

UN4111/4112/4113/4114/4115/4116/4117/4118/ 4119/4110/411D/411E/411F/411H/411L

Silicon PNP epitaxial planer transistor

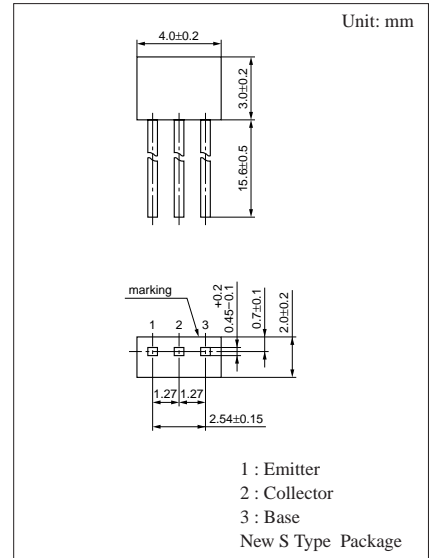
For digital circuits

Features

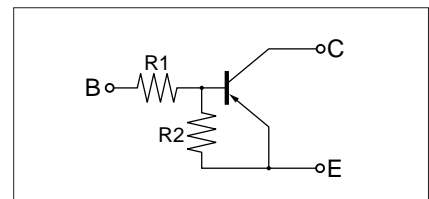
- Costs can be reduced through downsizing of the equipment and reduction of the number of parts.
- New S type package, allowing supply with the radial taping.

Resistance by Part Number

	(R ₁)	(R ₂)
• UN4111	10kΩ	10kΩ
• UN4112	22kΩ	22kΩ
• UN4113	47kΩ	47kΩ
• UN4114	10kΩ	47kΩ
• UN4115	10kΩ	—
• UN4116	4.7kΩ	—
• UN4117	22kΩ	—
• UN4118	0.51kΩ	5.1kΩ
• UN4119	1kΩ	10kΩ
• UN4110	47kΩ	—
• UN411D	47kΩ	10kΩ
• UN411E	47kΩ	22kΩ
• UN411F	4.7kΩ	10kΩ
• UN411H	2.2kΩ	10kΩ
• UN411L	4.7kΩ	4.7kΩ



Internal Connection



Absolute Maximum Ratings (T_a=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	300	mW
Junction temperature	T _j	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

UN4111/4112/4113/4114/4115/4116/4117/4118/
Transistors with built-in Resistor 4119/4110/411D/411E/411F/411H/411L

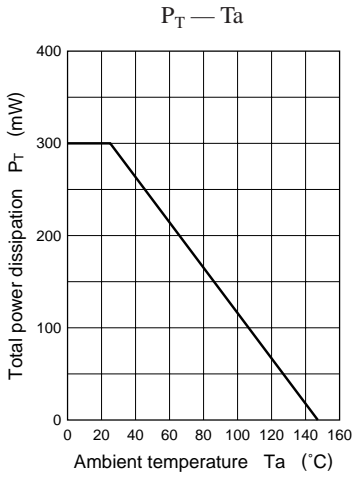
■ Electrical Characteristics (T_a=25°C)

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	UN4111	I _{EBO}	V _{EB} = -6V, I _C = 0			-0.5	mA		
	UN4112/4114/411E/411D					-0.2			
	UN4113					-0.1			
	UN4115/4116/4117/4110					-0.01			
	UN411F/411H					-1.0			
	UN4119					-1.5			
	UN4118/411L					-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	UN4111	h _{FE}	V _{CE} = -10V, I _C = -5mA	35					
	UN4112/411E			60					
	UN4113/4114			80					
	UN4115*/4116*/4117*/4110*			160		460			
	UN411F/411D/4119/411H			30					
	UN4118/411L			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	UN4111/4114/4115	R _i		(-30%)		(±30%)	kΩ		
	UN4112/4117							10	
	UN4113/4110/411D/411E							22	
	UN4116/411F/411L							47	
	UN4118							4.7	
	UN4119							0.51	
	UN411H							1	
Resistance ratio	UN4111/4112/4113/411L	R ₁ /R ₂					0.8		
	UN4114						1.0	1.2	
	UN4118/4119						0.17	0.21	0.25
	UN411D						0.08	0.1	0.12
	UN411E						3.7	4.7	5.7
	UN411F						1.7	2.14	2.6
	UN411H						0.37	0.47	0.57
							0.17	0.22	0.27

