

UNR6121/6122/6123/6124/612X/612Y (UN6121/6122/6123/6124/612X/612Y)

Silicon PNP epitaxial planer transistor

For digital circuits

Features

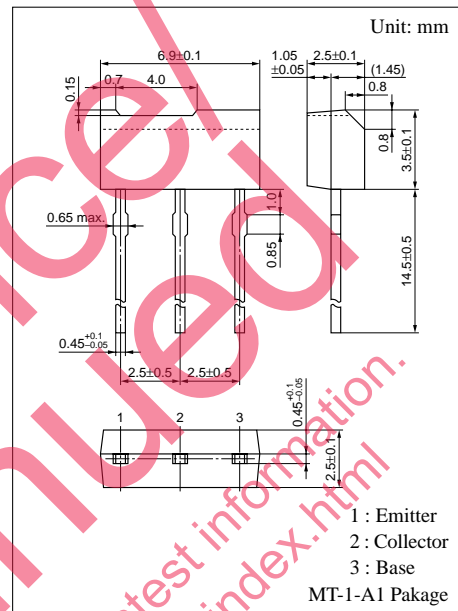
- Costs can be reduced through downsizing of the equipment and reduction of the number of parts.
- MT-1 type package, allowing supply with the radial taping.

Resistance by Part Number

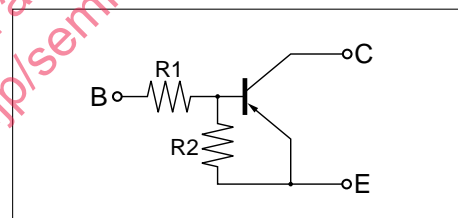
	(R ₁)	(R ₂)
• UNR6121	2.2kΩ	2.2kΩ
• UNR6122	4.7kΩ	4.7kΩ
• UNR6123	10kΩ	10kΩ
• UNR6124	2.2kΩ	10kΩ
• UNR612X	0.27kΩ	5kΩ
• UNR612Y	3.1kΩ	4.6kΩ

Absolute Maximum Ratings (T_a=25°C)

Parameter	Symbol	Ratings	Unit
Collector to base voltage	V _{CB0}	-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

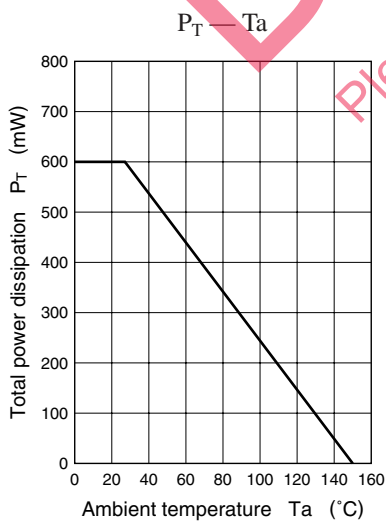


Note) The Part numbers in the Parenthesis show conventional part number.

