

**UNR6111/6112/6113/6114/6115/6116/6117/  
6118/6119/6110/611D/611E/611F/611H/611L  
(UN6111/6112/6113/6114/6115/6116/6117/6118/6119/  
6110/611D/611E/611F/611H/611L)**

Silicon PNP epitaxial planer transistor

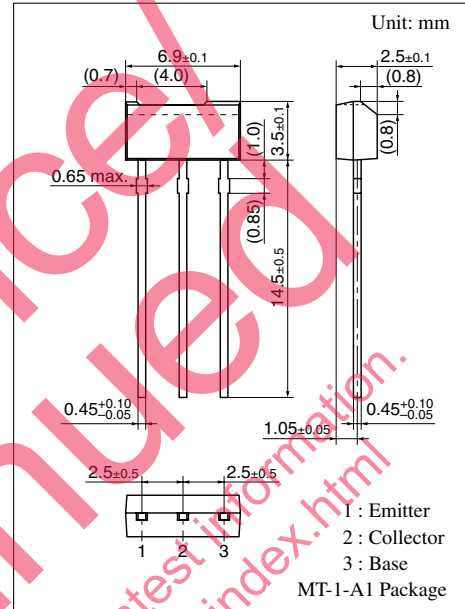
For digital circuits

■ Features

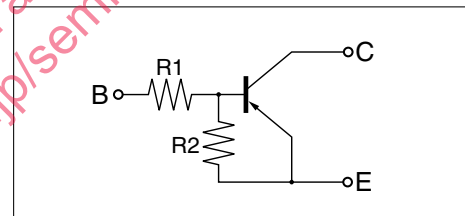
- Costs can be reduced through downsizing of the equipment and reduction of the number of parts.
- MT-1 type package, allowing supply with the radial taping.

■ Resistance by Part Number

	(R <sub>1</sub> )	(R <sub>2</sub> )
• UNR6111	10kΩ	10kΩ
• UNR6112	22kΩ	22kΩ
• UNR6113	47kΩ	47kΩ
• UNR6114	10kΩ	47kΩ
• UNR6115	10kΩ	—
• UNR6116	4.7kΩ	—
• UNR6117	22kΩ	—
• UNR6118	0.51kΩ	5.1kΩ
• UNR6119	1kΩ	10kΩ
• UNR6110	47kΩ	—
• UNR611D	47kΩ	10kΩ
• UNR611E	47kΩ	22kΩ
• UNR611F	4.7kΩ	10kΩ
• UNR611H	2.2kΩ	10kΩ
• UNR611L	4.7kΩ	4.7kΩ



Internal Connection



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

Parameter	Symbol	Rating	Unit
Collector to base voltage	V <sub>CBO</sub>	-50	V
Collector to emitter voltage	V <sub>CEO</sub>	-50	V
Collector current	I <sub>C</sub>	-100	mA
Total power dissipation	P <sub>T</sub>	400	mW
Junction temperature	T <sub>j</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55 to +150	°C

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

UNR6111/6112/6113/6114/6115/6116/6117/  
Transistors with built-in Resistor 6118/6119/6110/611D/611E/611F/611H/611L

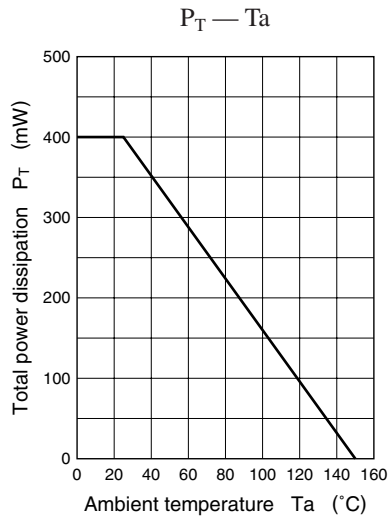
■ Electrical Characteristics (Ta=25°C)

Parameter		Symbol	Conditions	min	typ	max	Unit	
Collector cutoff current		I <sub>CBO</sub>	V <sub>CB</sub> = -50V, I <sub>E</sub> = 0			-0.1	μA	
		I <sub>CEO</sub>	V <sub>CE</sub> = -50V, I <sub>B</sub> = 0			-0.5	μA	
Emitter cutoff current	UNR6111	I <sub>EBO</sub>	V <sub>EB</sub> = -6V, I <sub>C</sub> = 0			-0.5	mA	
	UNR6112/6114/611E/611D					-0.2		
	UNR6113					-0.1		
	UNR6115/6116/6117/6110					-0.01		
	UNR611F/611H					-1.0		
	UNR6119					-1.5		
	UNR6118/611L					-2.0		
Collector to base voltage		V <sub>CBO</sub>	I <sub>C</sub> = -10μA, I <sub>E</sub> = 0	-50			V	
Collector to emitter voltage		V <sub>CEO</sub>	I <sub>C</sub> = -2mA, I <sub>B</sub> = 0	-50			V	
Forward current transfer ratio	UNR6111	h <sub>FE</sub>	V <sub>CE</sub> = -10V, I <sub>C</sub> = -5mA	35				
	UNR6112/611E			60				
	UNR6113/6114			80				
	UNR6115*/6116*/6117*/6110*			160		460		
	UNR611F/611D/6119/611H			30				
	UNR6118/611L			20				
Collector to emitter saturation voltage		V <sub>CE(sat)</sub>	I <sub>C</sub> = -10mA, I <sub>B</sub> = -0.3mA			-0.25	V	
Output voltage high level		V <sub>OH</sub>	V <sub>CC</sub> = -5V, V <sub>B</sub> = -0.5V, R <sub>L</sub> = 1kΩ	-4.9			V	
Output voltage low level		V <sub>OL</sub>	V <sub>CC</sub> = -5V, V <sub>B</sub> = -2.5V, R <sub>L</sub> = 1kΩ			-0.2	V	
			UNR6113	V <sub>CC</sub> = -5V, V <sub>B</sub> = -3.5V, R <sub>L</sub> = 1kΩ				-0.2
			UNR611D	V <sub>CC</sub> = -5V, V <sub>B</sub> = -10V, R <sub>L</sub> = 1kΩ				-0.2
			UNR611E	V <sub>CC</sub> = -5V, V <sub>B</sub> = -6V, R <sub>L</sub> = 1kΩ				-0.2
Transition frequency		f <sub>T</sub>	V <sub>CB</sub> = -10V, I <sub>E</sub> = 1mA, f = 200MHz		80		MHz	
Input resistance	UNR6111/6114/6115	R <sub>I</sub>		(-30%)	10	(+30%)	kΩ	
	UNR6112/6117				22			
	UNR6113/6110/611D/611E				47			
	UNR6116/611F/611L				4.7			
	UNR6118				0.51			
	UNR6119				1			
	UNR611H				2.2			
Resistance ratio	UNR6111/6112/6113/611L	R <sub>1</sub> /R <sub>2</sub>		0.8	1.0	1.2		
	UNR6114			0.17	0.21	0.25		
	UNR6118/6119			0.08	0.1	0.12		
	UNR611D			3.7	4.7	5.7		
	UNR611E			1.7	2.14	2.6		
	UNR611F			0.37	0.47	0.57		
	UNR611H			0.17	0.22	0.27		