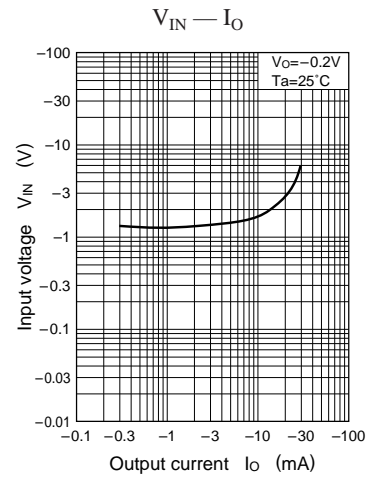
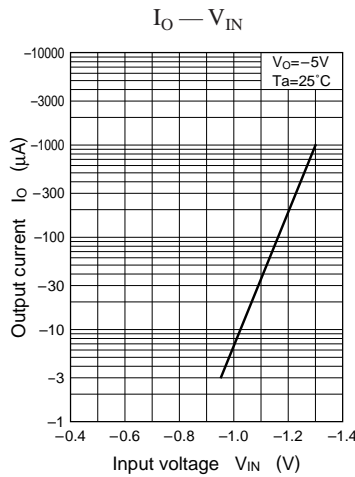
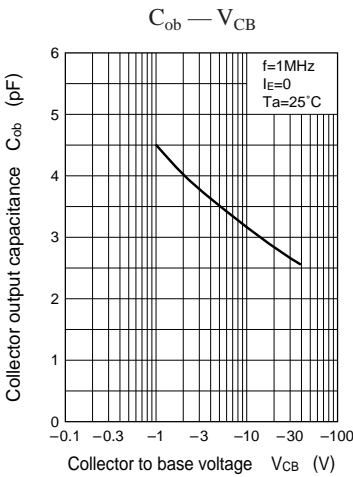
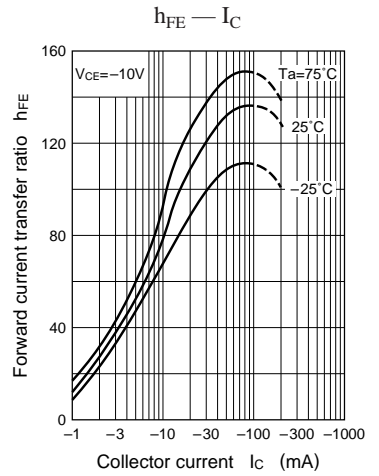
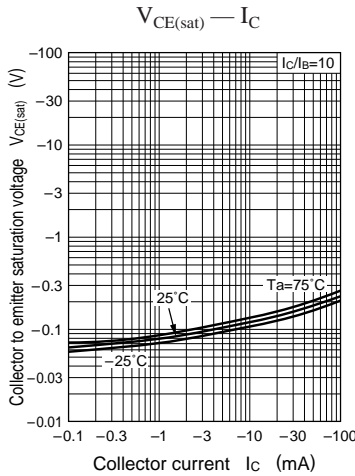
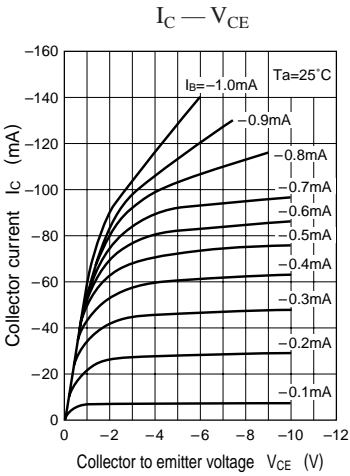
* h_{FE} rank classification (UN4115/4116/4117/4110)

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

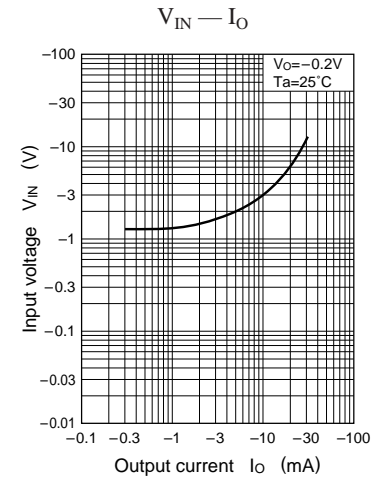
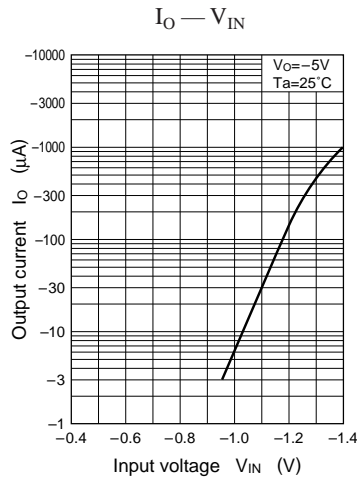
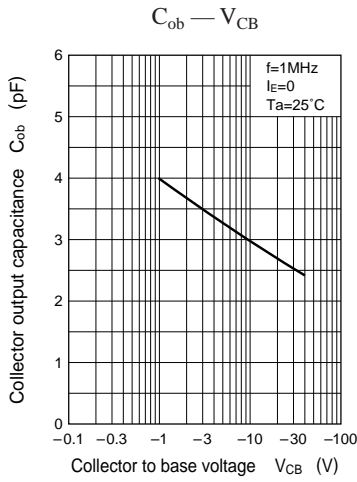
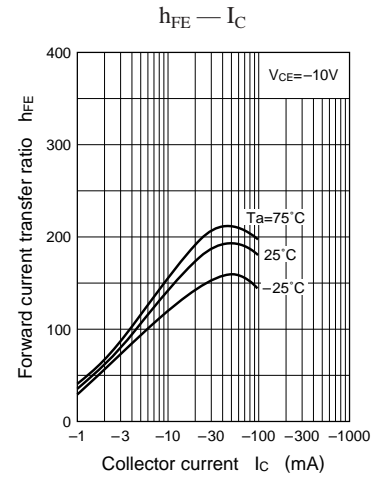
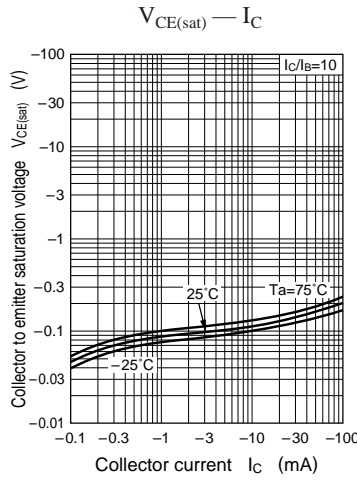
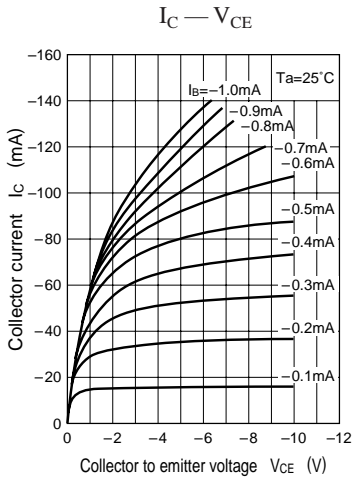
Common characteristics chart