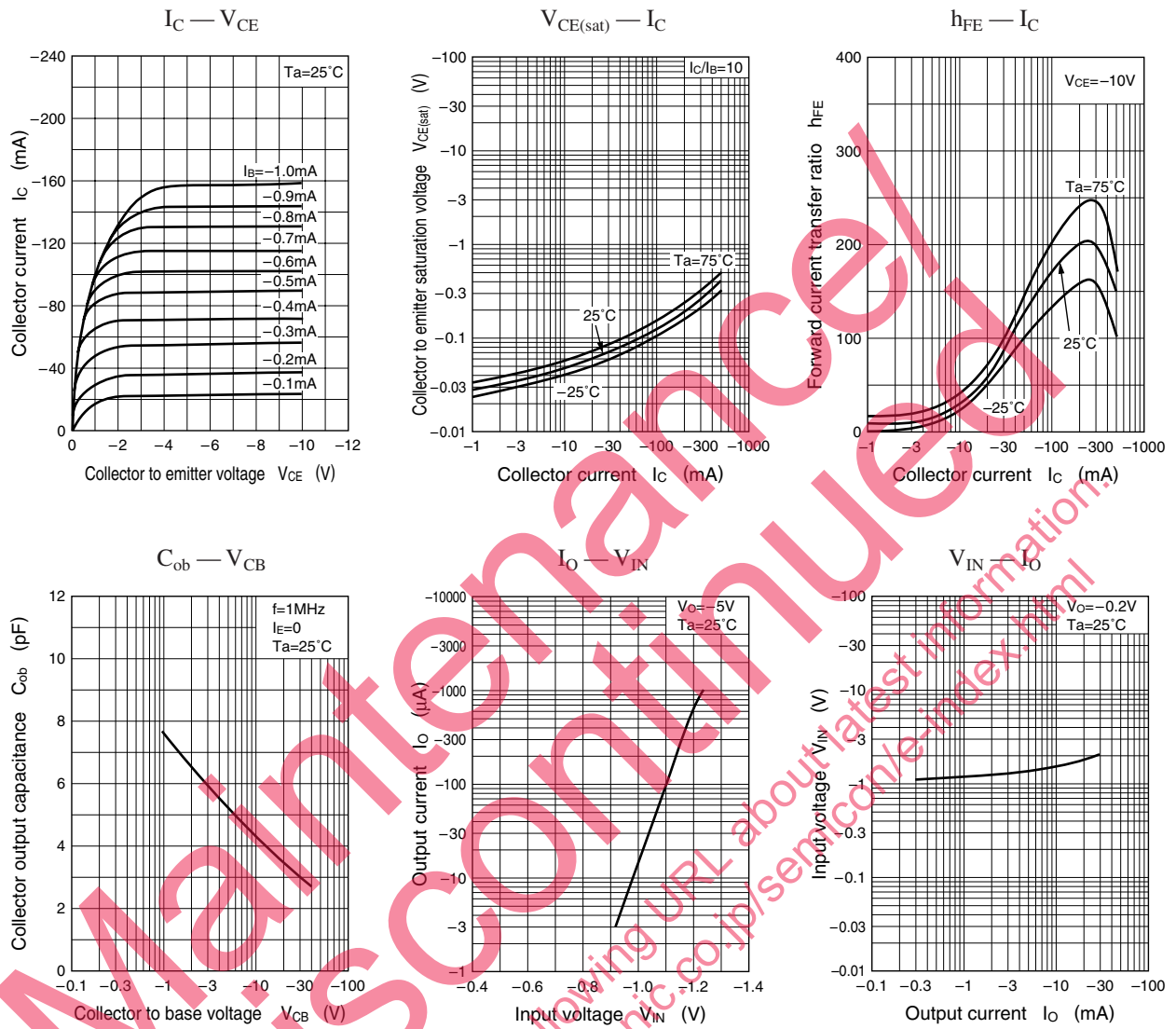
Electrical Characteristics (Ta=25°C)

Parameter		Symbol	Conditions	min	typ	max	Unit	
Collector cutoff current		I _{CBO}	V _{CB} = -50V, I _E = 0			-1	μA	
	UNR612X	I _{CBO}	V _{CB} = -50V, I _E = 0			-0.1		
Collector cutoff current		I _{CEO}	V _{CE} = -50V, I _B = 0			-1	μA	
	UNR612X	I _{CEO}	V _{CE} = -50V, I _B = 0			-0.5		
Emitter cutoff current	UNR6121	I _{EBO}	V _{EE} = -6V, I _C = 0			-5	mA	
	UNR6122/612X/612Y					-2		
	UNR6123/6124					-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	UNR6121	h _{FE}	V _{CE} = -10V, I _C = -100mA	40				
	UNR6122/612Y			50				
	UNR6123/6124			60				
	UNR612X			20				
Collector to emitter saturation voltage		V _{CE(sat)}	I _C = -100mA, I _B = -5mA			-0.25	V	
		UNR612X	V _{CE(sat)}	I _C = -10mA, I _B = -0.3mA				0.25
		UNR612Y	V _{CE(sat)}	I _C = -50mA, I _B = -5mA				-0.15
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	
Transition frequency		f _T	V _{CB} = -10V, I _E = 50mA, f = 200MHz		80		MHz	
Input resistance	UNR6121	R ₁			2.2	(+30%)	kΩ	
	UNR6122				4.7			
	UNR6123				10			
	UNR612X				0.27			
	UNR612Y				3.1			
Resistance ratio		R ₁ /R ₂			0.8	1.0	1.2	
UNR6124				0.17	0.22	0.27		
UNR612X				0.043	0.054	0.065		
UNR612Y					0.67			