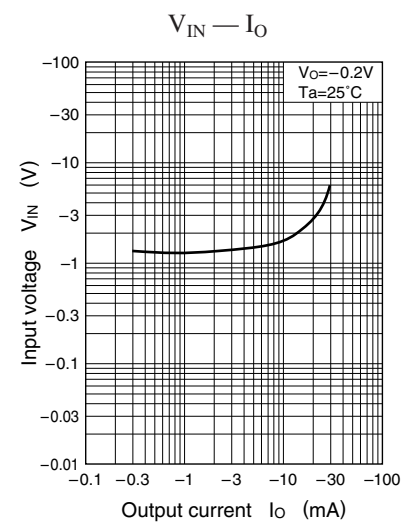
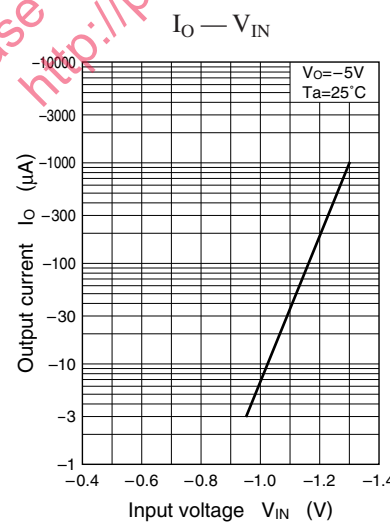
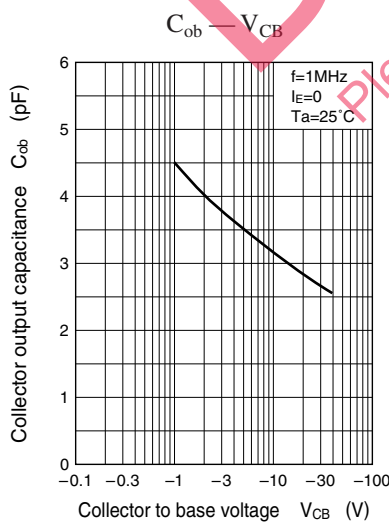
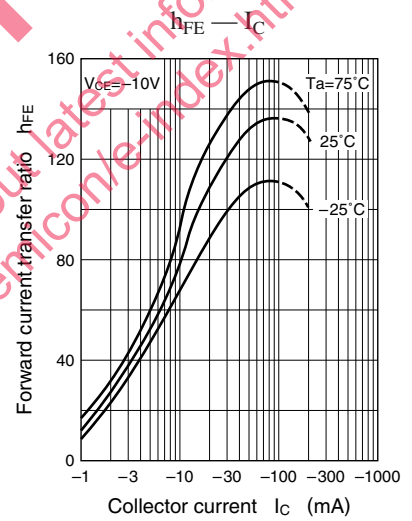
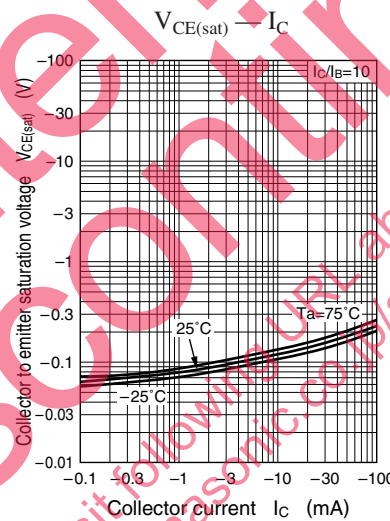
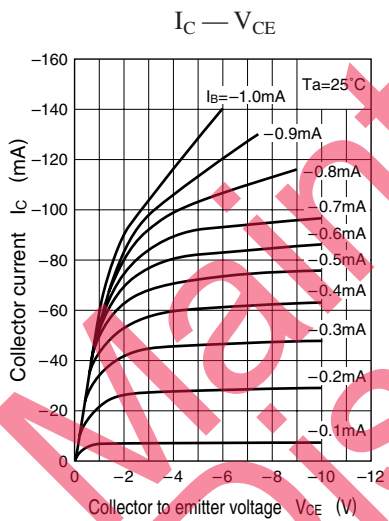
\* h<sub>FE</sub> rank classification (UNR6115/6116/6117/6110)

