

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

Silicon PNP epitaxial planer transistor

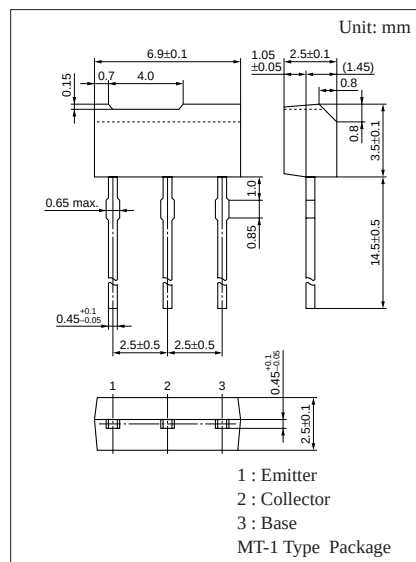
For digital circuits

Features

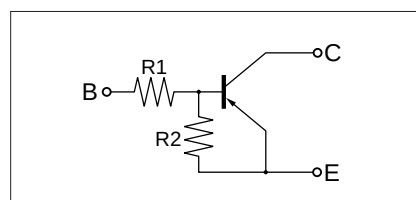
- Costs can be reduced through downsizing of the equipment and reduction of the number of parts.
- MT-1 type package, allowing supply with the radial taping.

Resistance by Part Number

	(R ₁)	(R ₂)
• UN6111	10kΩ	10kΩ
• UN6112	22kΩ	22kΩ
• UN6113	47kΩ	47kΩ
• UN6114	10kΩ	47kΩ
• UN6115	10kΩ	—
• UN6116	4.7kΩ	—
• UN6117	22kΩ	—
• UN6118	0.51kΩ	5.1kΩ
• UN6119	1kΩ	10kΩ
• UN6110	47kΩ	—
• UN611D	47kΩ	10kΩ
• UN611E	47kΩ	22kΩ
• UN611F	4.7kΩ	10kΩ
• UN611H	2.2kΩ	10kΩ
• UN611L	4.7kΩ	4.7kΩ



Internal Connection



Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Collector to base voltage	V _{CBO}	-50	V
Collector to emitter voltage	V _{CEO}	-50	V
Collector current	I _C	-100	mA
Total power dissipation	P _T	400	mW
Junction temperature	T _j	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

**UN6111/6112/6113/6114/6115/6116/6117/
Transistors with built-in Resistor 6118/6119/6110/611D/611E/611F/611H/611L**

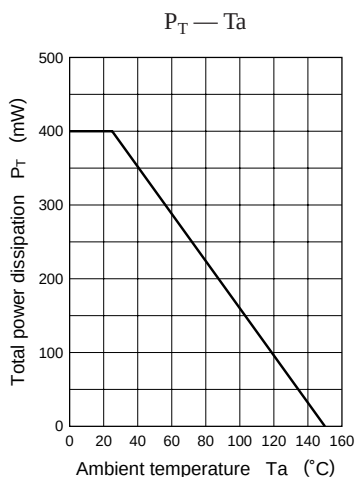
Electrical Characteristics (Ta=25°C)

Parameter		Symbol	Conditions	min	typ	max	Unit
Collector cutoff current		I _{CBO}	V _{CB} = -50V, I _E = 0			- 0.1	μA
		I _{CEO}	V _{CE} = -50V, I _B = 0			- 0.5	μA
Emitter cutoff current	UN6111	I _{EBO}	V _{EB} = -6V, I _C = 0			- 0.5	mA
	UN6112/6114/611E/611D					- 0.2	
	UN6113					- 0.1	
	UN6115/6116/6117/6110					- 0.01	
	UN611F/611H					-1.0	
	UN6119					-1.5	
	UN6118/611L					-2.0	
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	UN6111	h _{FE}	V _{CE} = -10V, I _C = -5mA	35			
	UN6112/611E			60			
	UN6113/6114			80			
	UN6115*/6116*/6117*/6110*			160		460	
	UN611F/611D/6119/611H			30			
	UN6118/611L			20			
Collector to emitter saturation voltage		V _{CE(sat)}	I _C = -10mA, I _B = - 0.3mA			- 0.25	V
Output voltage high level		V _{OH}	V _{CC} = -5V, V _B = - 0.5V, R _L = 1kΩ	-4.9			V
Output voltage low level		V _{OL}	V _{CC} = -5V, V _B = -2.5V, R _L = 1kΩ			- 0.2	V
			V _{CC} = -5V, V _B = -3.5V, R _L = 1kΩ			- 0.2	
			V _{CC} = -5V, V _B = -10V, R _L = 1kΩ			- 0.2	
			V _{CC} = -5V, V _B = -6V, R _L = 1kΩ			- 0.2	
Transition frequency		f _T	V _{CB} = -10V, I _E = 1mA, f = 200MHz		80		MHz
Input resistance	UN6111/6114/6115	R _i		(-30%)	10	(+30%)	kΩ
	UN6112/6117				22		
	UN6113/6110/611D/611E				47		
	UN6116/611F/611L				4.7		
	UN6118				0.51		
	UN6119				1		
	UN611H				2.2		
Resistance ratio	UN6111/6112/6113/611L	R ₁ /R ₂		0.8	1.0	1.2	
	UN6114			0.17	0.21	0.25	
	UN6118/6119			0.08	0.1	0.12	
	UN611D			3.7	4.7	5.7	
	UN611E			1.7	2.14	2.6	
	UN611F			0.37	0.47	0.57	
	UN611H			0.17	0.22	0.27	