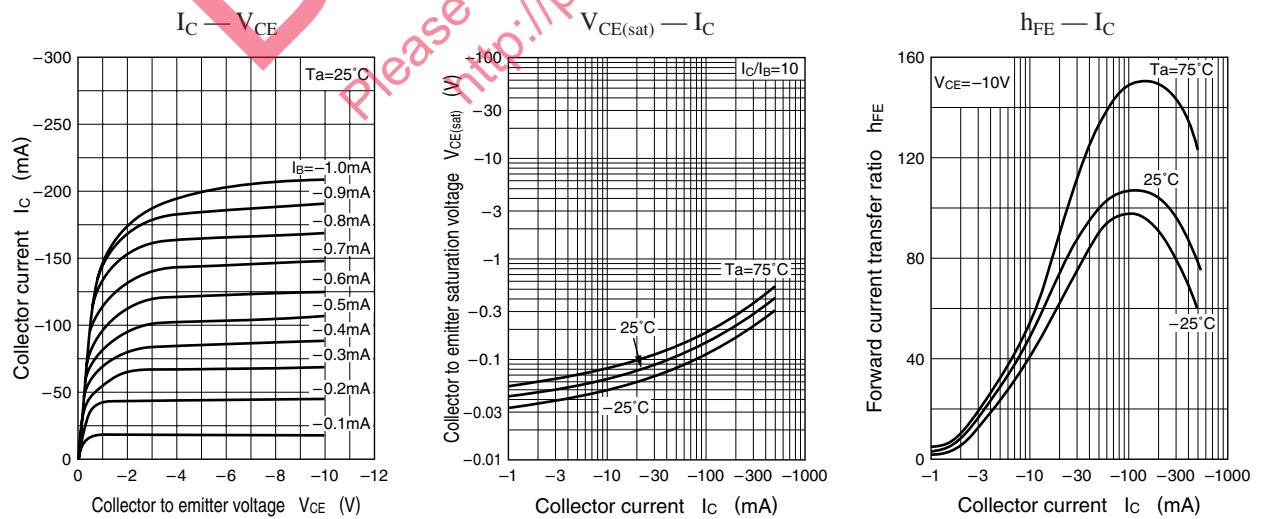
Common characteristics chart

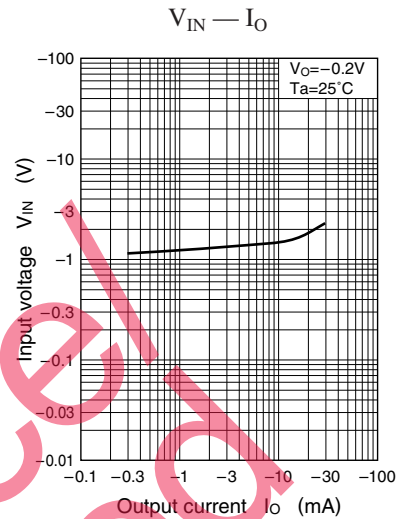
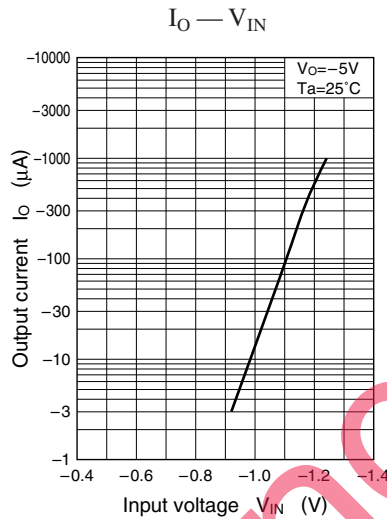
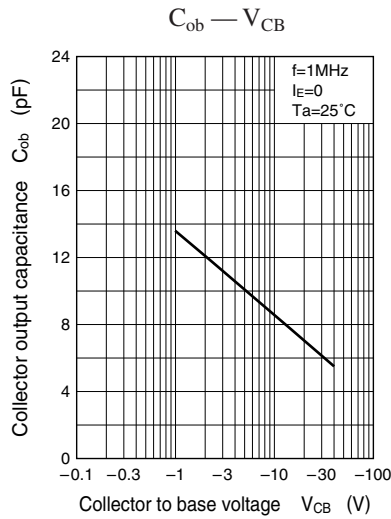