Rank	Q	R	S
h <sub>FE</sub>	160 to 260	210 to 340	290 to 460

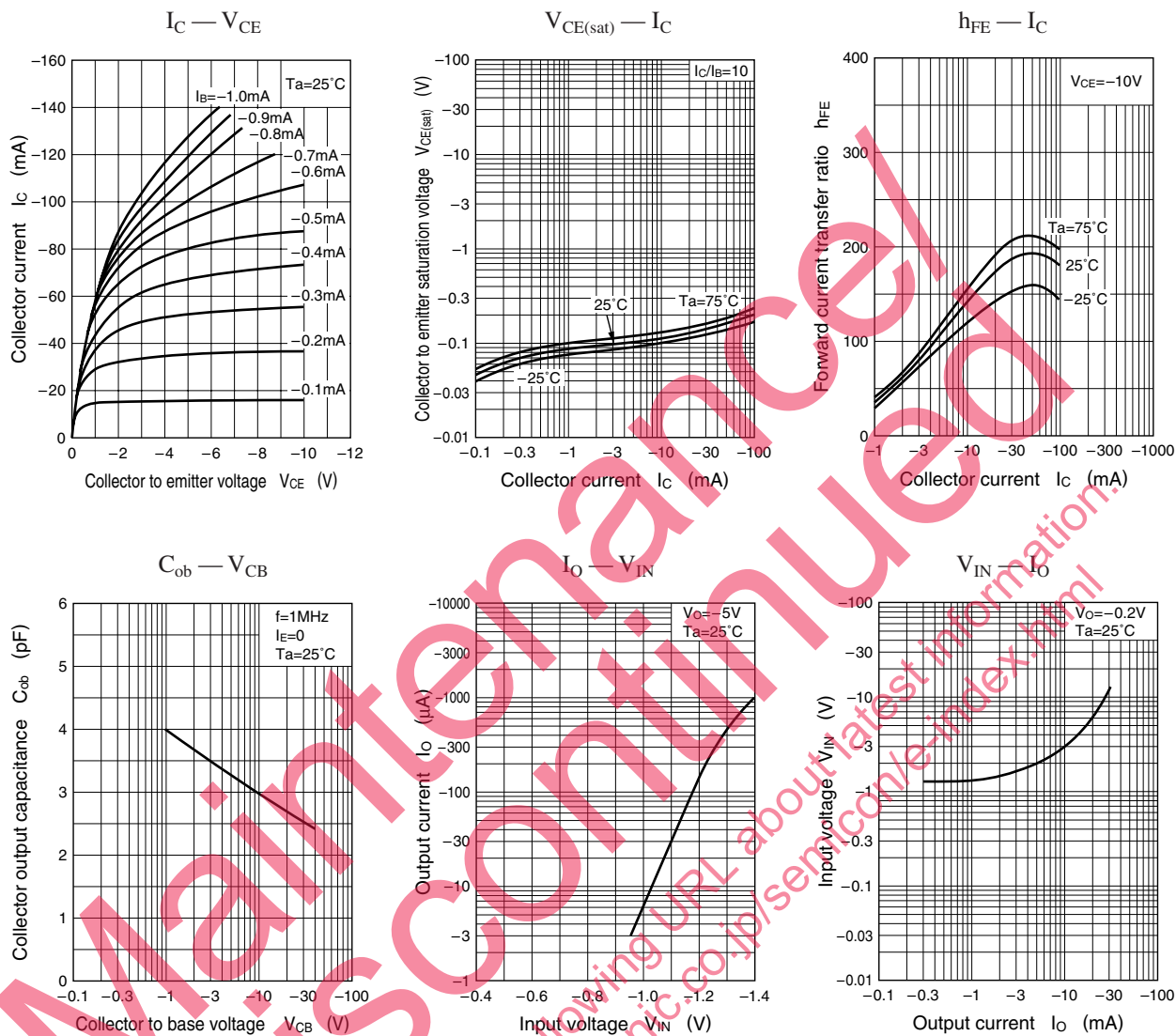
Common characteristics chart



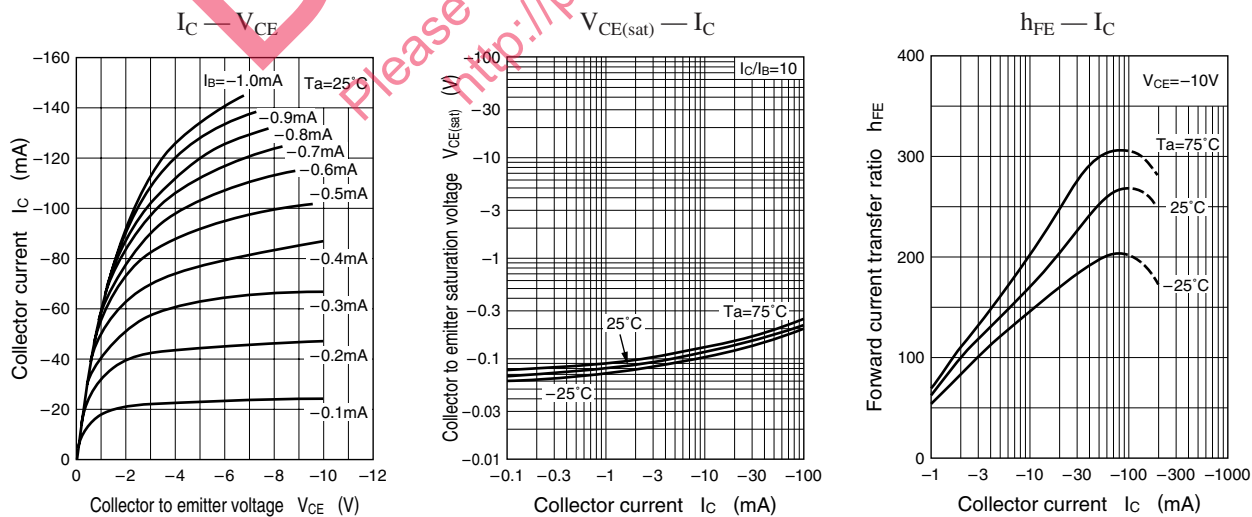
Characteristics charts of UNR6111

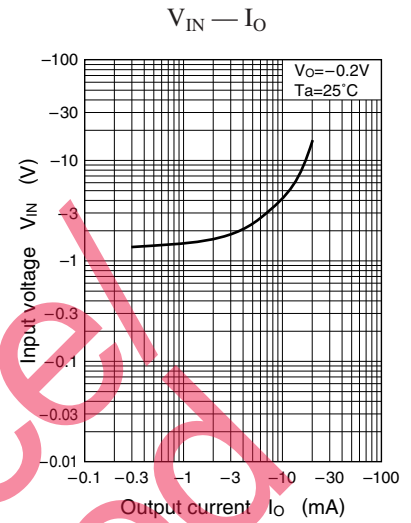
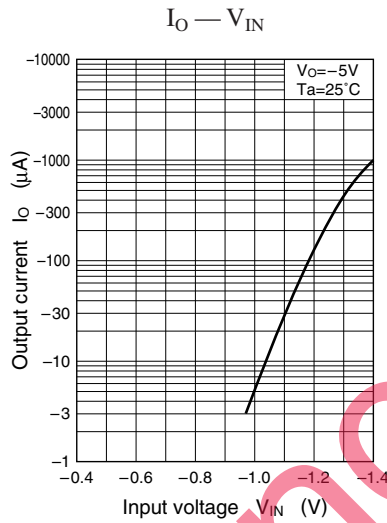