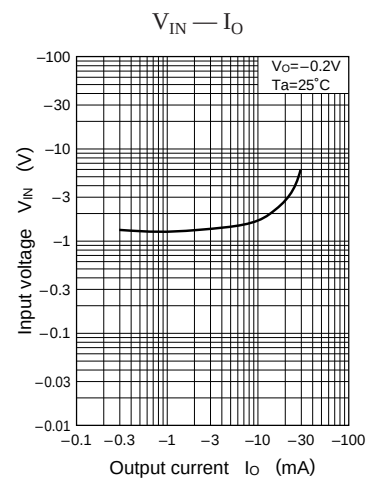
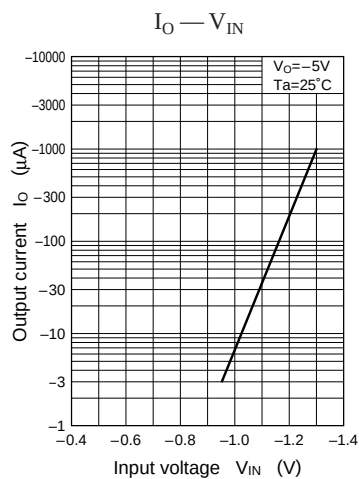
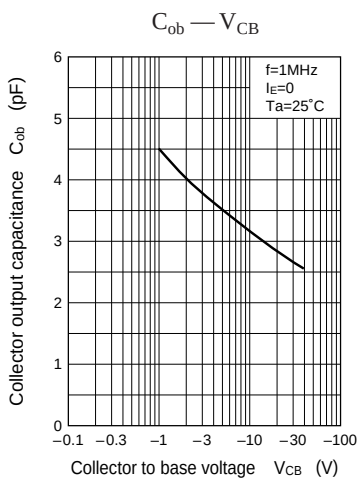
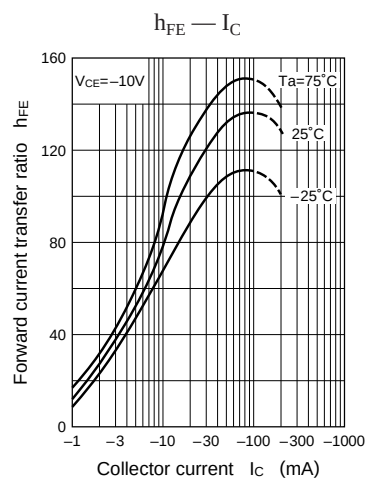
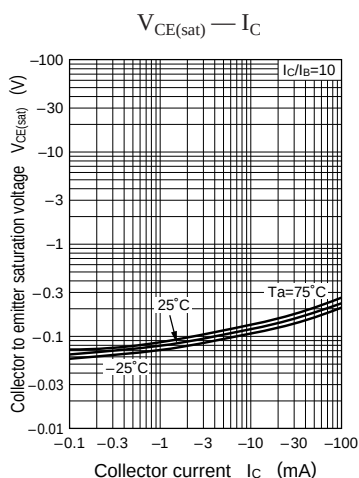
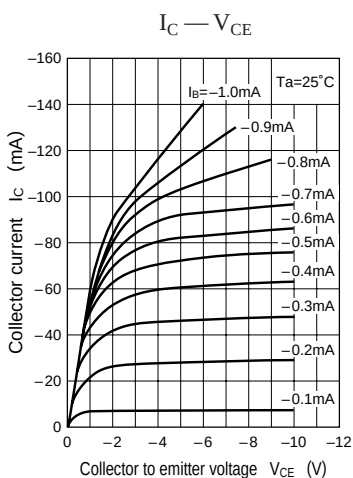
* h_{FE} rank classification (UN6115/6116/6117/6110)