Characteristics charts of UNR6121

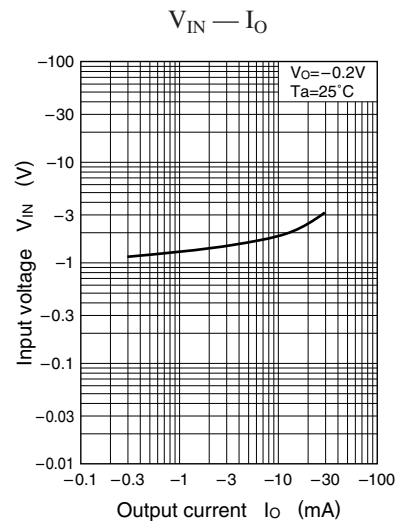
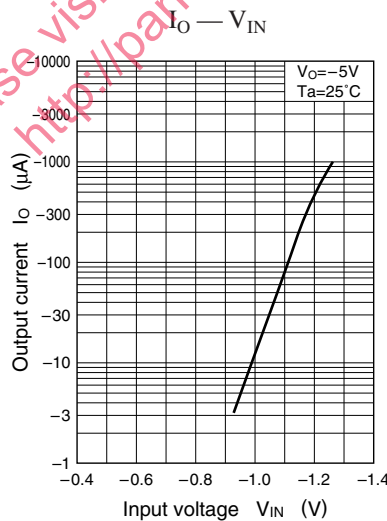
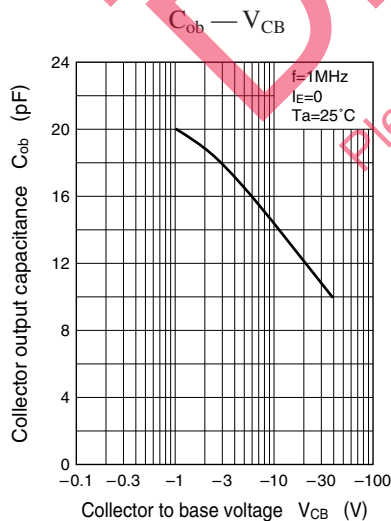
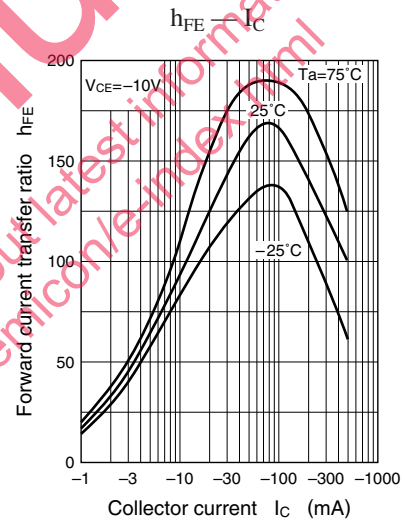
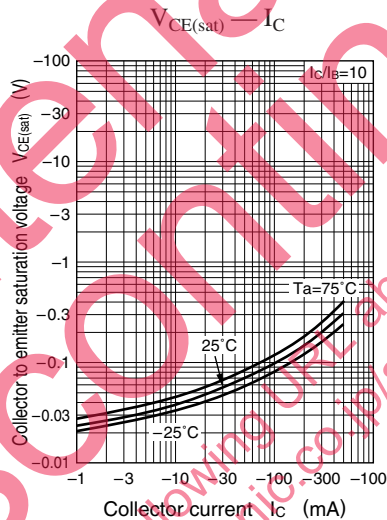
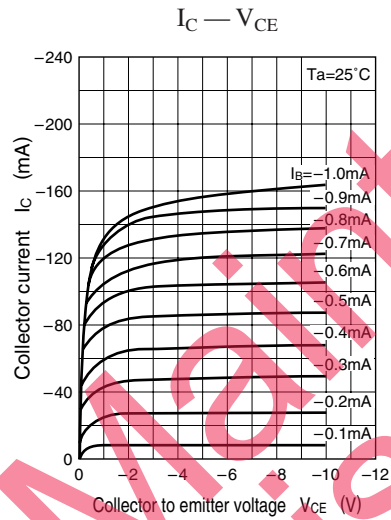