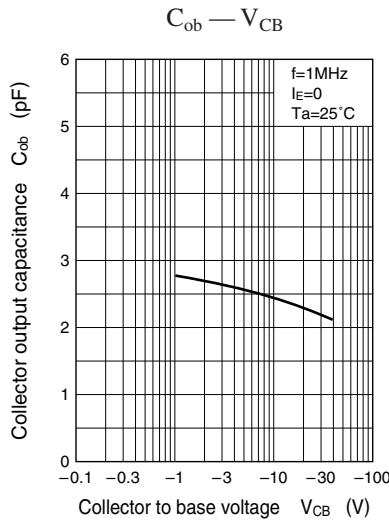


Characteristics charts of UNR6112

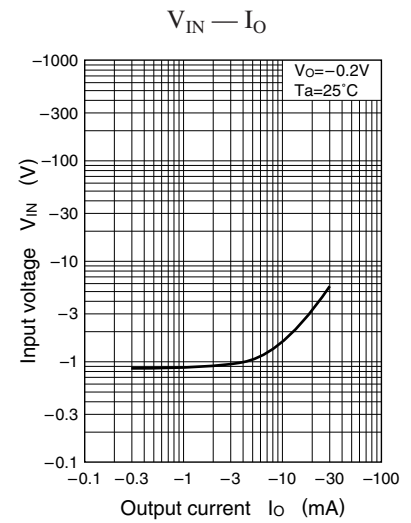
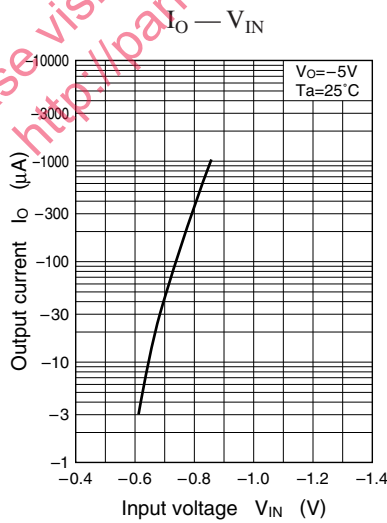
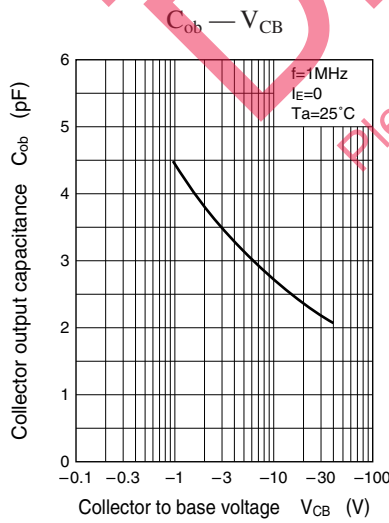
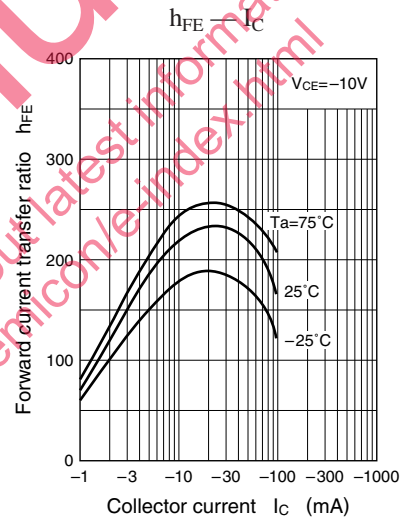
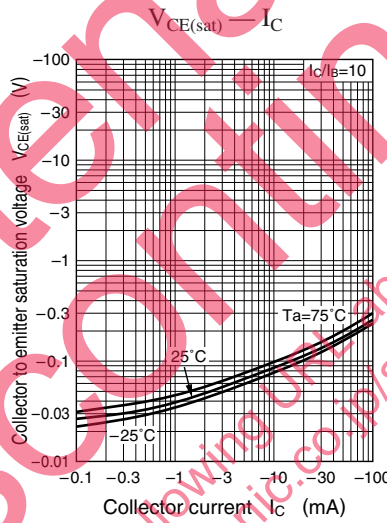
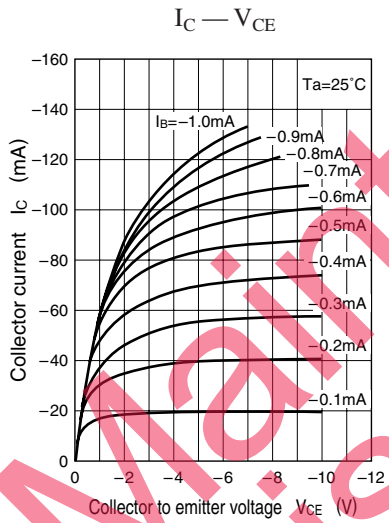


