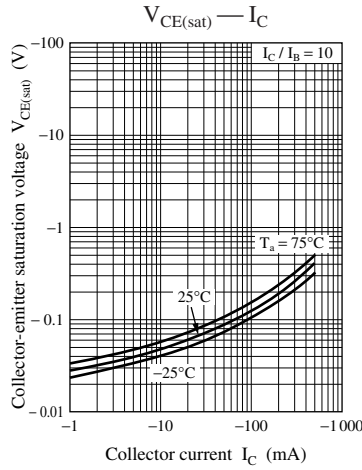
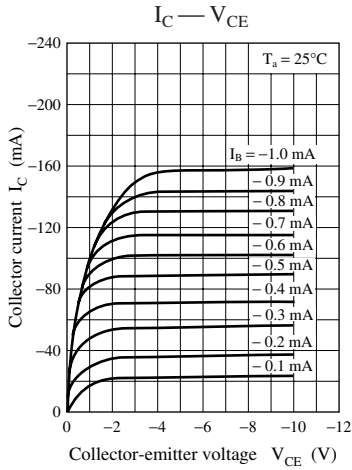
Parameter		Symbol	Conditions	Min	Typ	Max	Unit	
Forward current transfer ratio	UNR4121	h_{FE}	$V_{CE} = -10\text{ V}, I_C = -100\text{ mA}$	40			—	
	UNR4122/412Y			50				
	UNR4123/4124			60				
	UNR412X			20				
Collector-emitter saturation voltage		$V_{CE(sat)}$	$I_C = -100\text{ mA}, I_B = -5\text{ mA}$			-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}	$V_{CC} = -5\text{ V}, V_B = -0.5\text{ V}, R_L = 500\ \Omega$	-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			
	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.

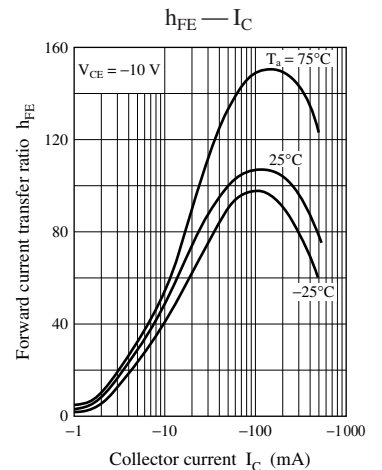
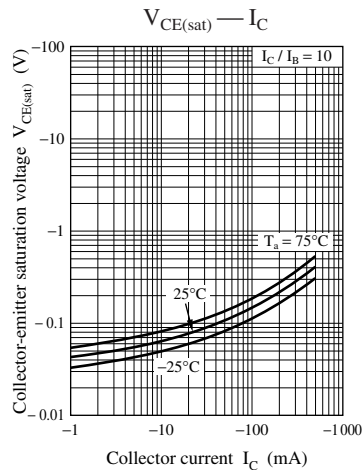
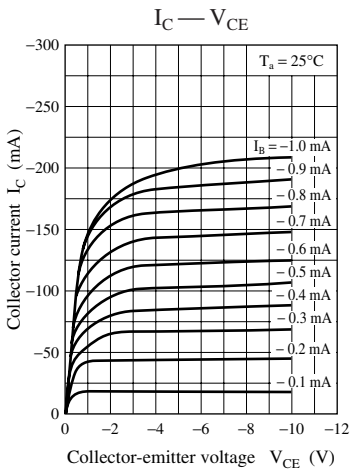
Common characteristics chart

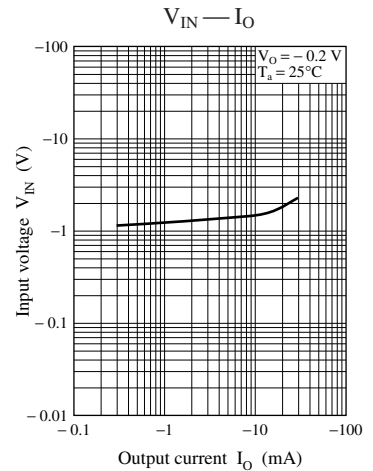
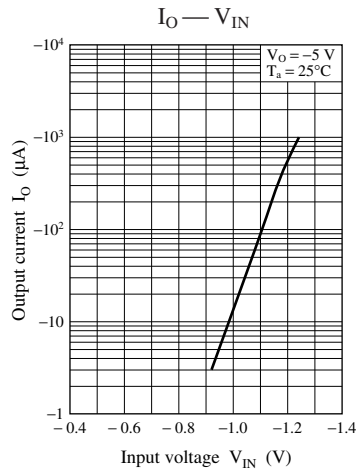
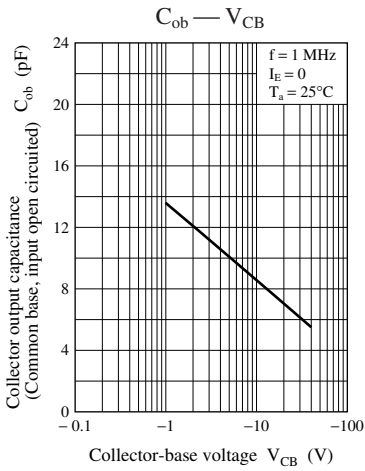