Characteristics charts of UNR6122

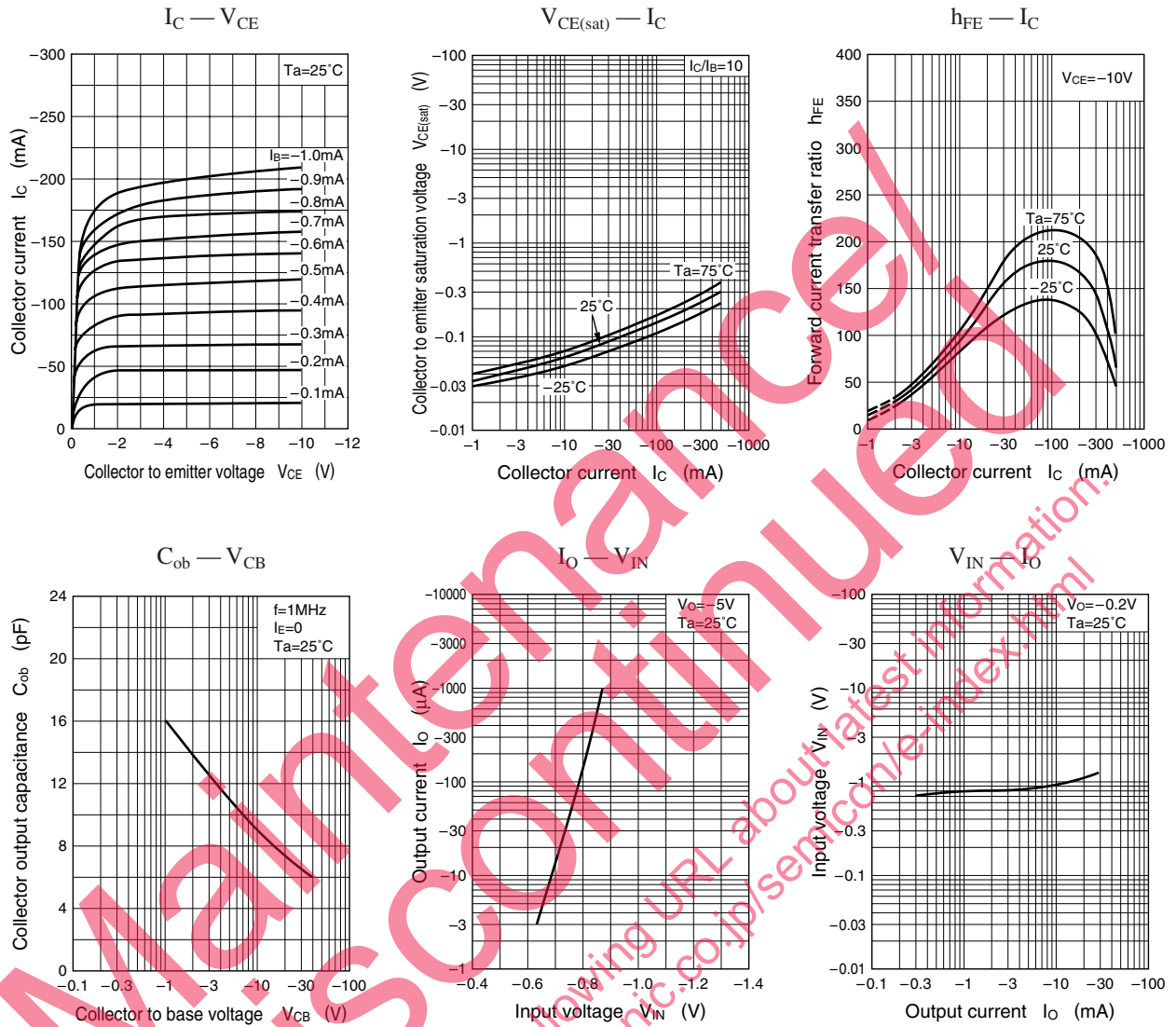




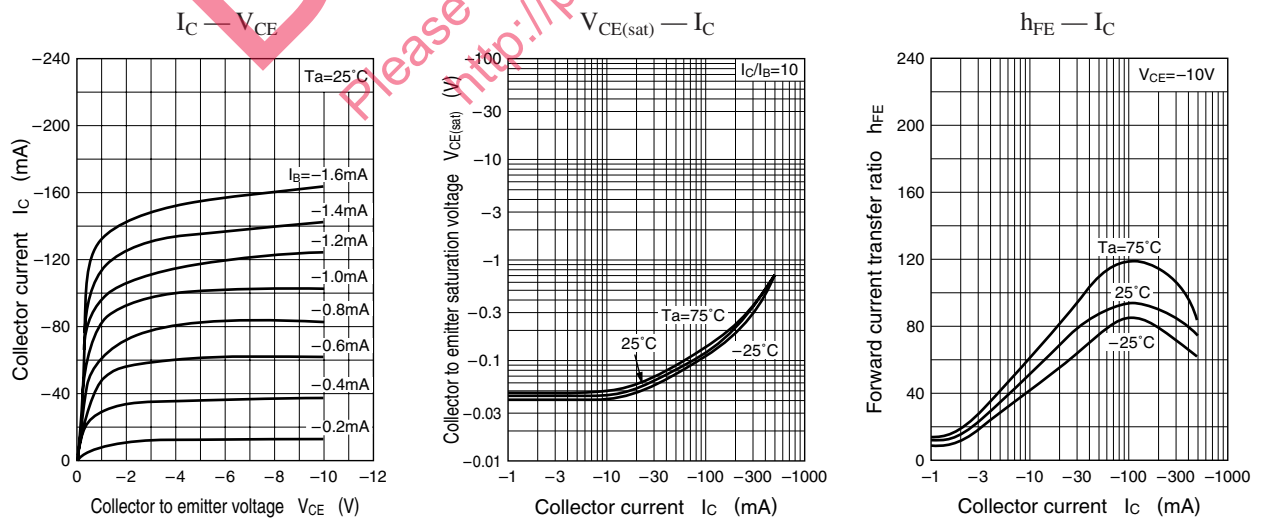