Characteristics charts of UNR6113

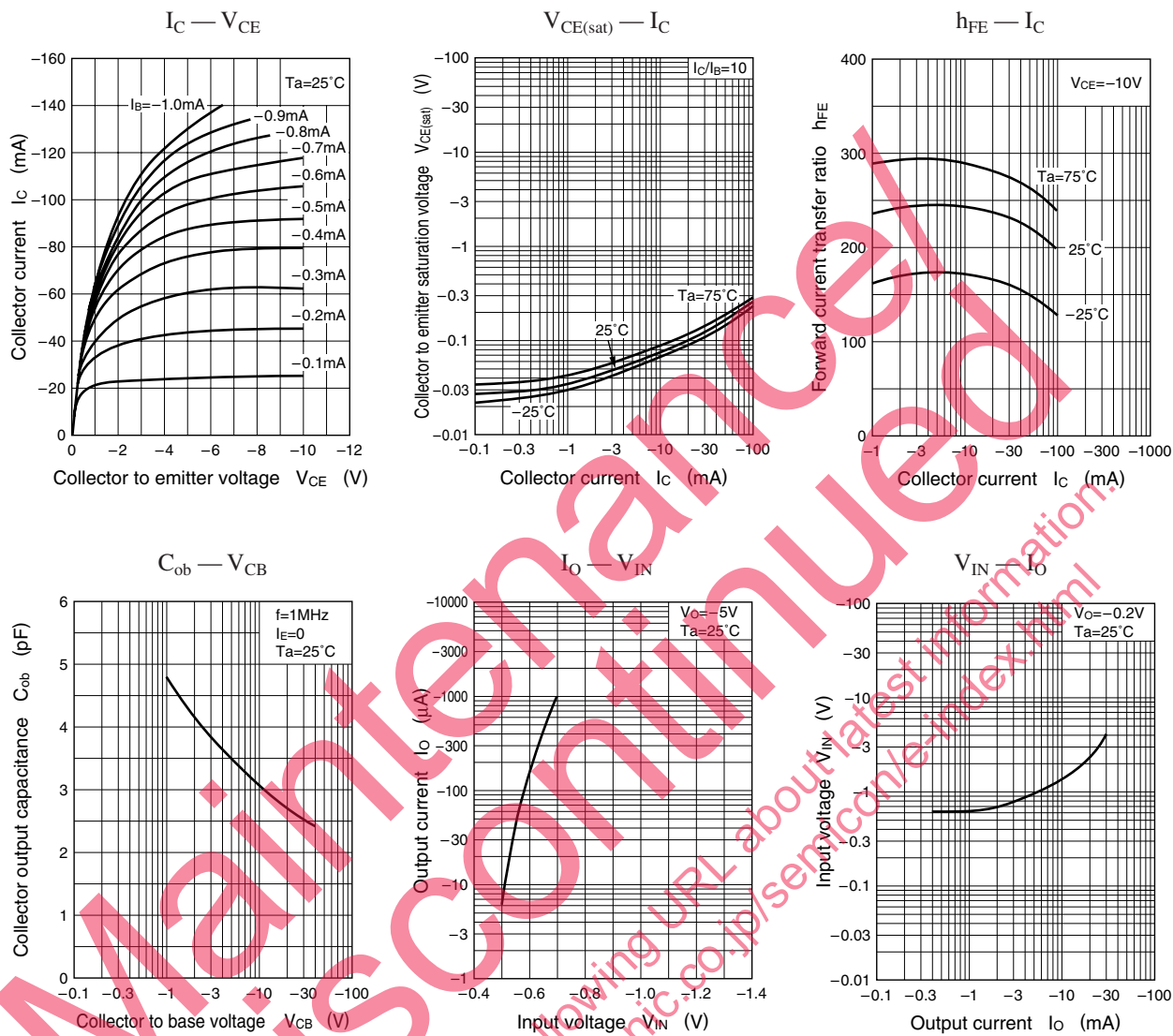




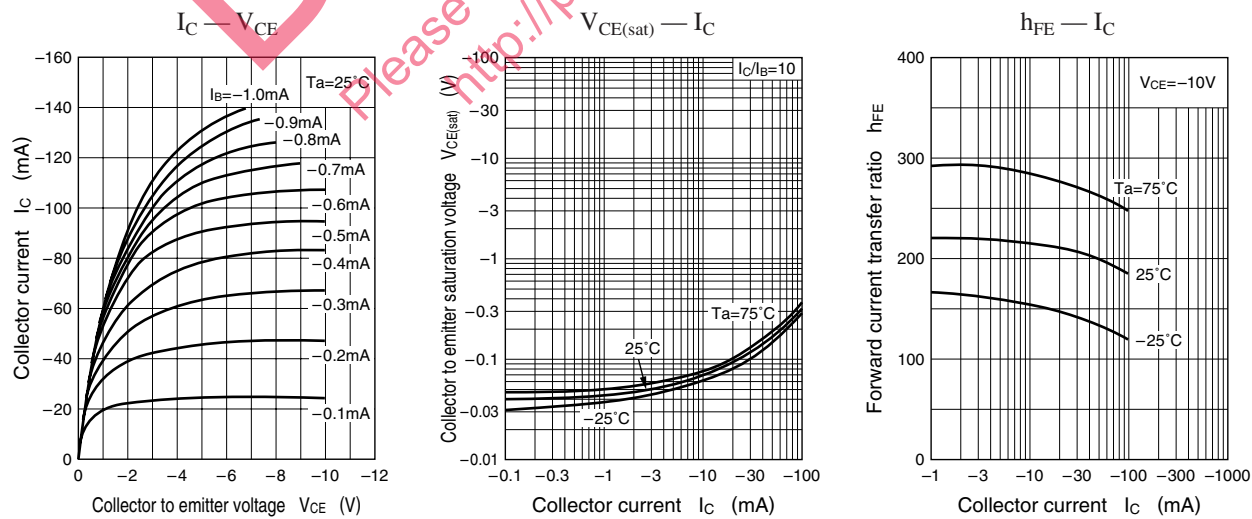
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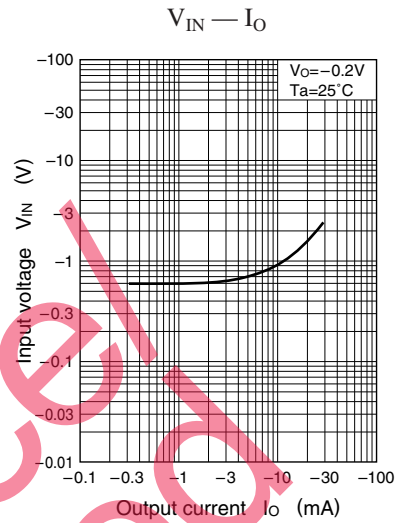
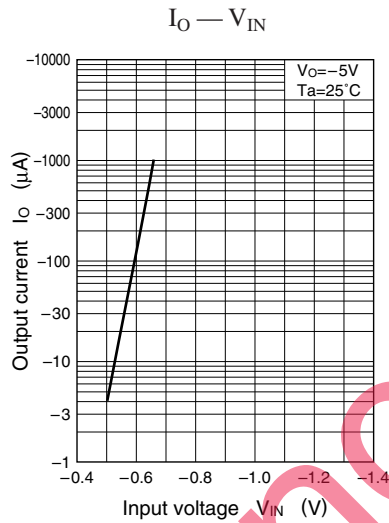
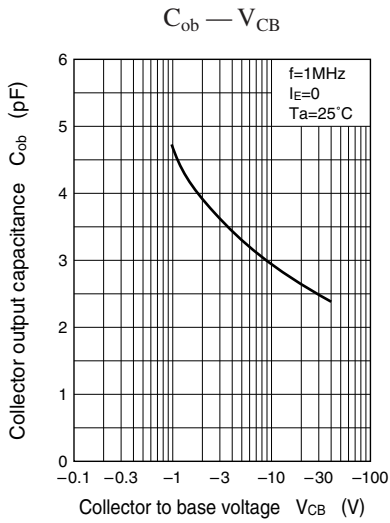


Characteristics charts of UNR6115

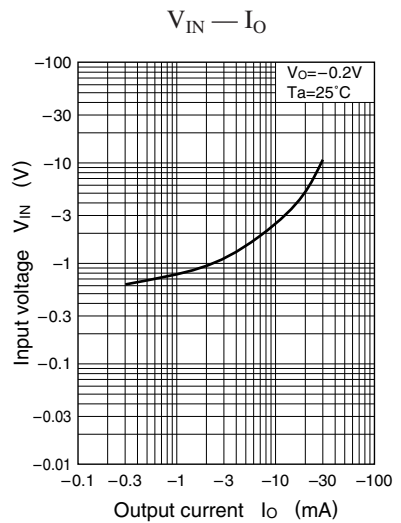
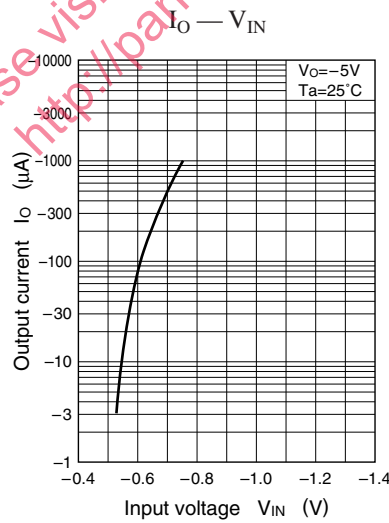
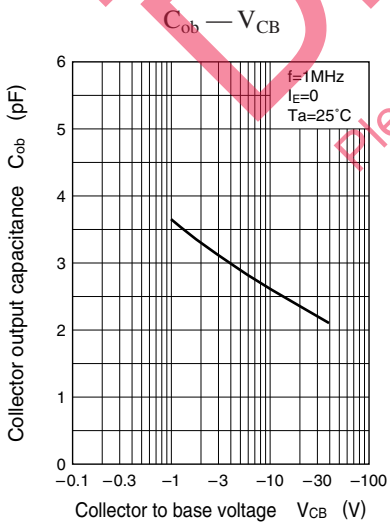
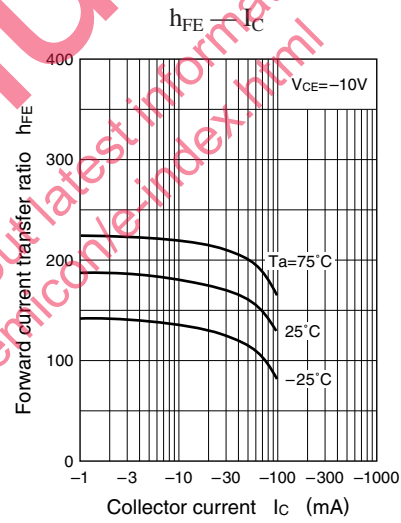
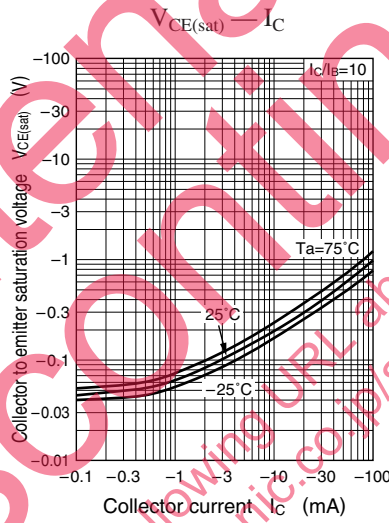
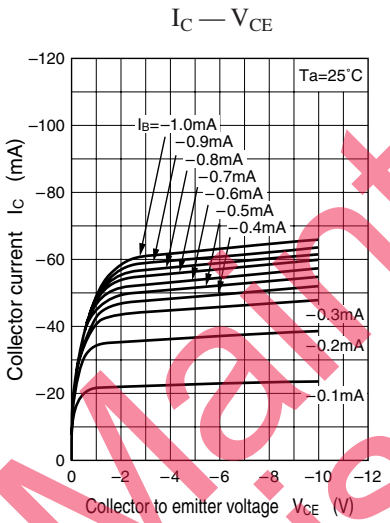