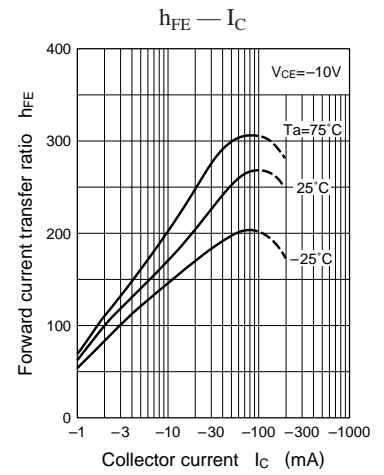
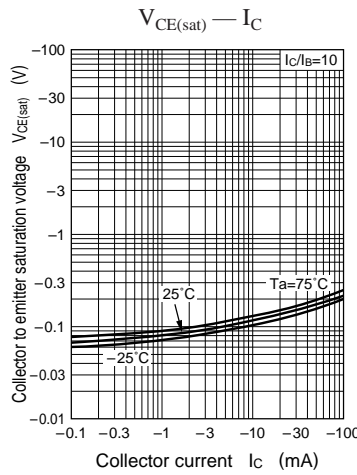
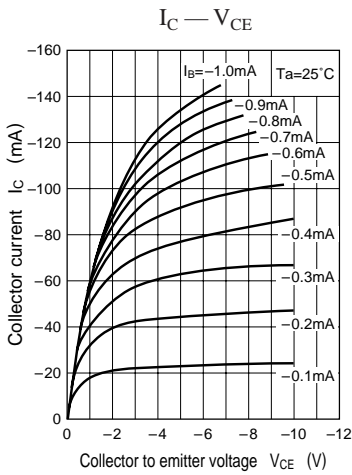
Characteristics charts of UN4111

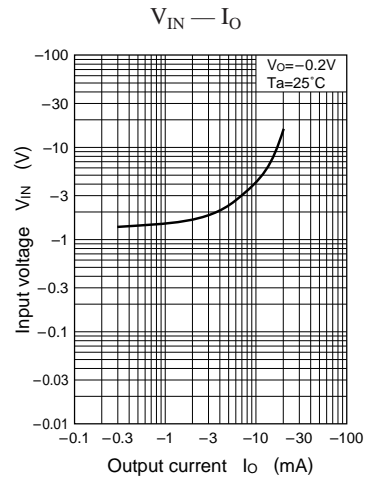
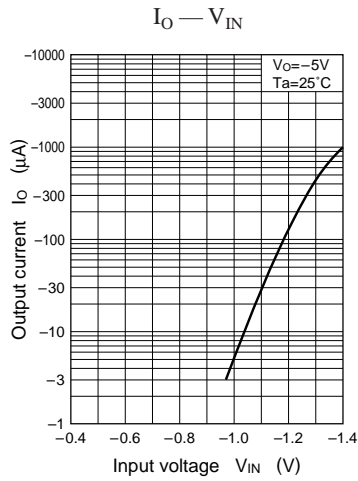
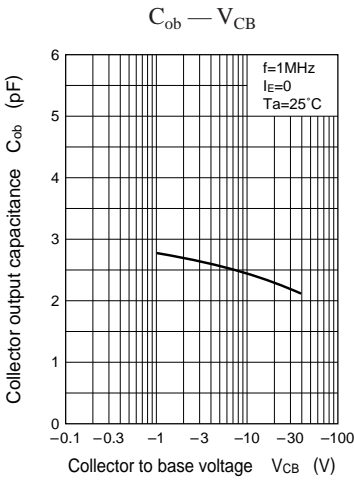


Characteristics charts of UN4112

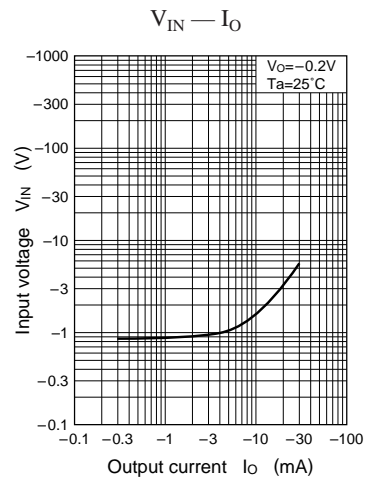
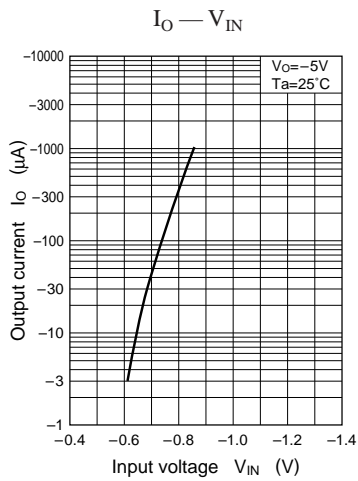
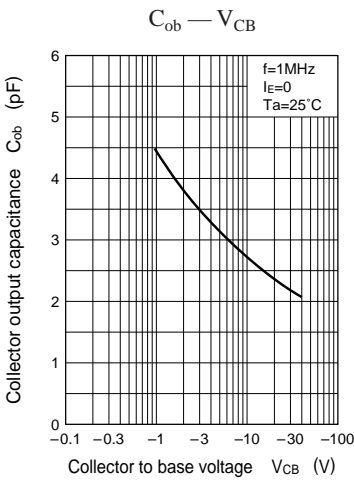
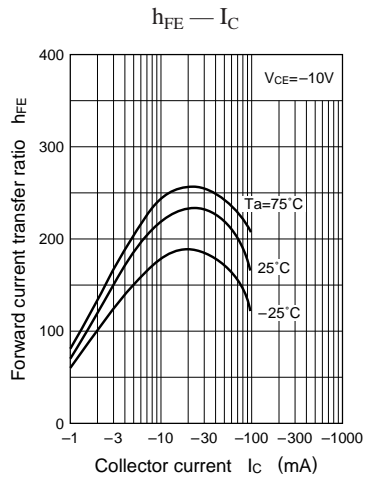
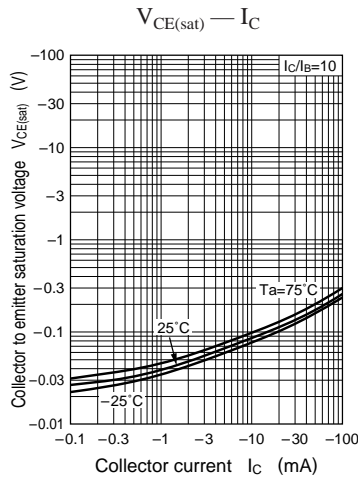
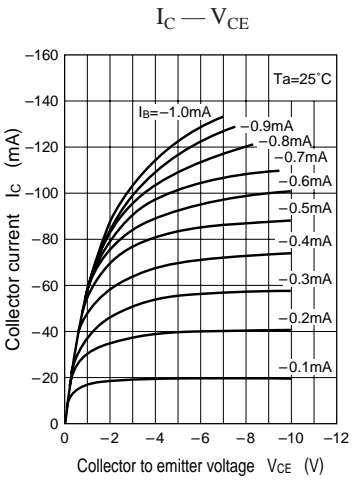