Rank	Q	R	S
h _{FE}	160 to 260	210 to 340	290 to 460

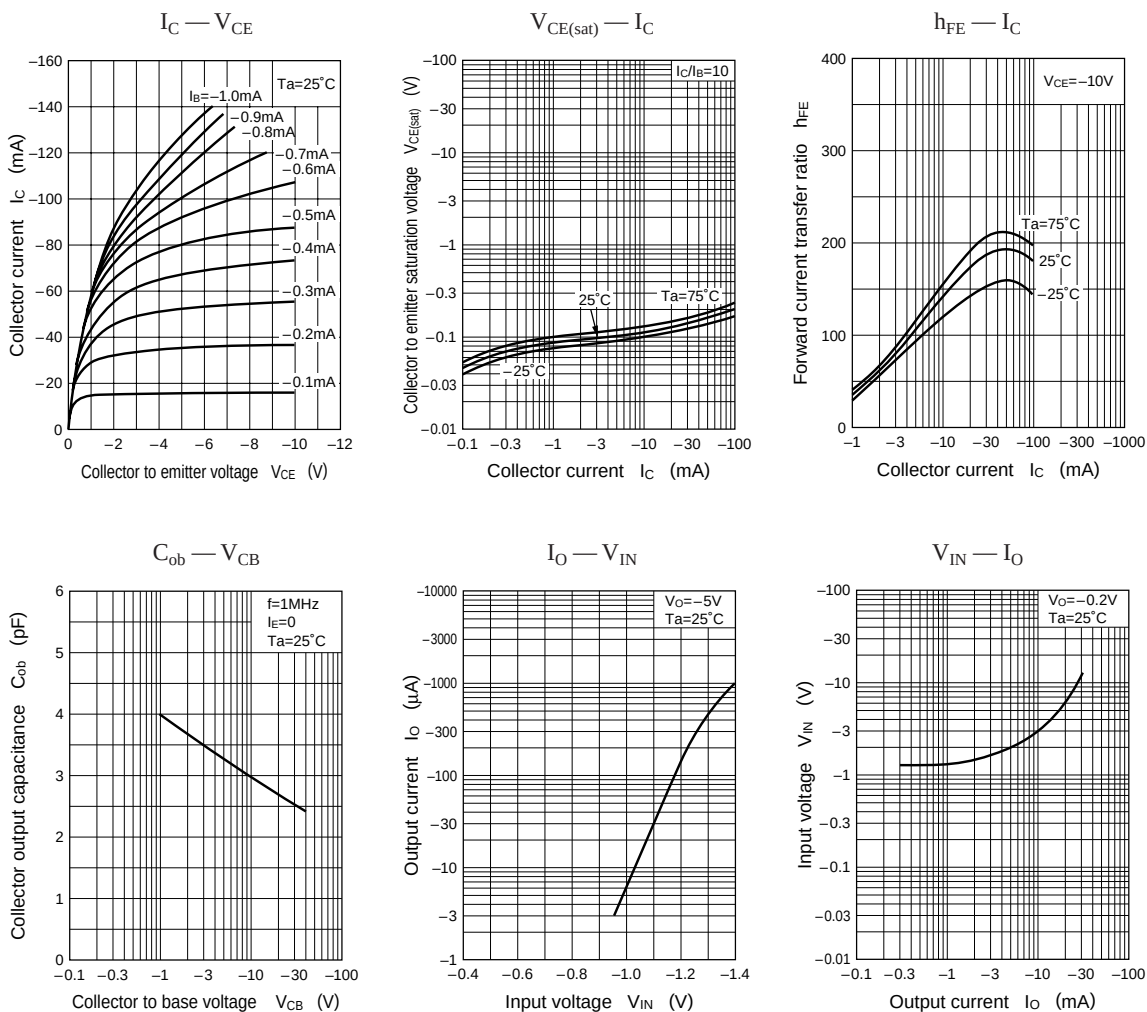
Common characteristics chart



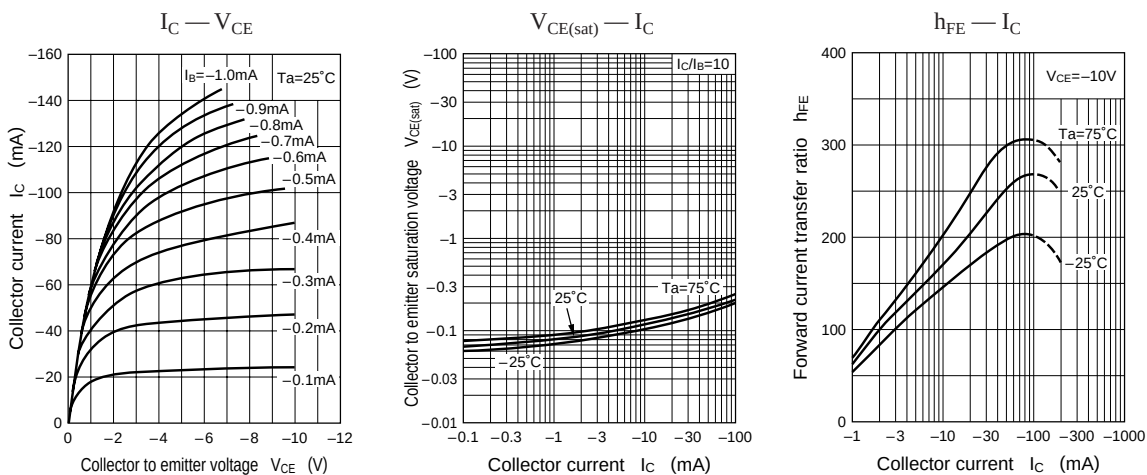
Characteristics charts of UN6111

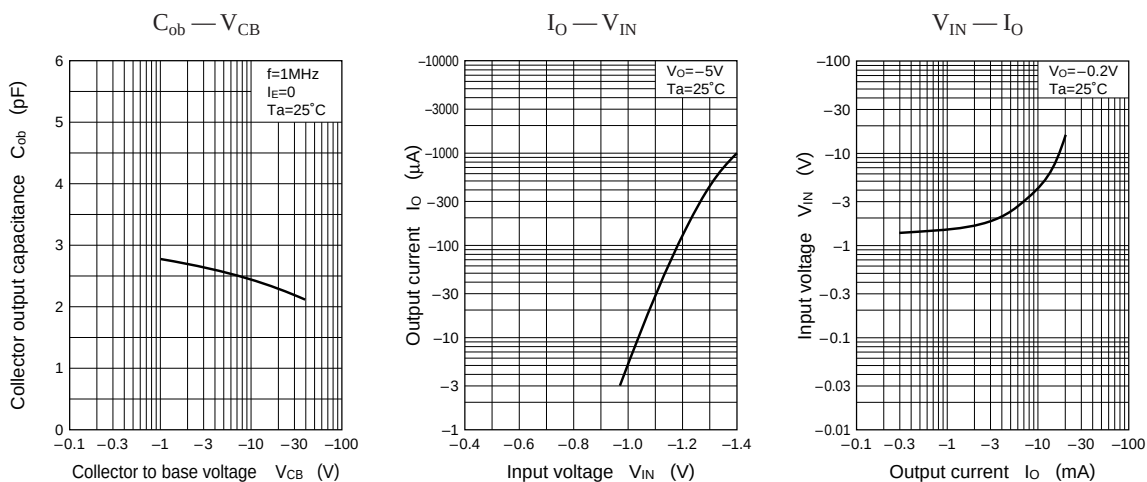


Characteristics charts of UN6112

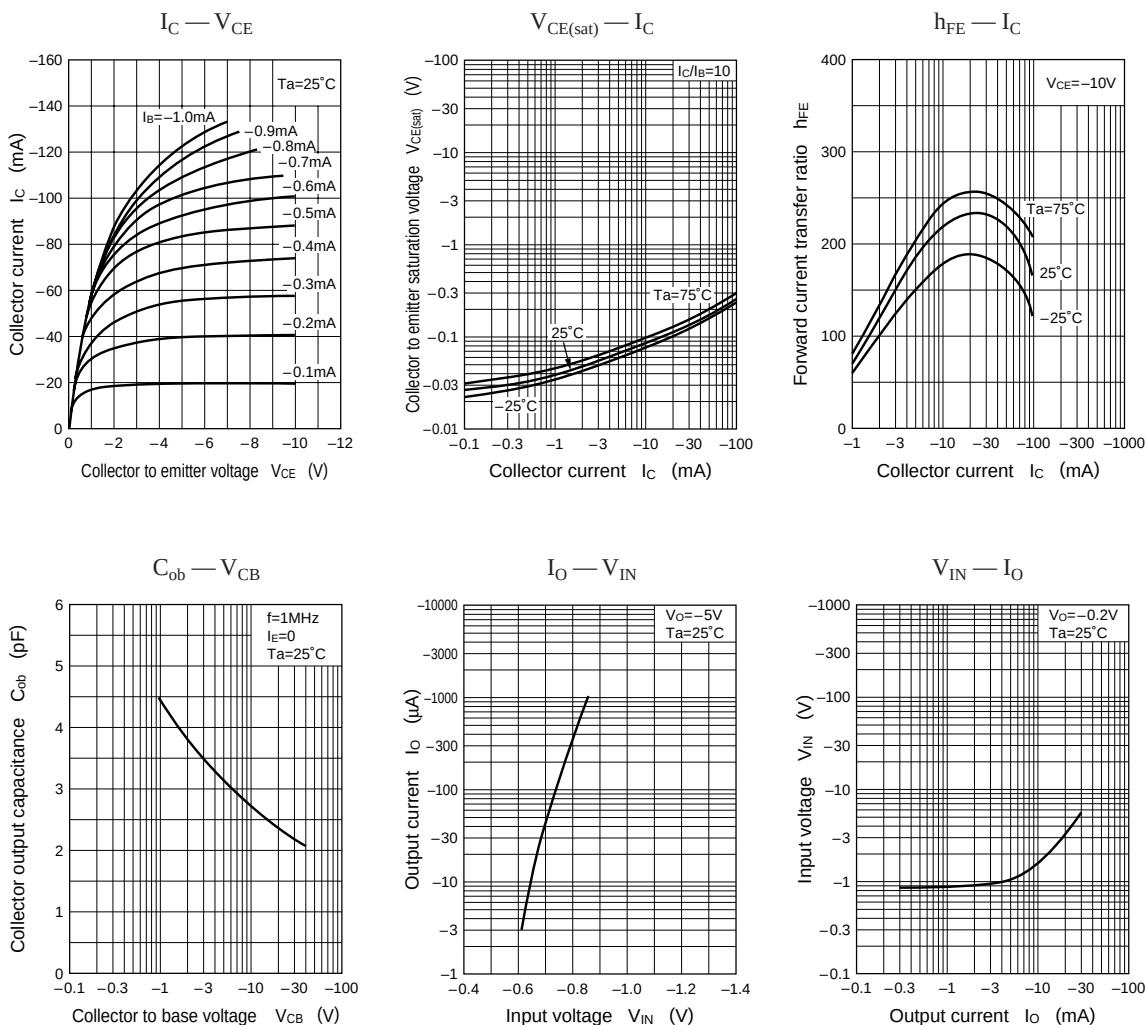