Characteristics charts of UNR6123

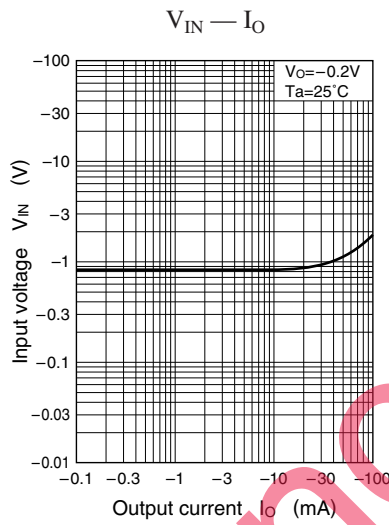
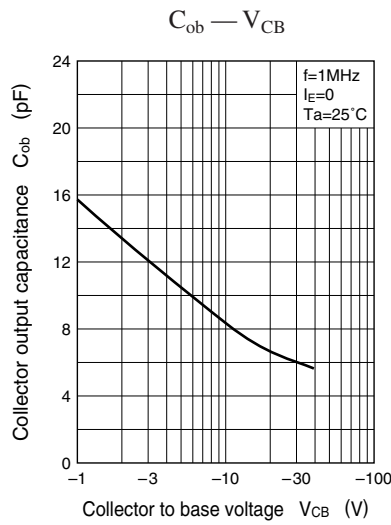