Characteristics charts of UN4113

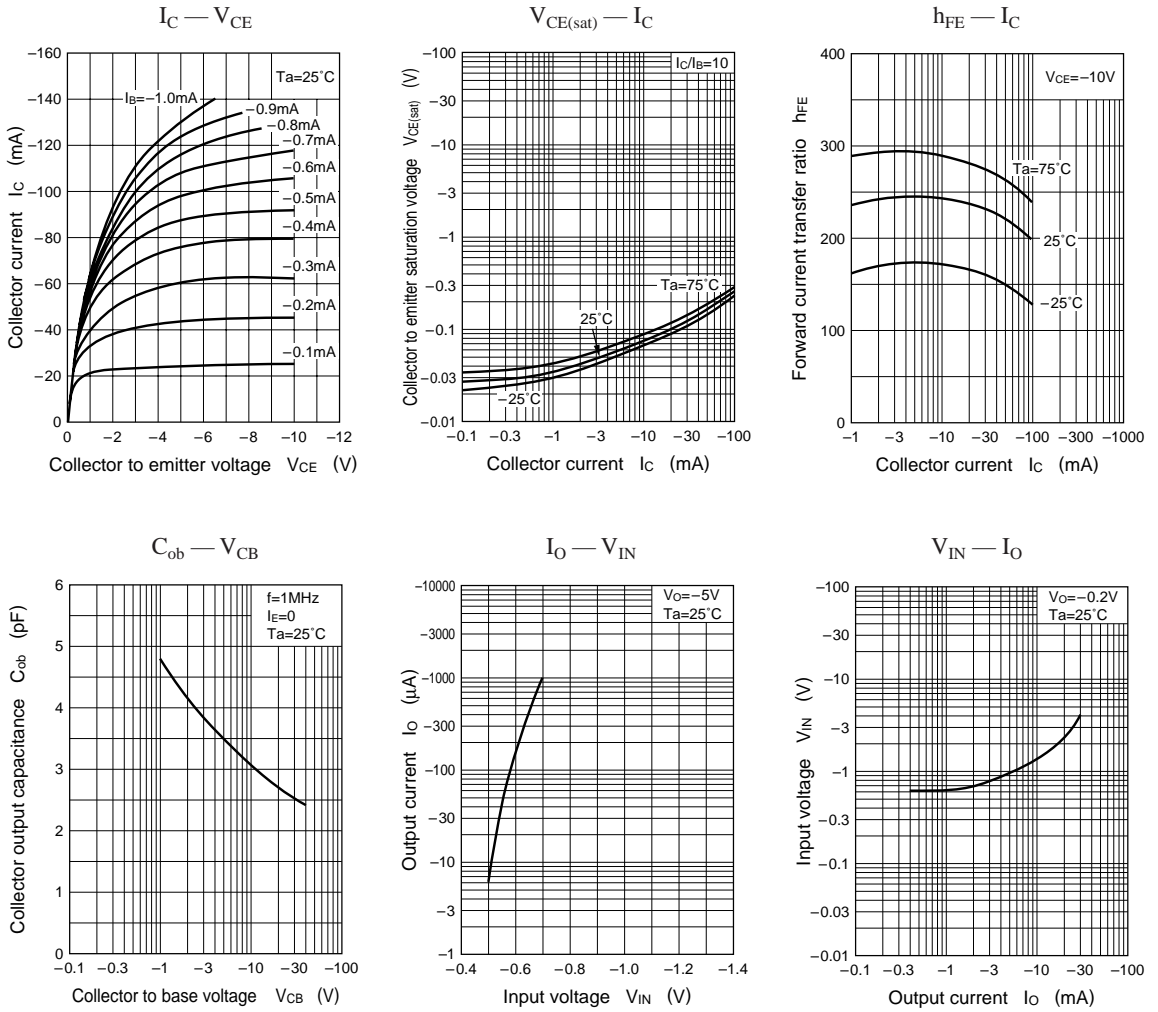




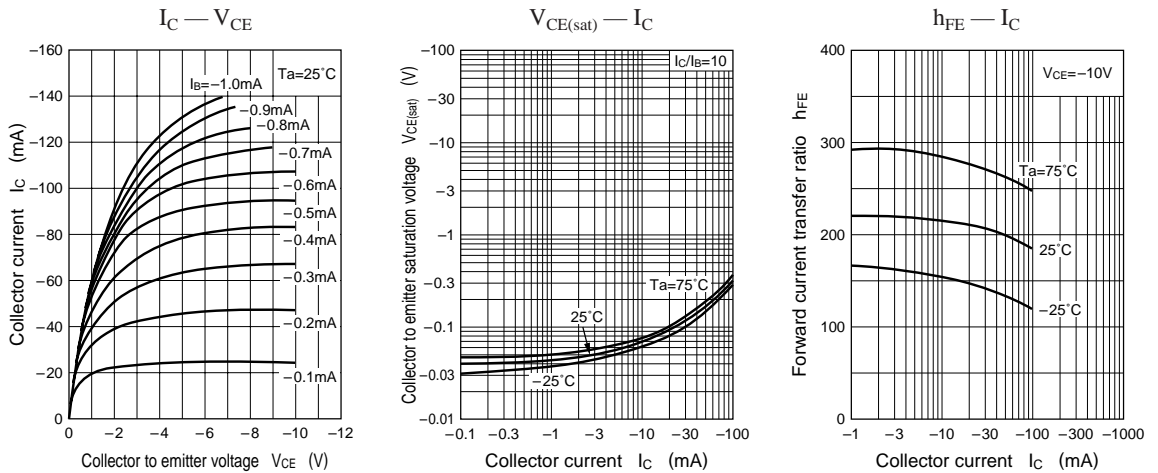
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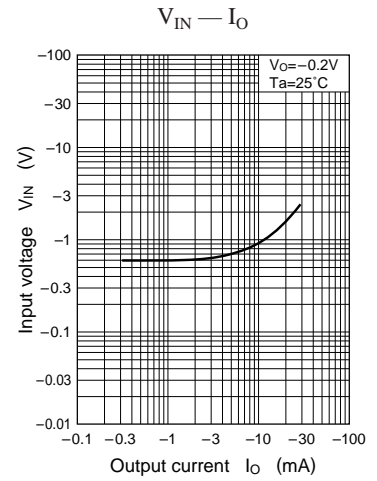
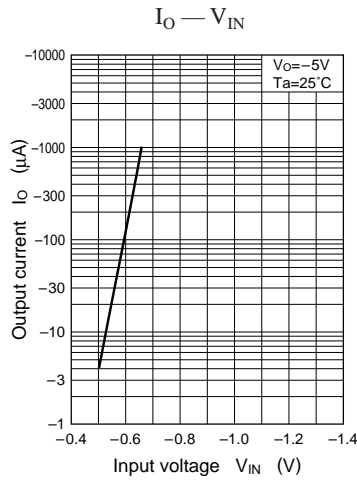
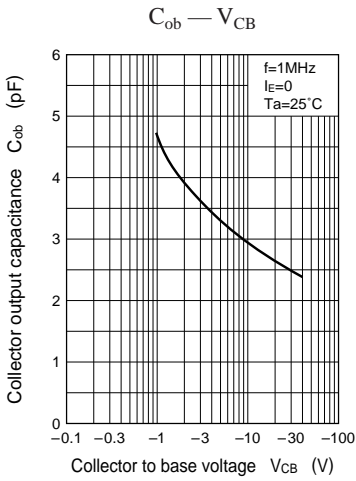