Characteristics charts of UN6113

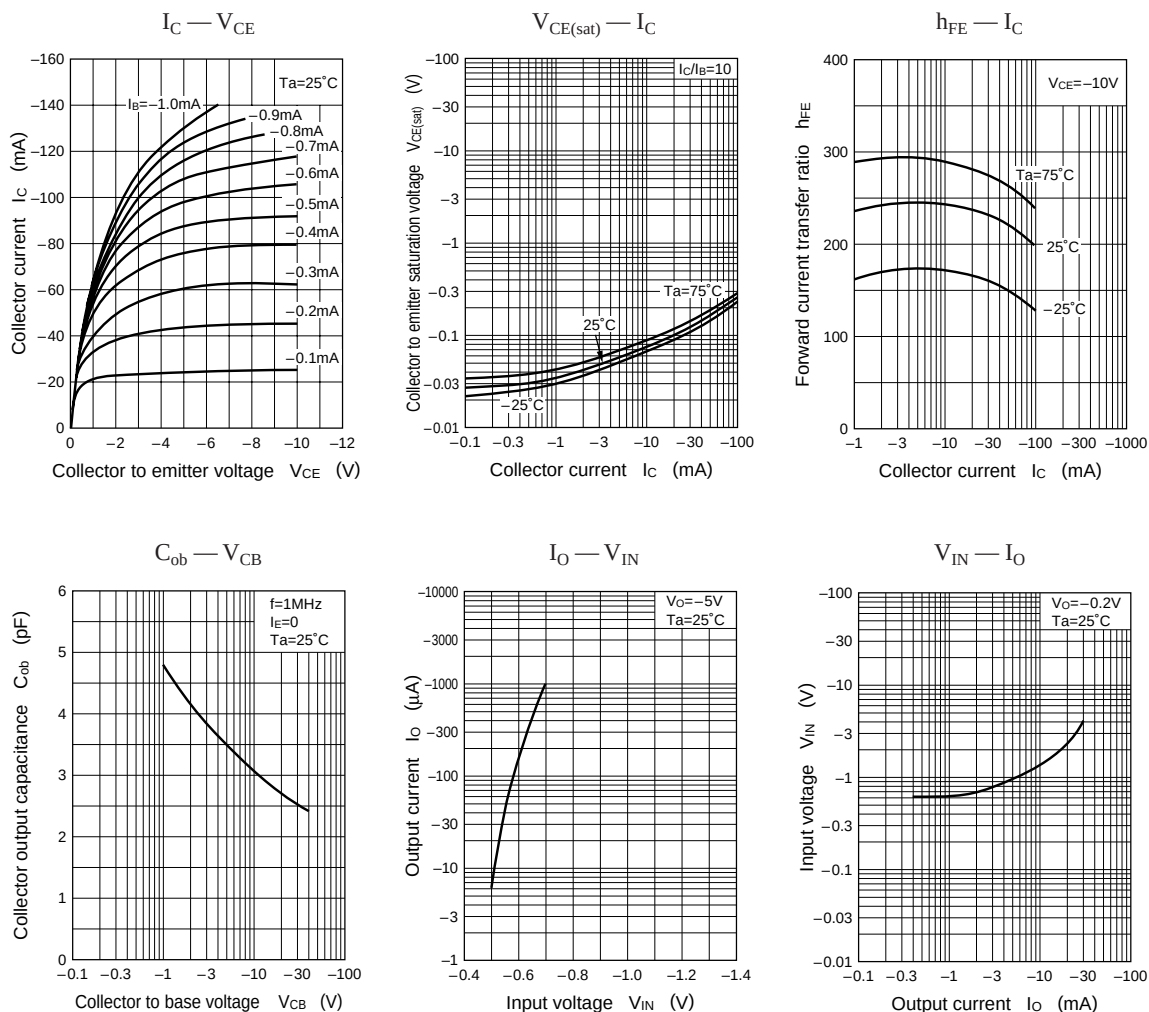




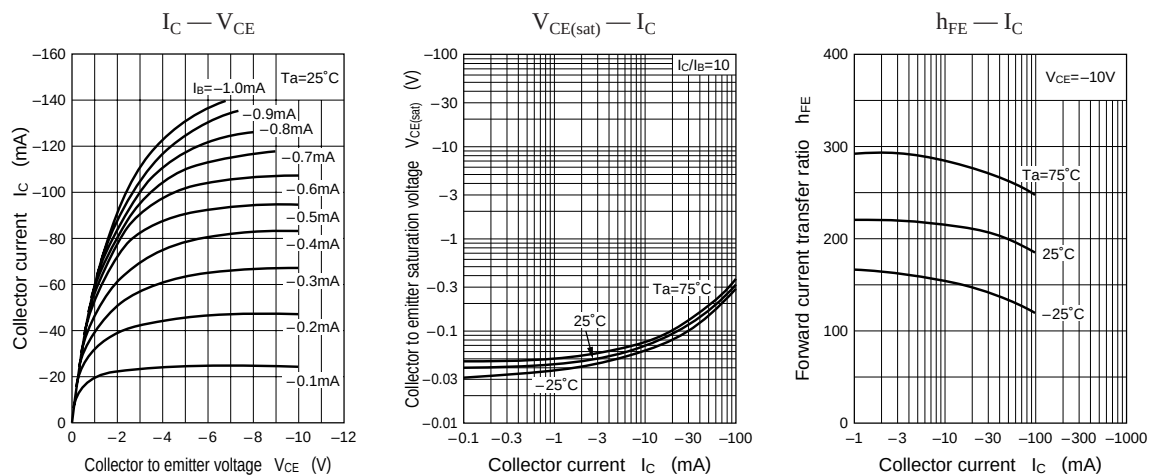
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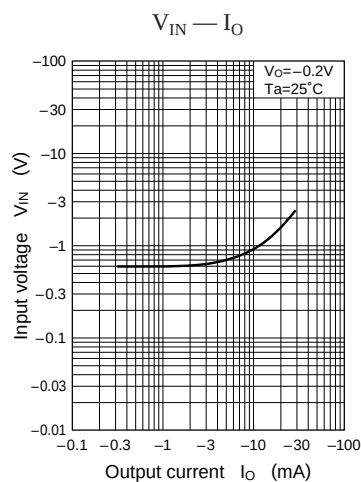
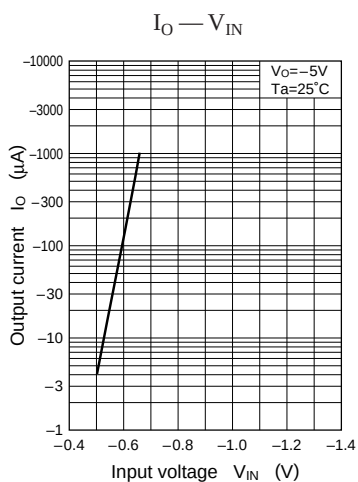
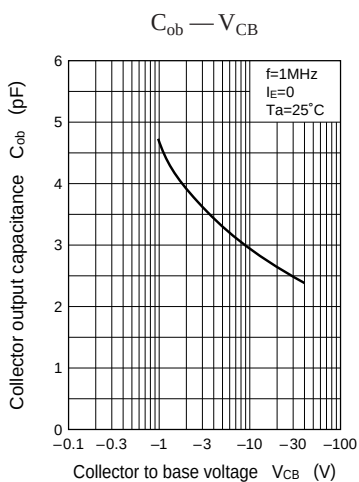