Characteristics charts of UNR6116

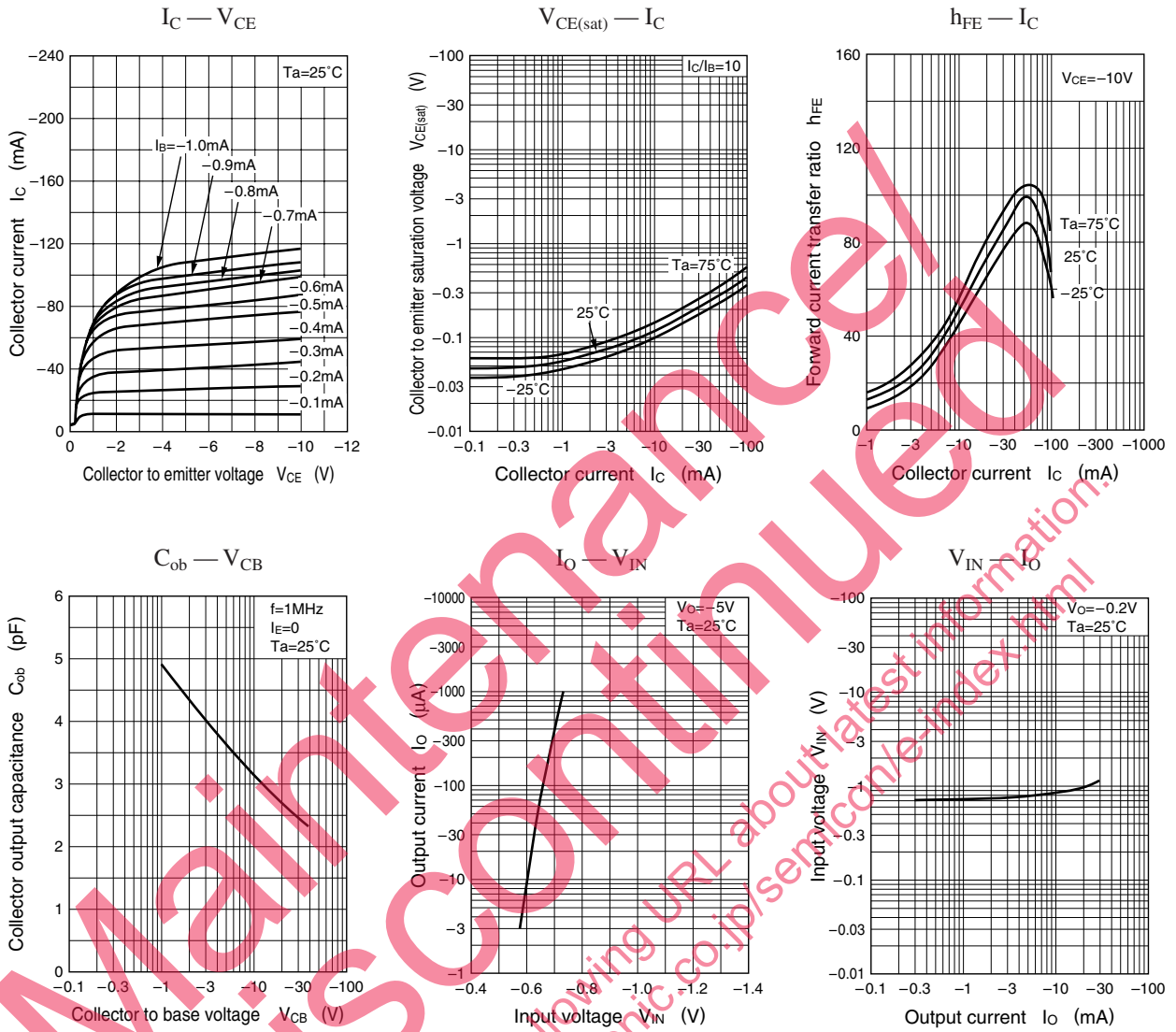




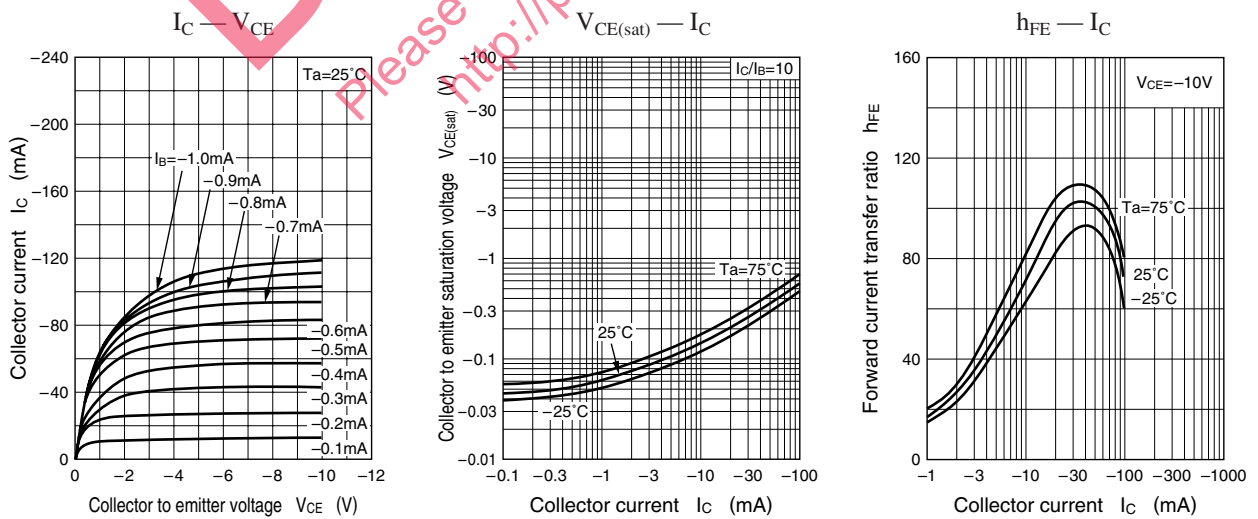
Characteristics charts of UNR6117



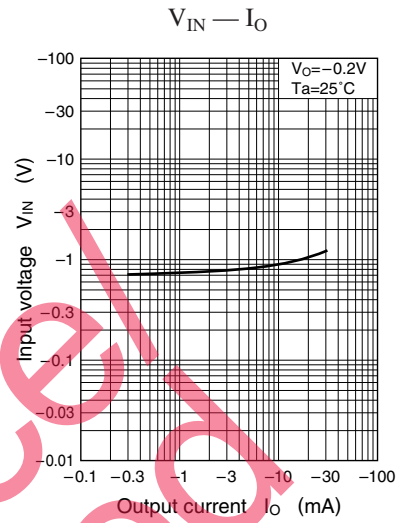
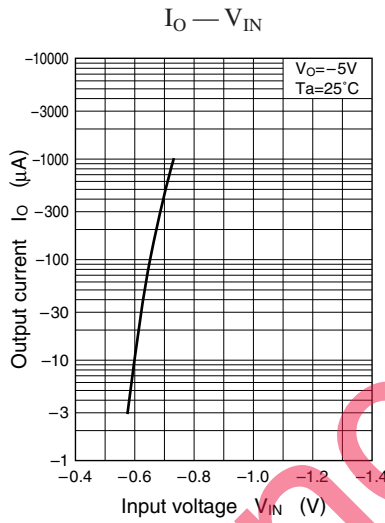
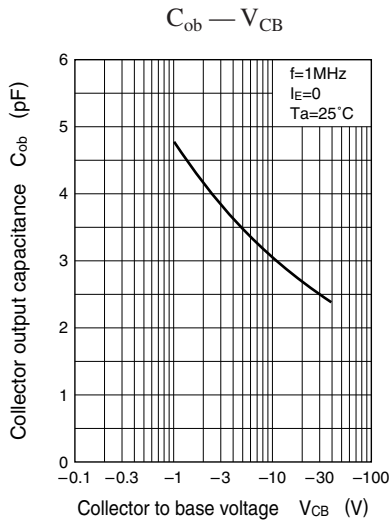
Characteristics charts of UNR6118



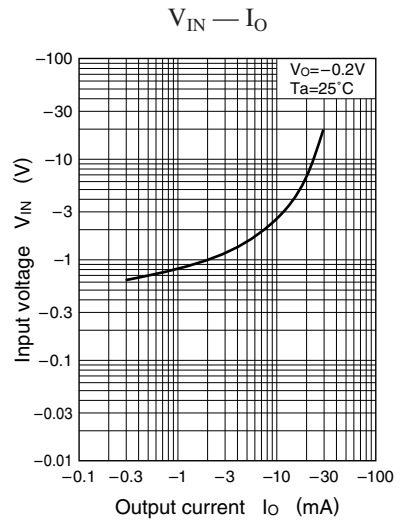
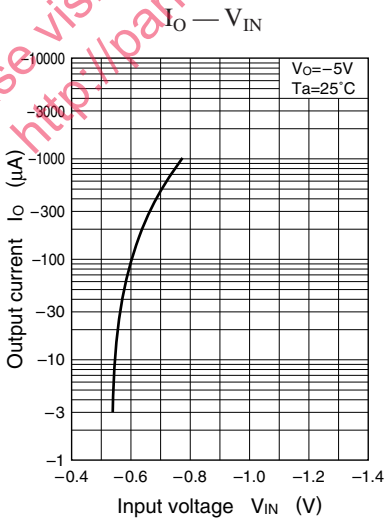
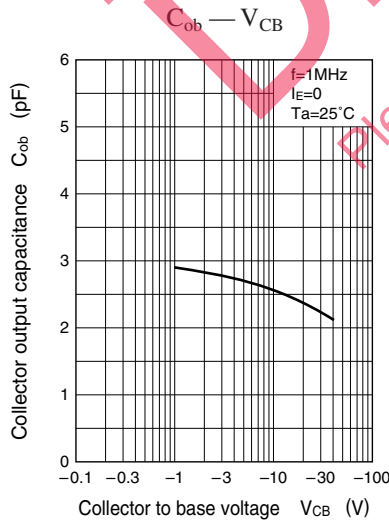
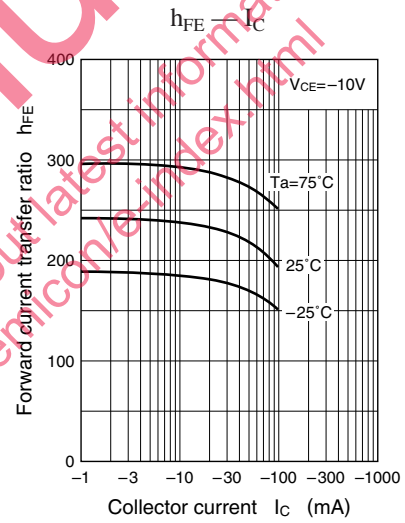
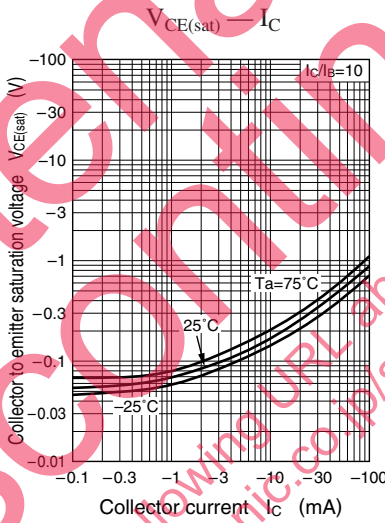
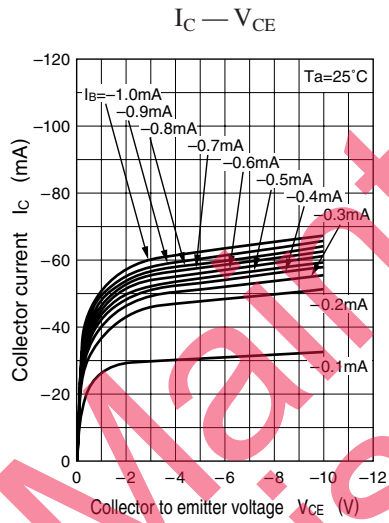
Characteristics charts of UNR6119