Characteristics charts of UN4115

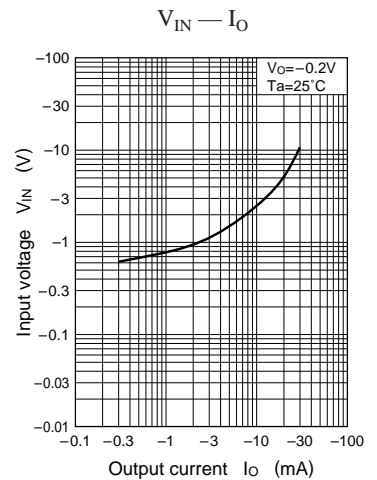
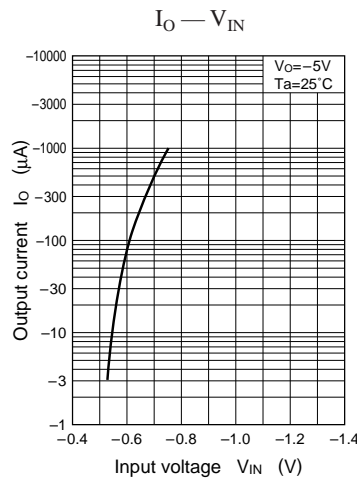
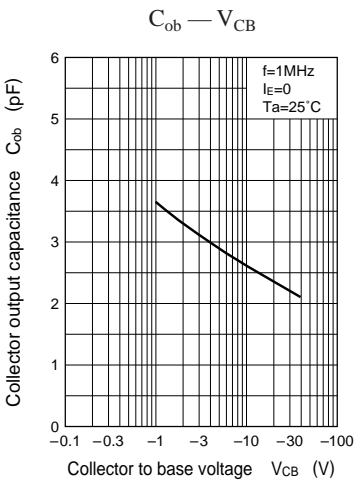
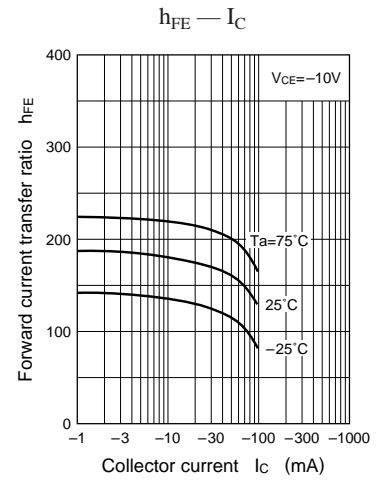
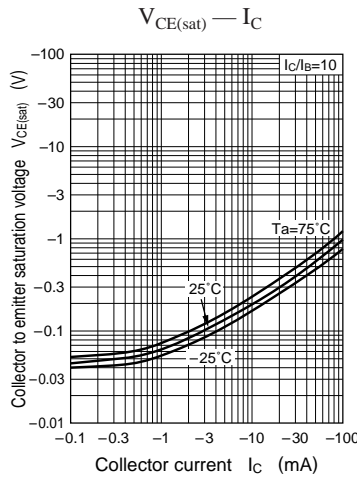
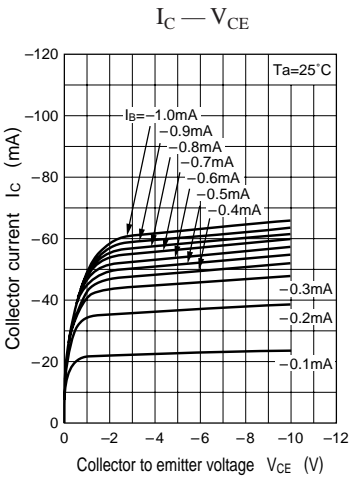