Characteristics charts of UN6115

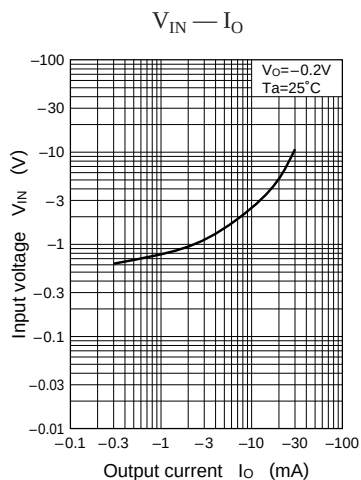
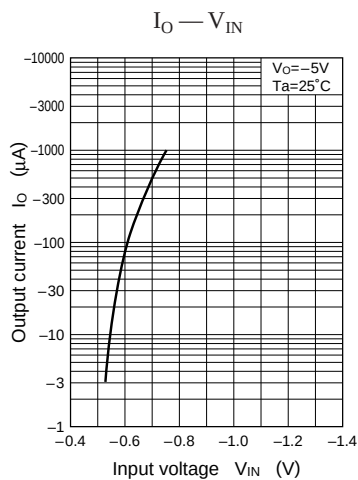
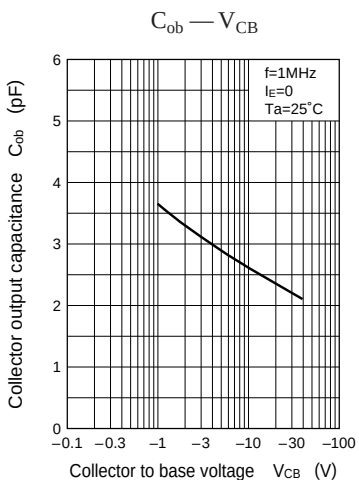
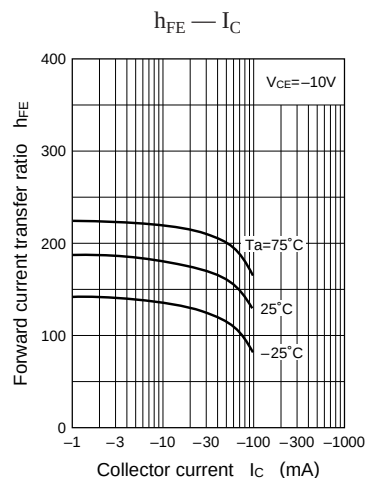
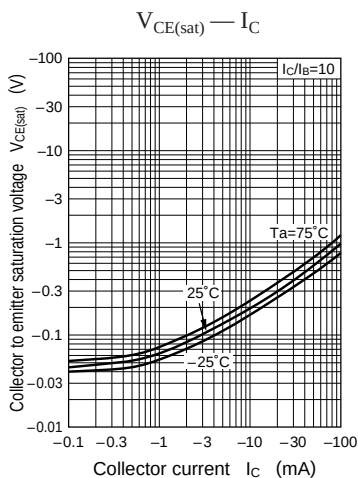
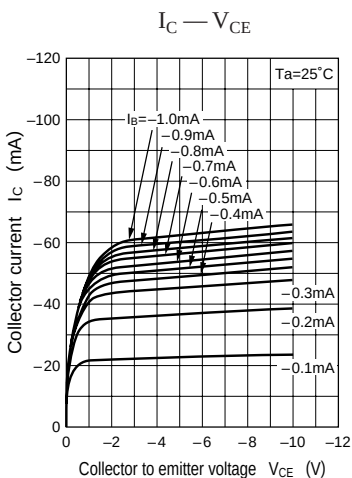