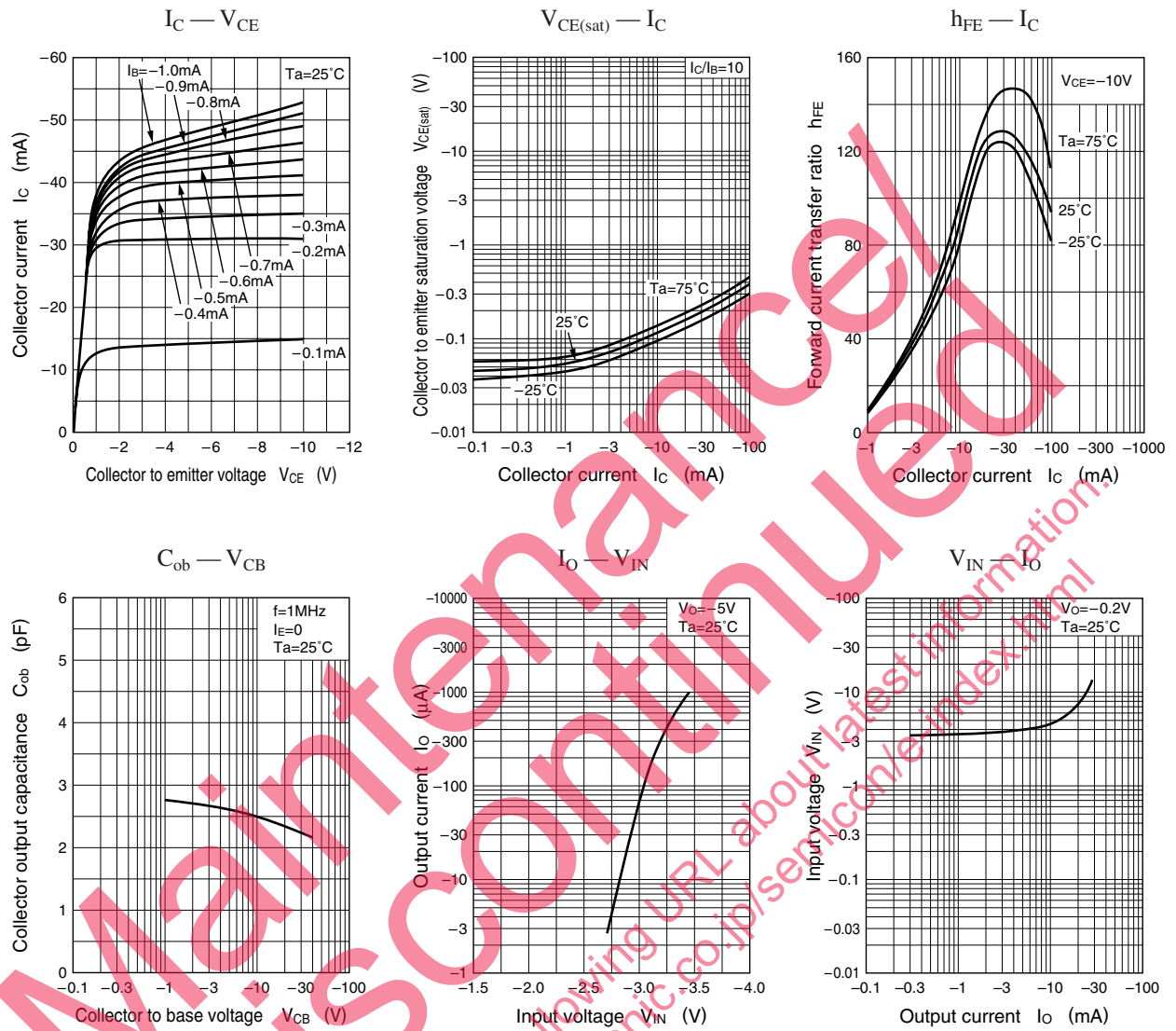




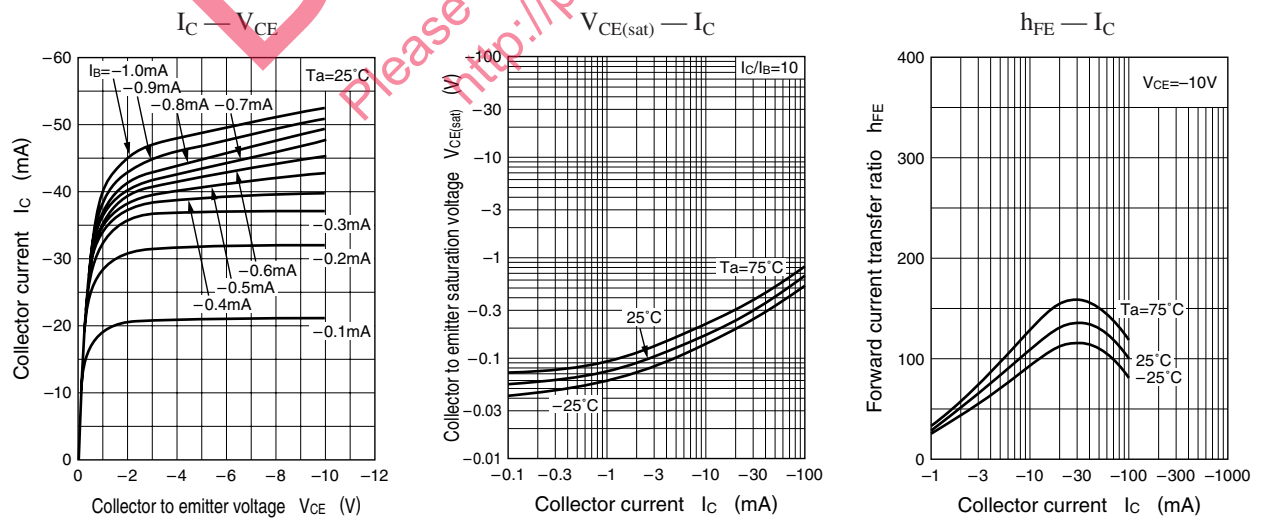
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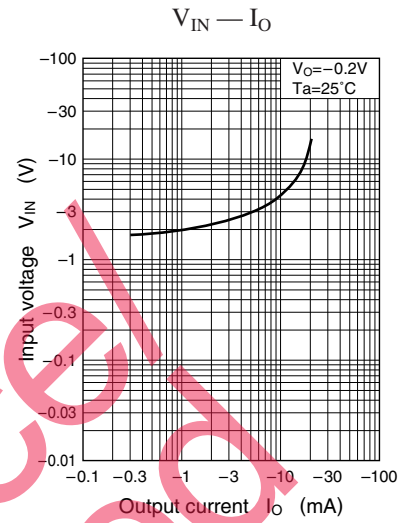
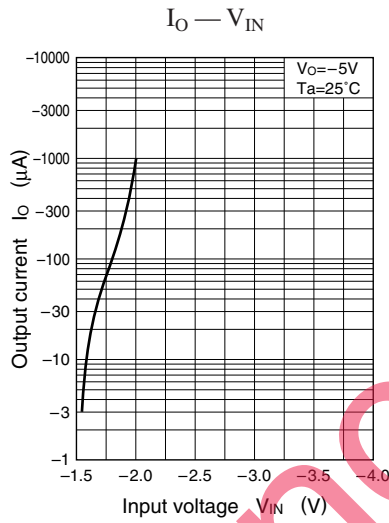
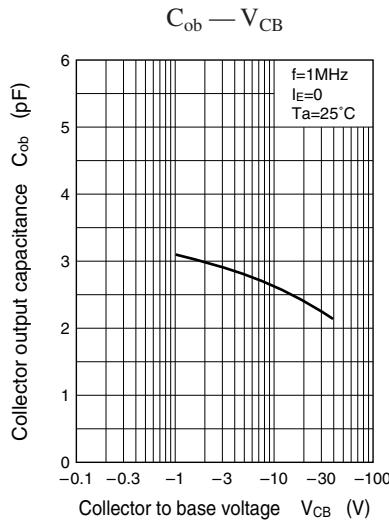


Characteristics charts of UNR611D

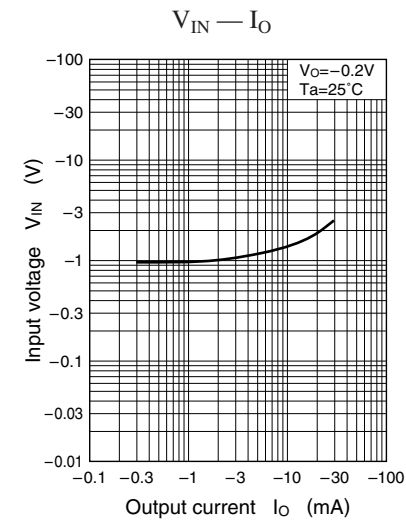
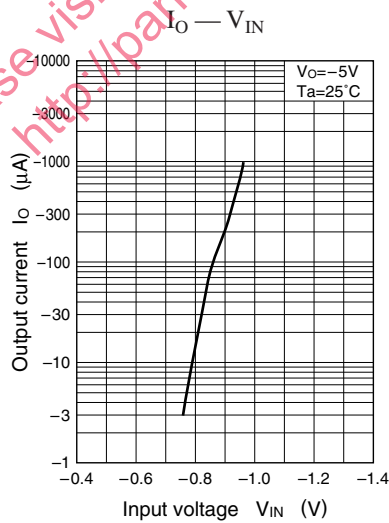
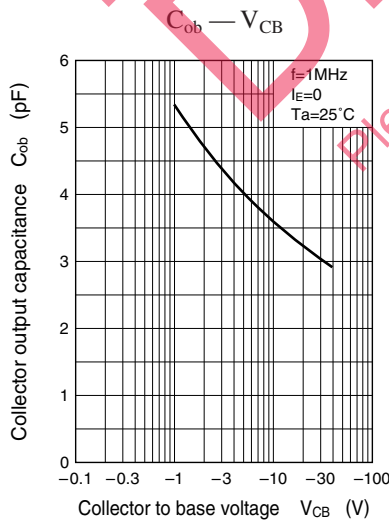
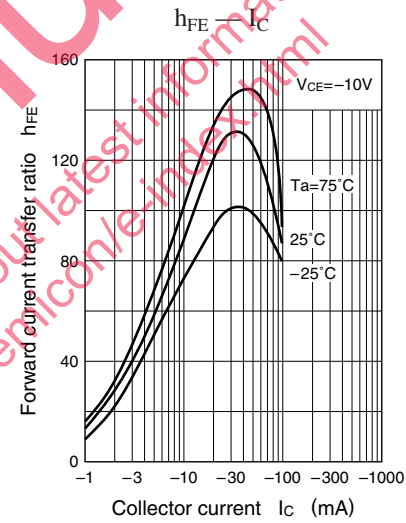
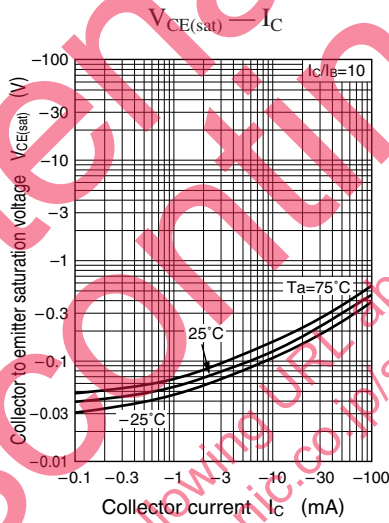
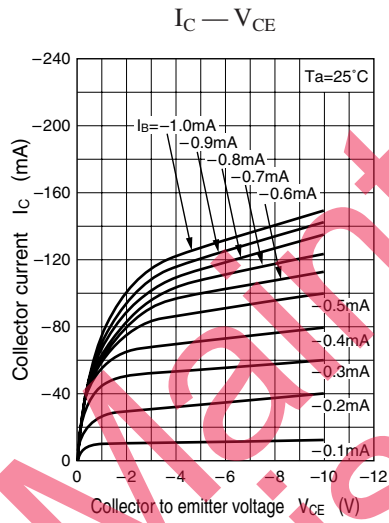