Characteristics charts of UN4116

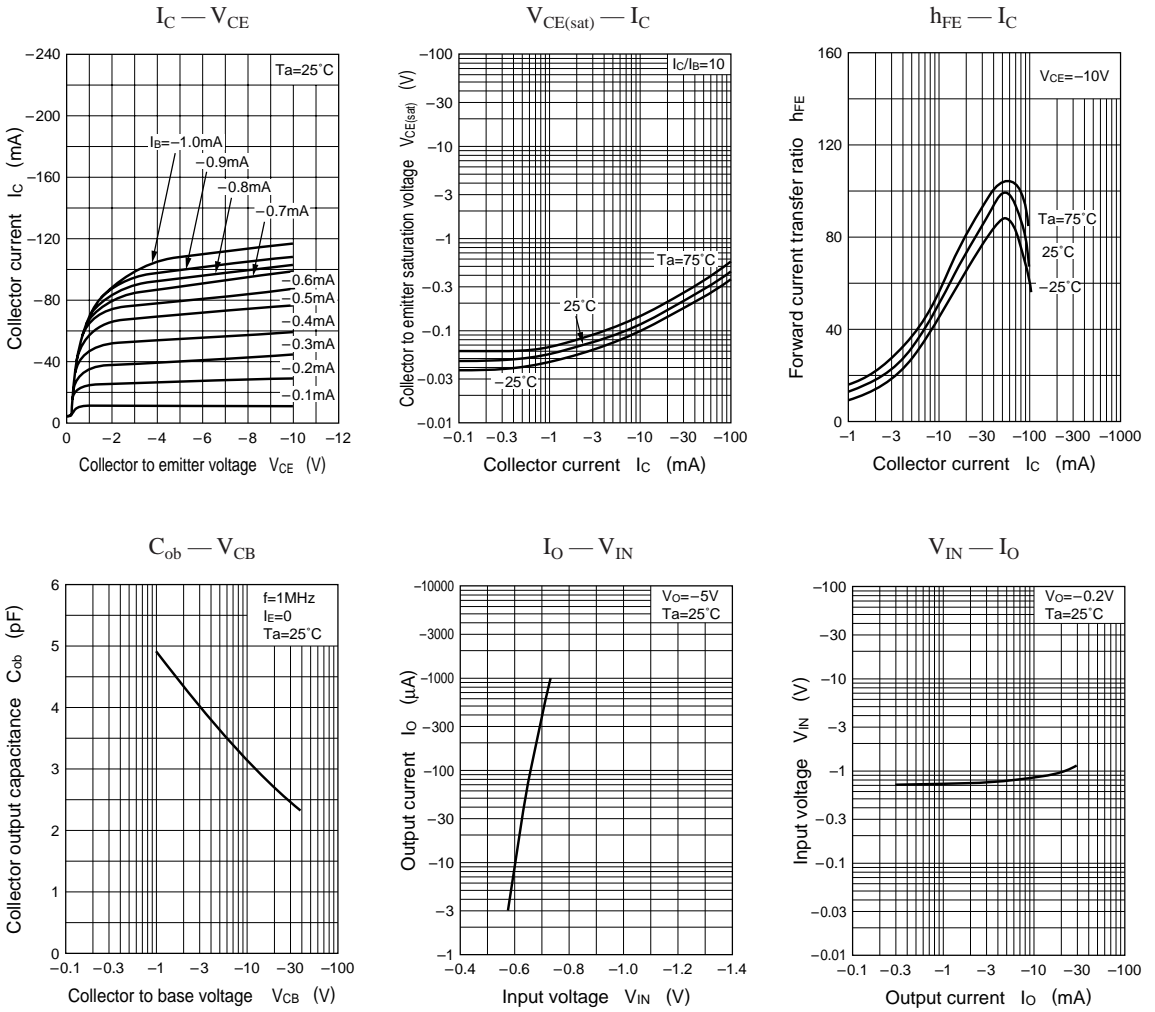




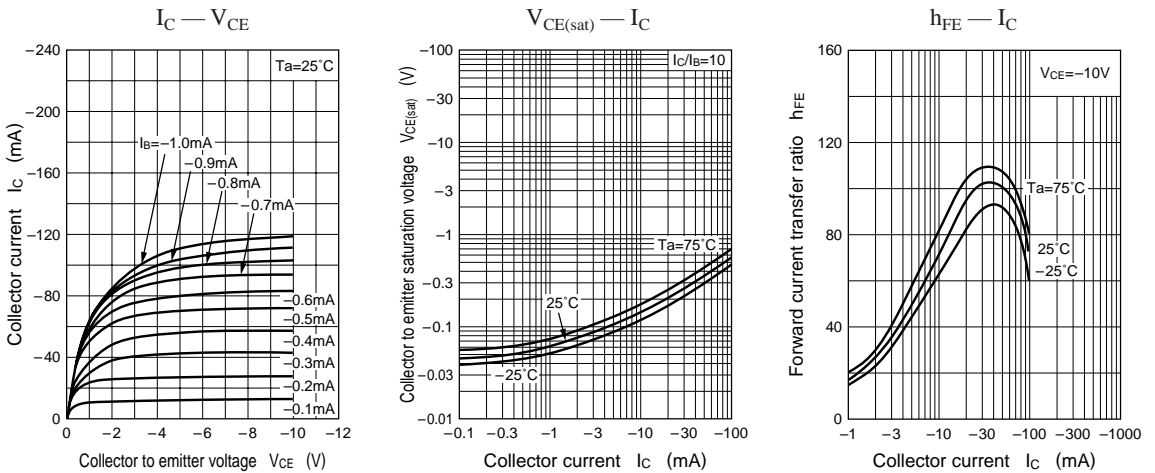
Characteristics charts of UN4117

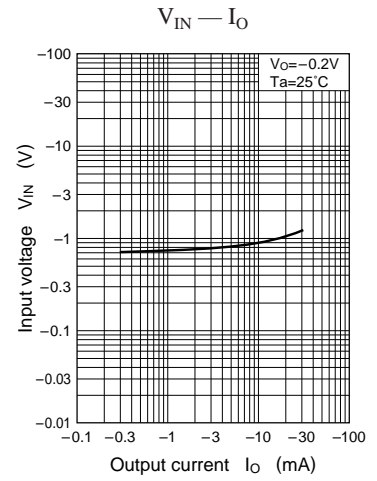
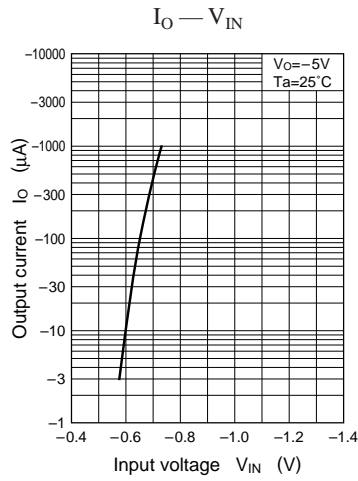
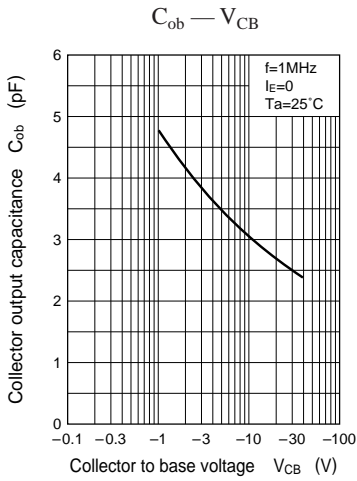