Characteristics charts of UN6116

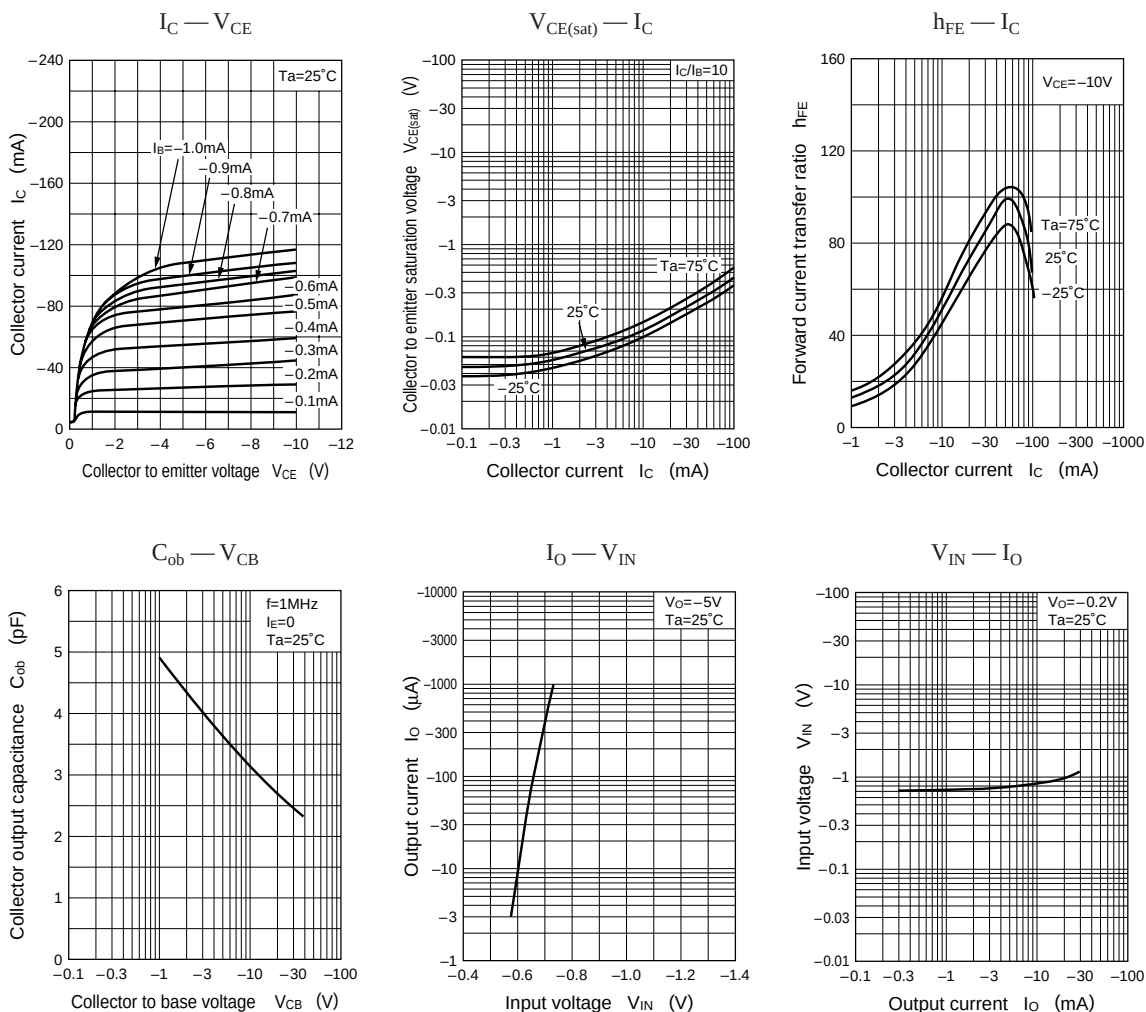




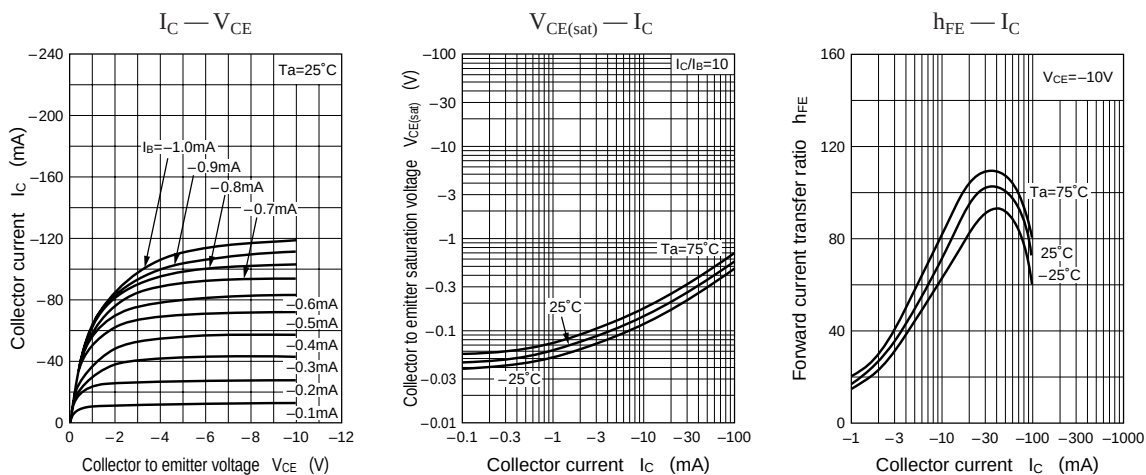
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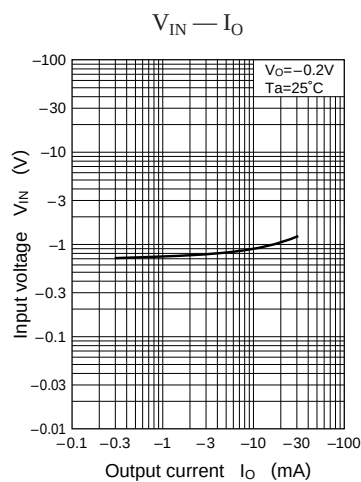
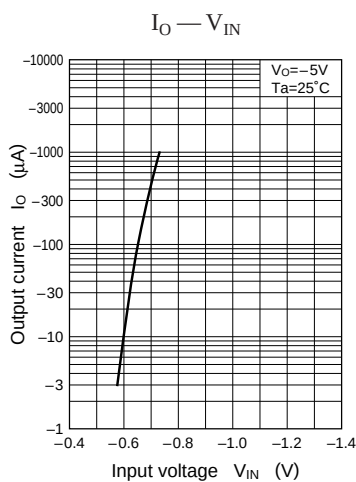
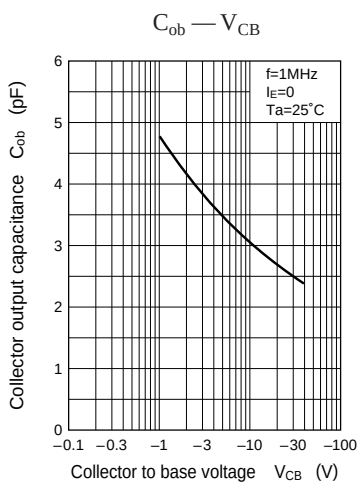


Characteristics charts of UN6118

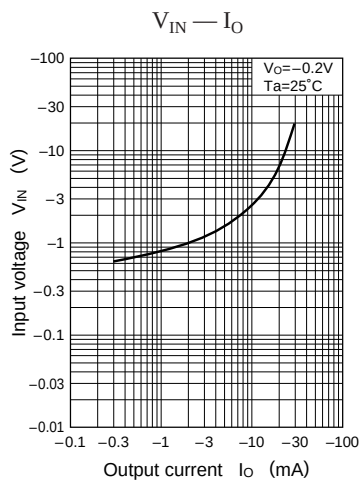
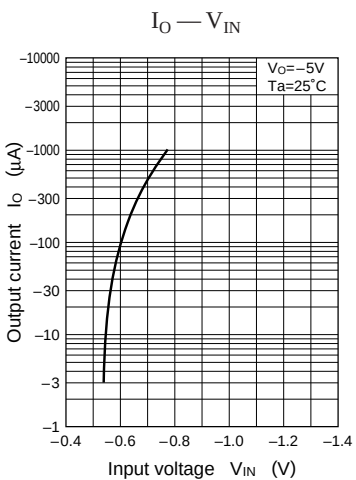
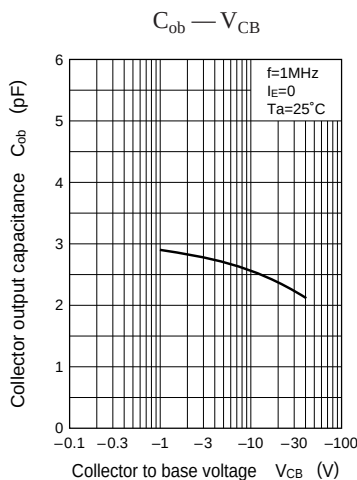
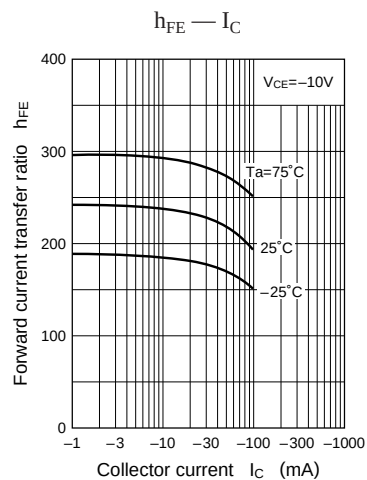
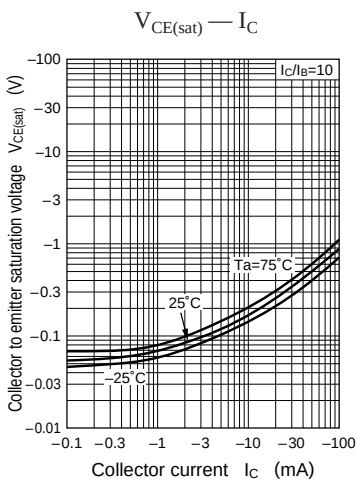
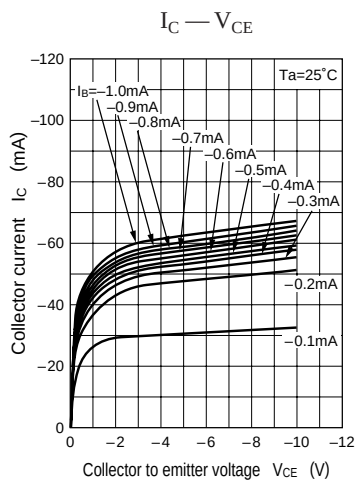