Characteristics charts of UNR611E

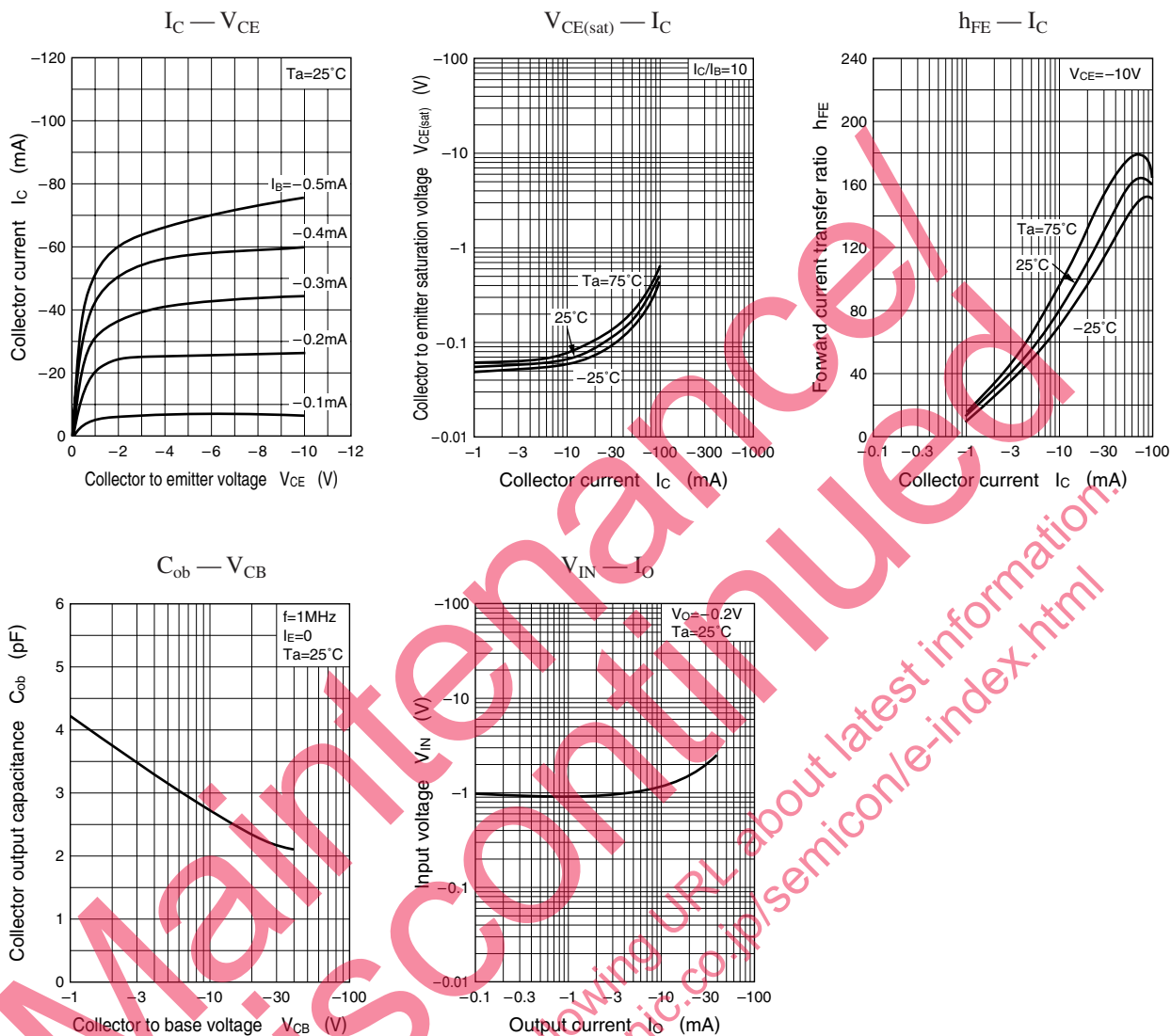




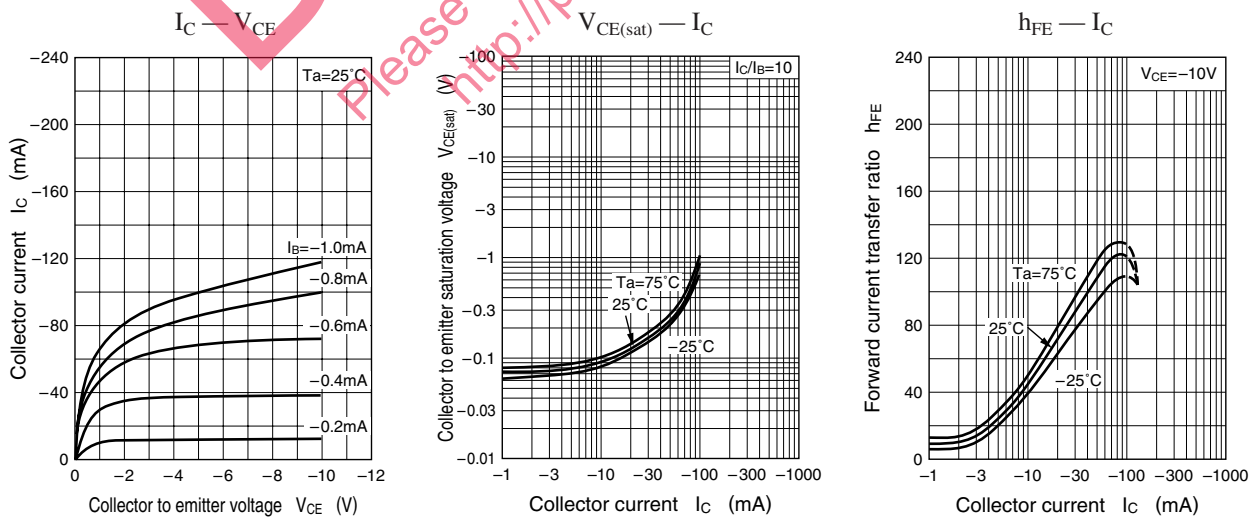
Characteristics charts of UNR611F

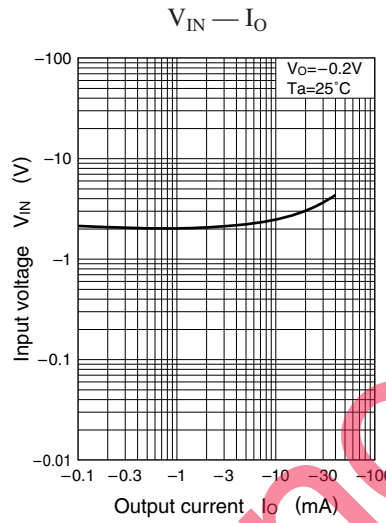
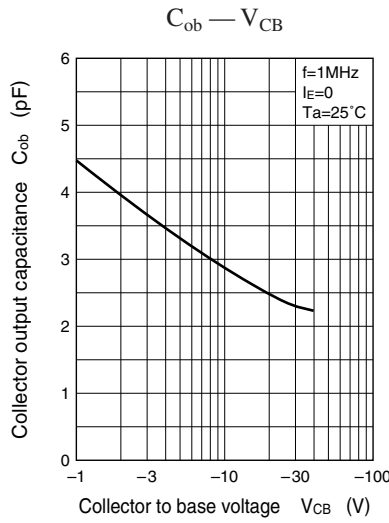


Characteristics charts of UNR611H



Characteristics charts of UNR611L





Maintenance/Discontinued

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