Characteristics charts of UNR4121

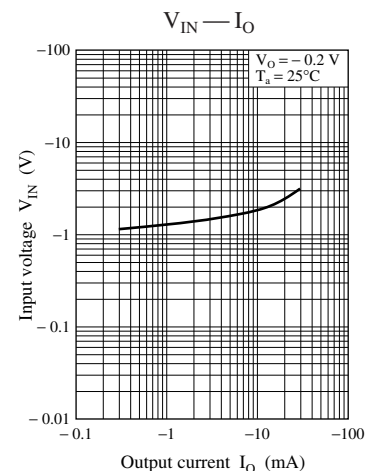
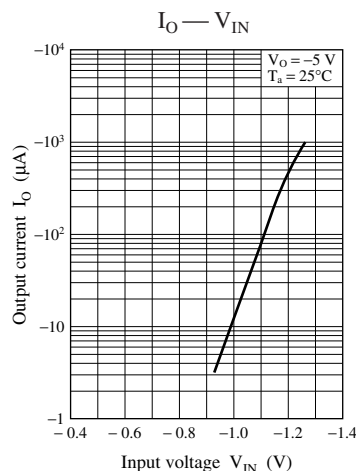
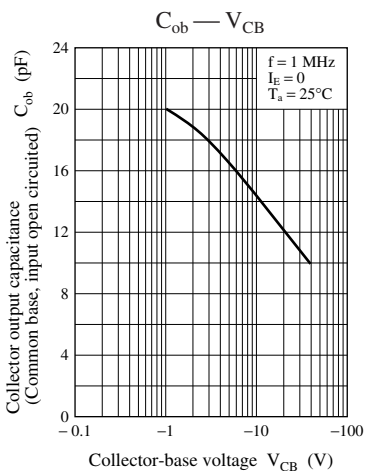
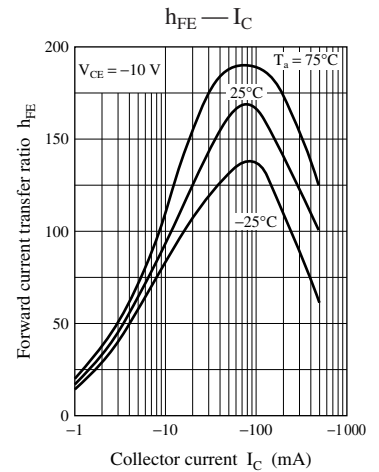
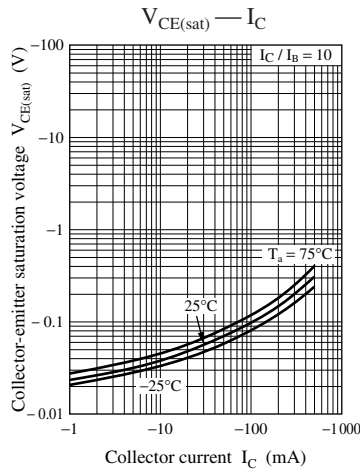
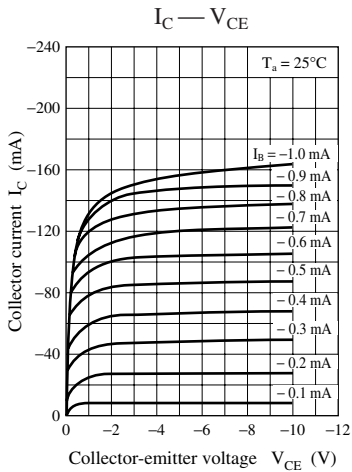