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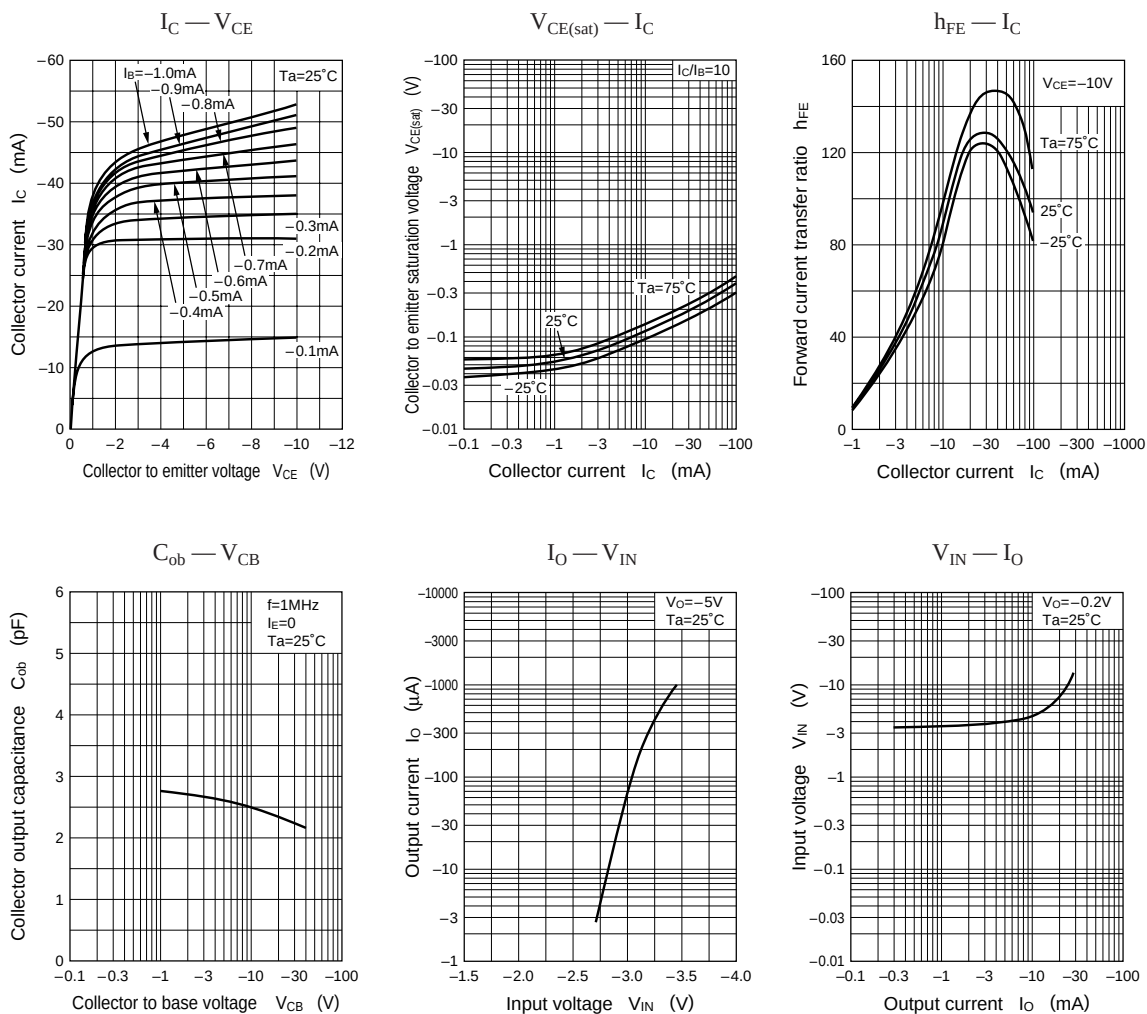




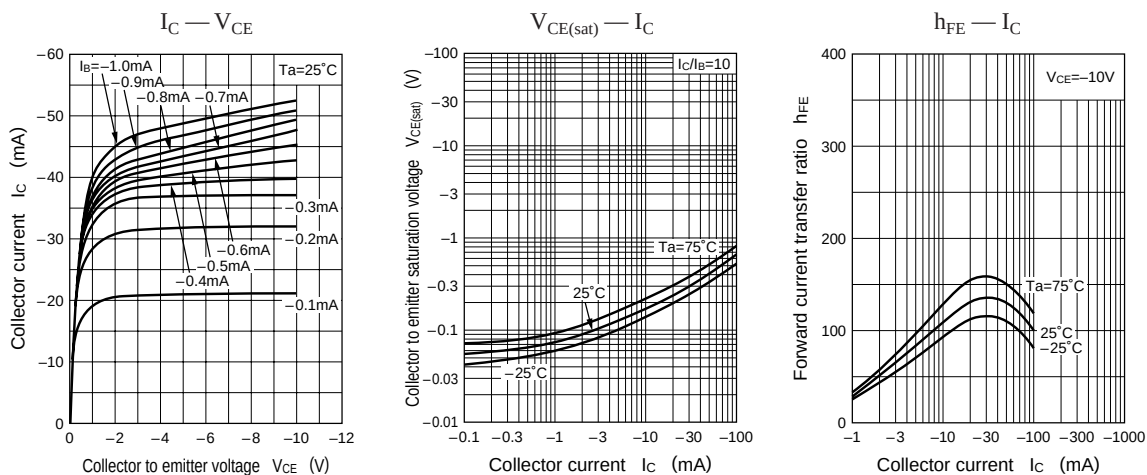
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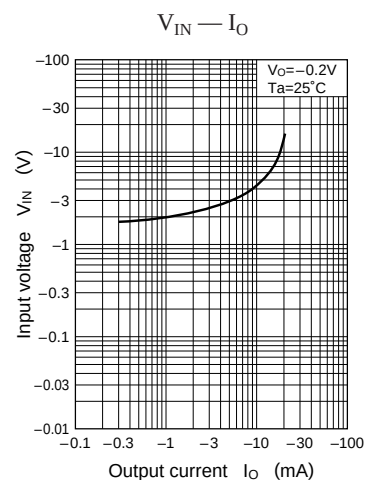
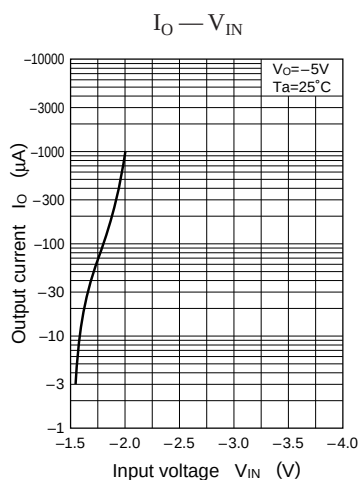
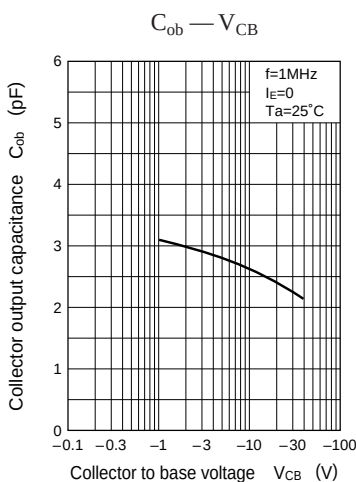