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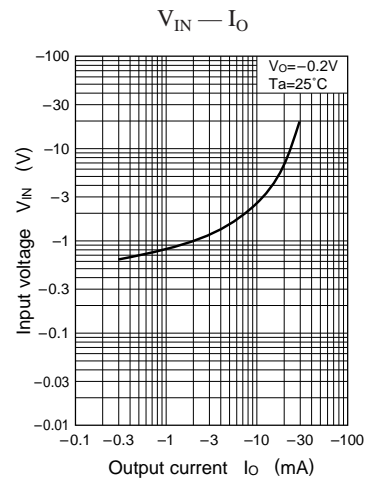
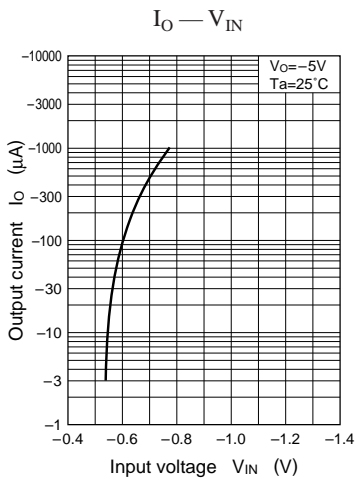
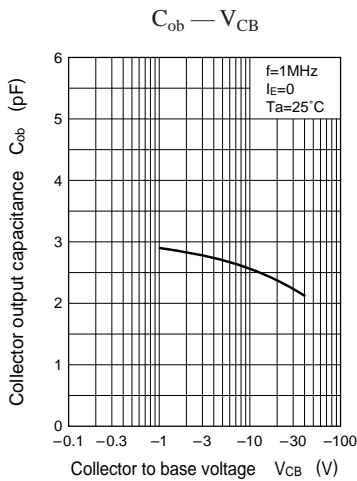
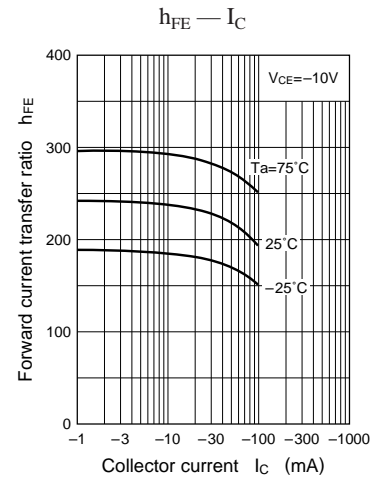
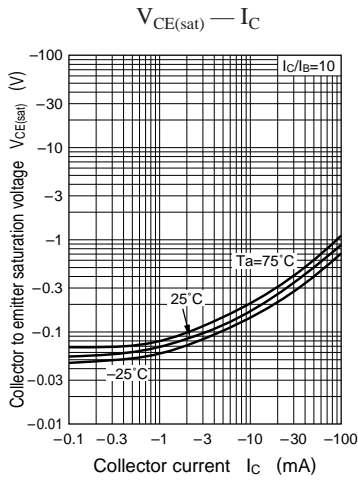
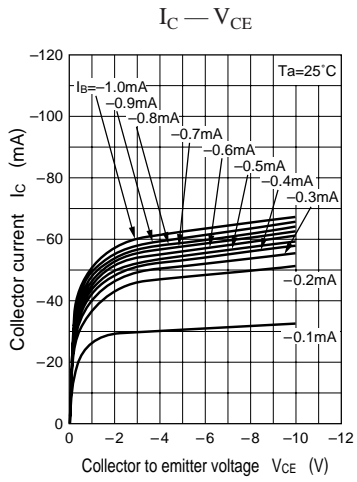