Characteristics charts of UNR4122

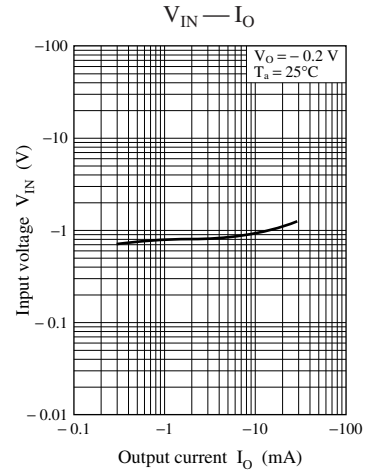
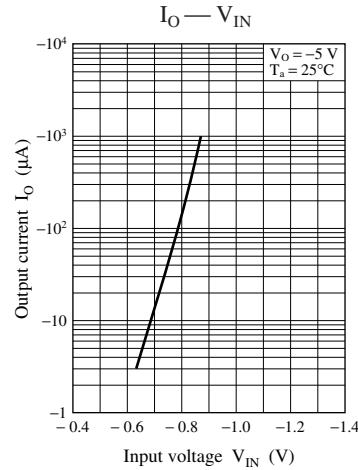
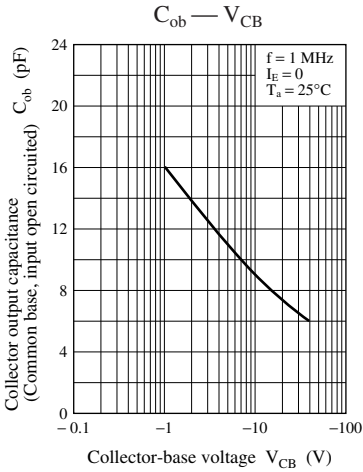
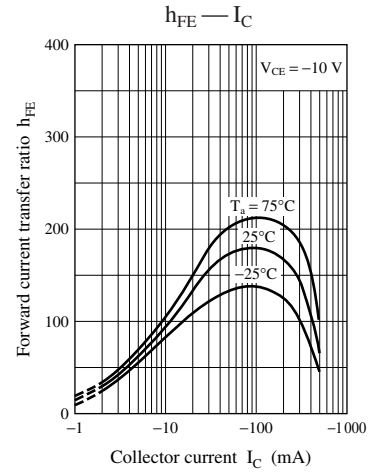
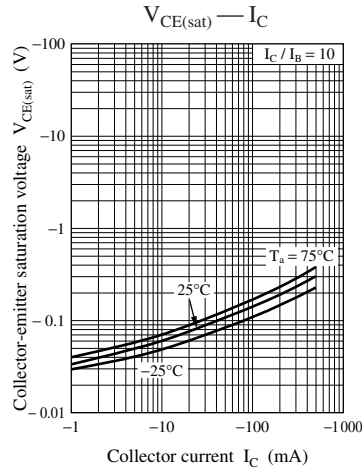
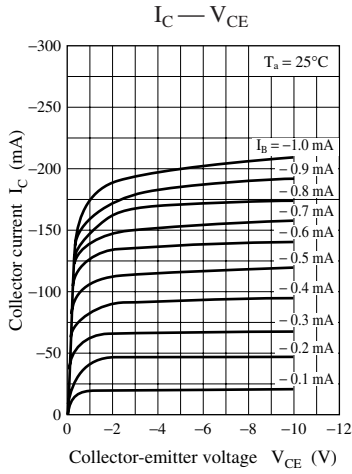




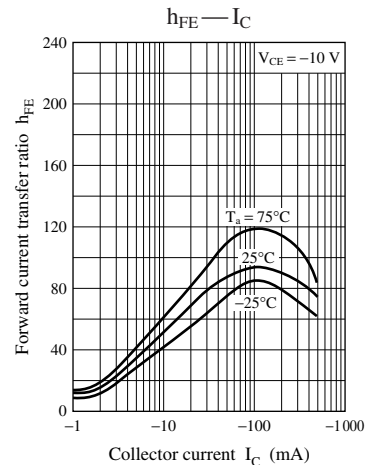
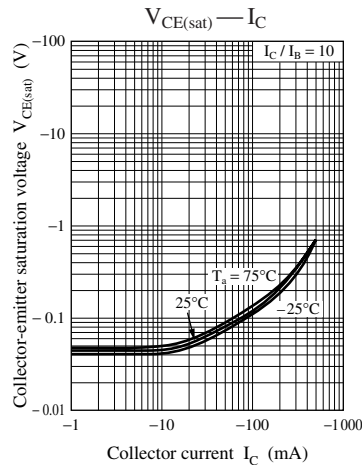
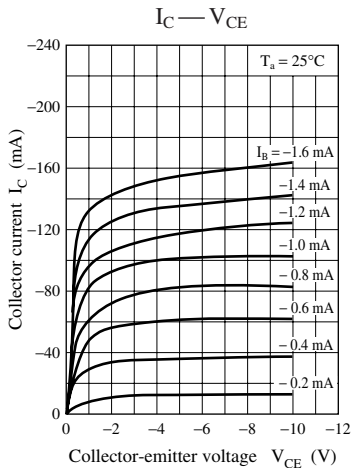
Characteristics charts of UNR4123