Characteristics charts of UN611D

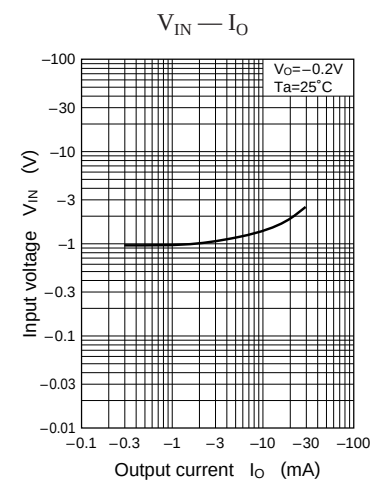
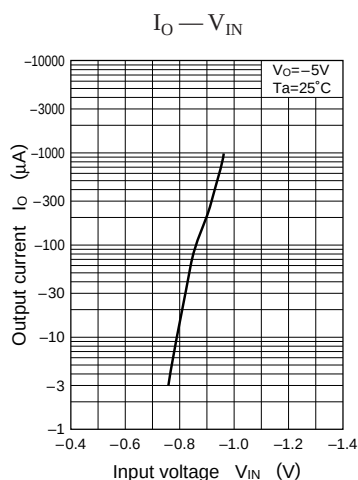
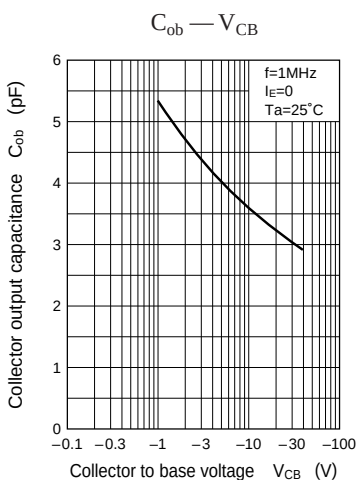
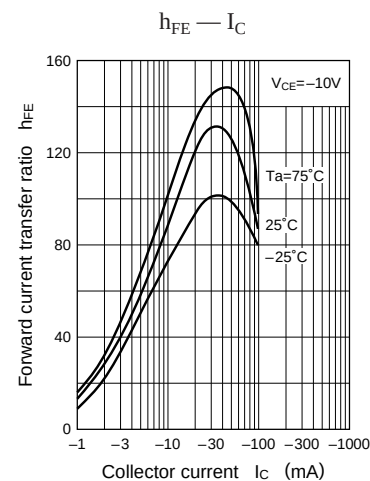
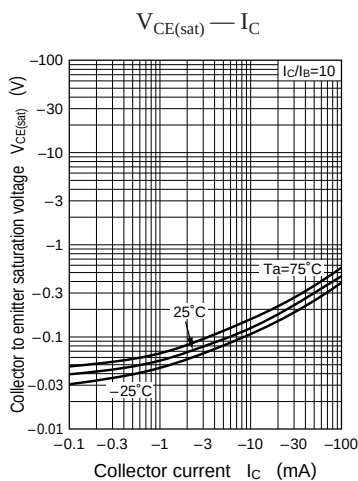
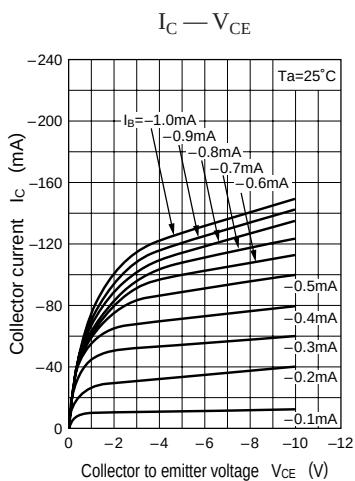


Characteristics charts of UN611E

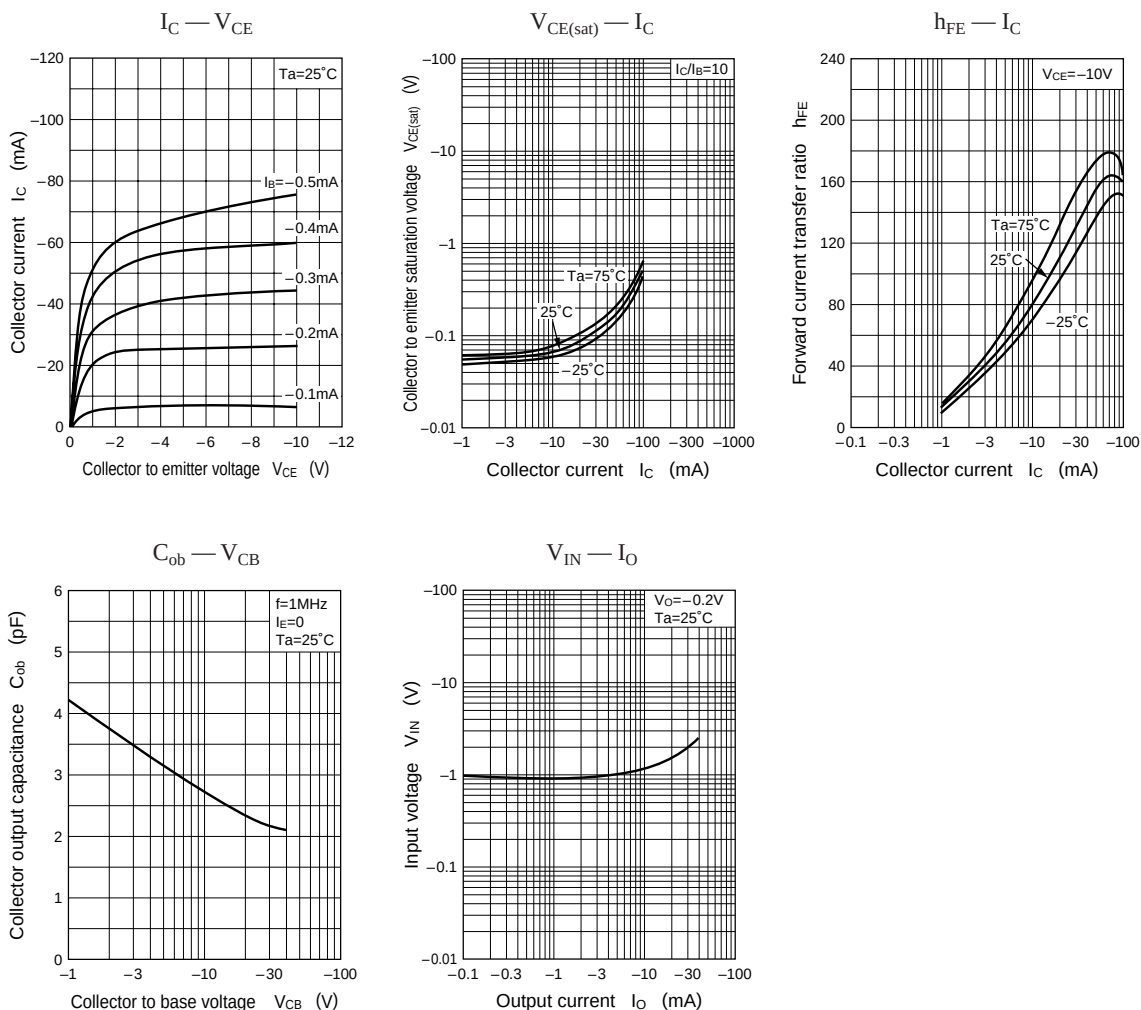




Characteristics charts of UN611F



Characteristics charts of UN611H



Characteristics charts of UN611L