Characteristics charts of UNR6124

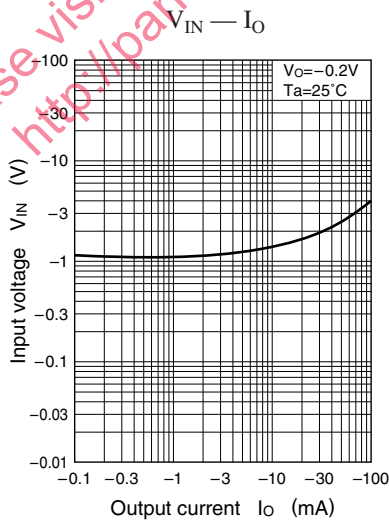
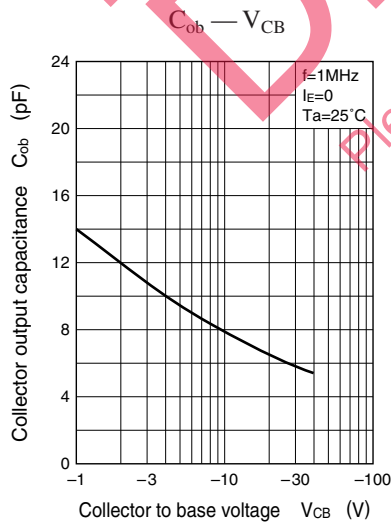
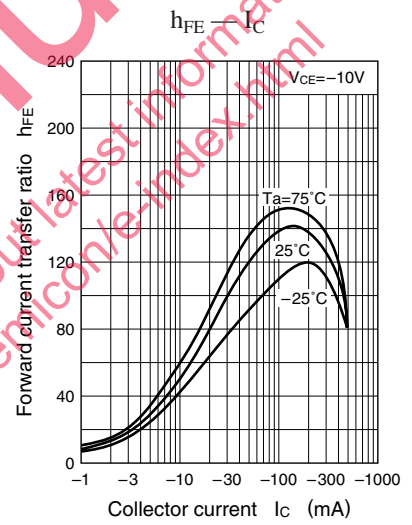
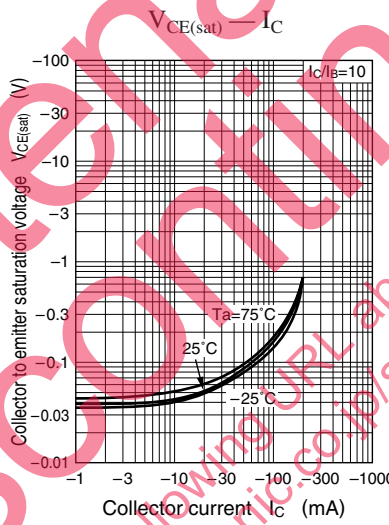
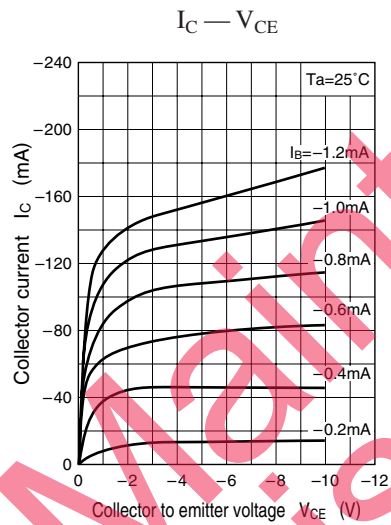


Characteristics charts of UNR612X





Characteristics charts of UNR612Y



Request for your special attention and precautions in using the technical information and semiconductors described in this book

- (1) If any of the products or technical information described in this book is to be exported or provided to non-residents, the laws and regulations of the exporting country, especially, those with regard to security export control, must be observed.
- (2) The technical information described in this book is intended only to show the main characteristics and application circuit examples of the products, and no license is granted under any intellectual property right or other right owned by our company or any other company. Therefore, no responsibility is assumed by our company as to the infringement upon any such right owned by any other company which may arise as a result of the use of technical information described in this book.
- (3) The products described in this book are intended to be used for standard applications or general electronic equipment (such as office equipment, communications equipment, measuring instruments and household appliances).
Consult our sales staff in advance for information on the following applications:
 - Special applications (such as for airplanes, aerospace, automobiles, traffic control equipment, combustion equipment, life support systems and safety devices) in which exceptional quality and reliability are required, or if the failure or malfunction of the products may directly jeopardize life or harm the human body.
 - Any applications other than the standard applications intended.
- (4) The products and product specifications described in this book are subject to change without notice for modification and/or improvement. At the final stage of your design, purchasing, or use of the products, therefore, ask for the most up-to-date Product Standards in advance to make sure that the latest specifications satisfy your requirements.
- (5) When designing your equipment, comply with the range of absolute maximum rating and the guaranteed operating conditions (operating power supply voltage and operating environment etc.). Especially, please be careful not to exceed the range of absolute maximum rating on the transient state, such as power-on, power-off and mode-switching. Otherwise, we will not be liable for any defect which may arise later in your equipment.
 - Even when the products are used within the guaranteed values, take into the consideration of incidence of break down and failure mode, possible to occur to semiconductor products. Measures on the systems such as redundant design, arresting the spread of fire or preventing glitch are recommended in order to prevent physical injury, fire, social damages, for example, by using the products.
- (6) Comply with the instructions for use in order to prevent breakdown and characteristics change due to external factors (ESD, EOS, thermal stress and mechanical stress) at the time of handling, mounting or at customer's process. When using products for which damp-proof packing is required, satisfy the conditions, such as shelf life and the elapsed time since first opening the packages.
- (7) This book may be not reprinted or reproduced whether wholly or partially, without the prior written permission of Matsushita Electric Industrial Co., Ltd.