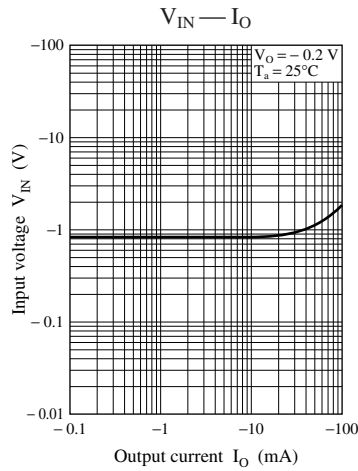
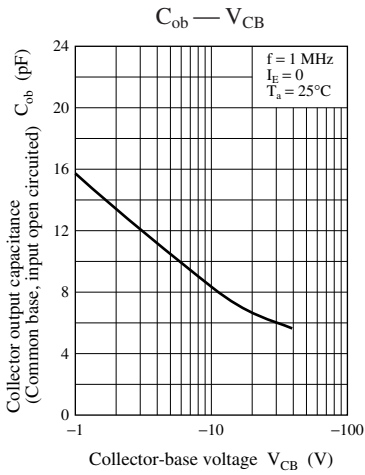


Characteristics charts of UNR4124

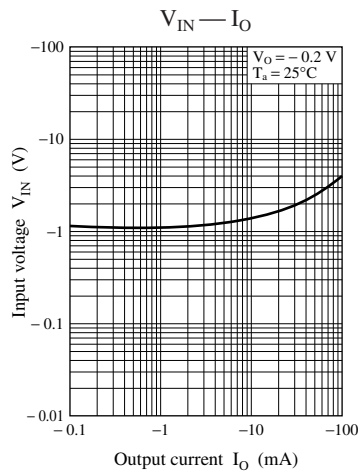
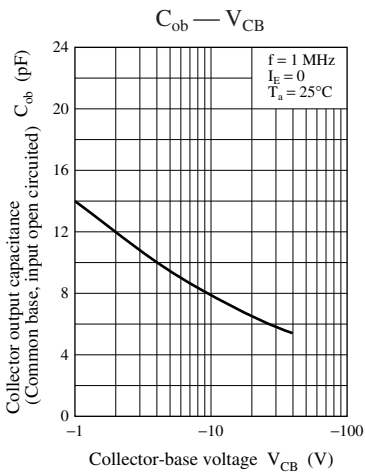
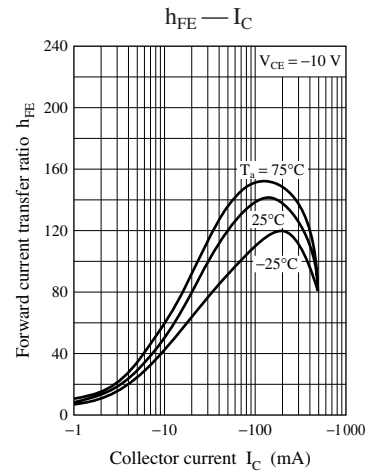
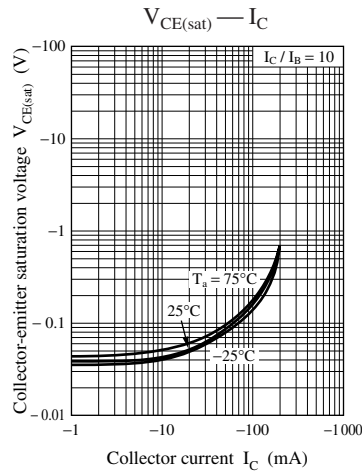
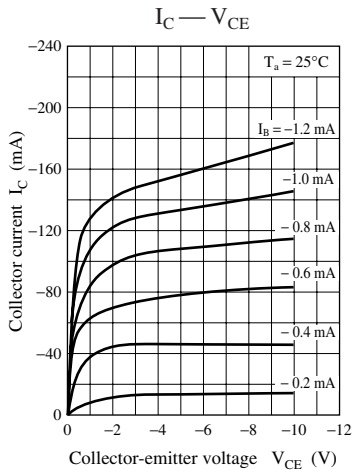


Characteristics charts of UNR412X





Characteristics charts of UNR412Y



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