Characteristics charts of UN4119

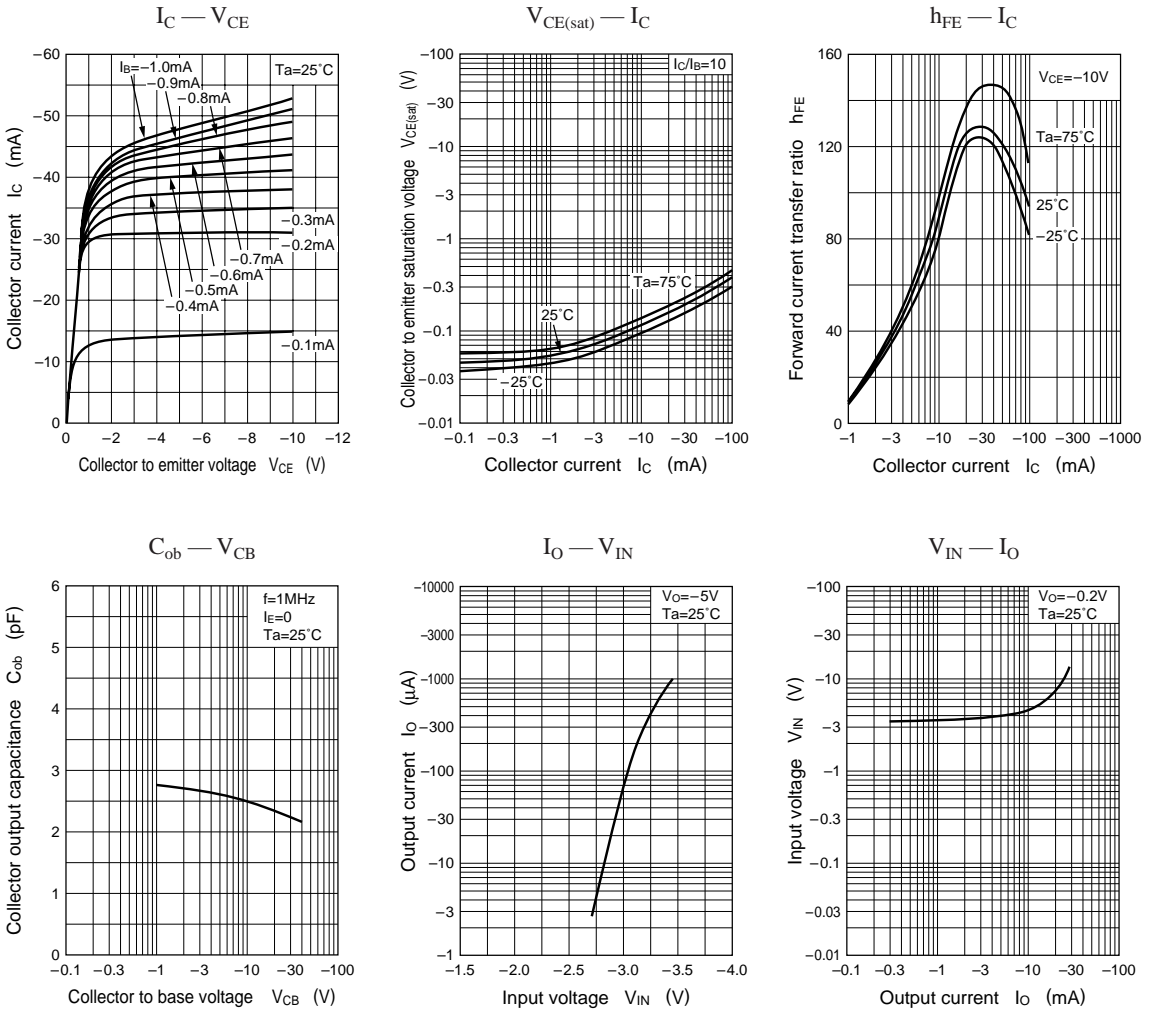




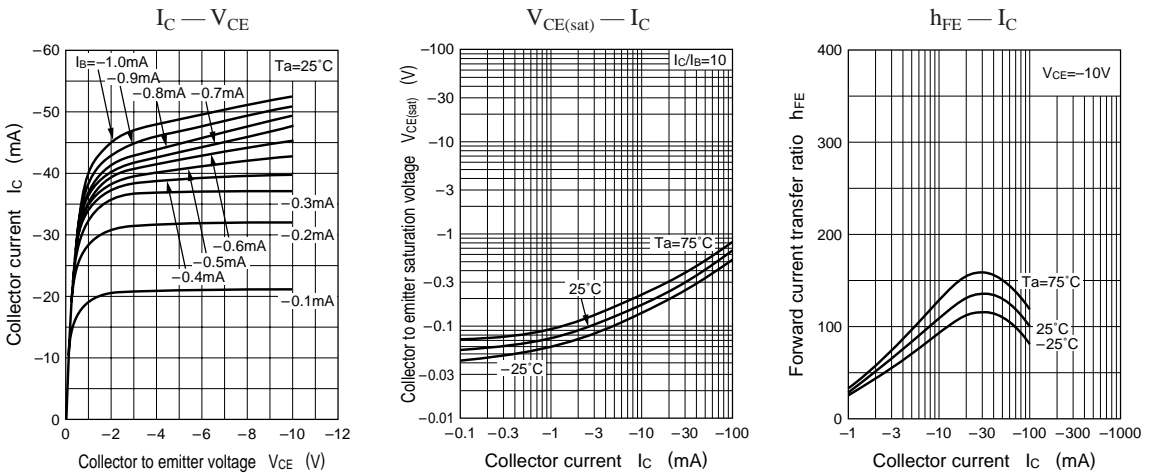
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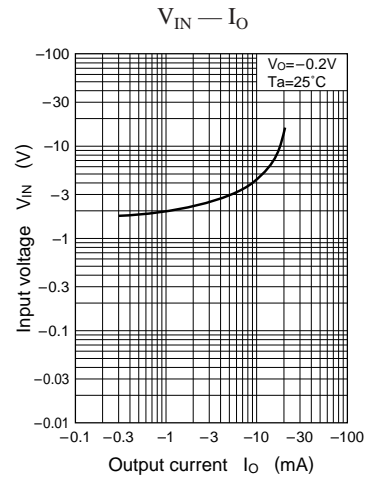
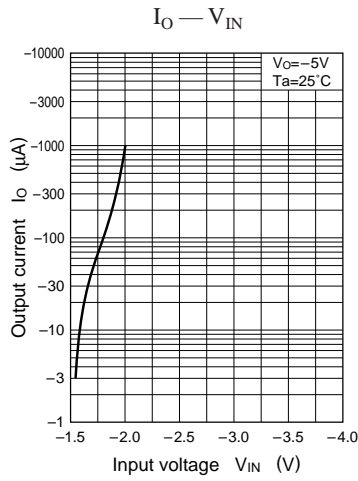
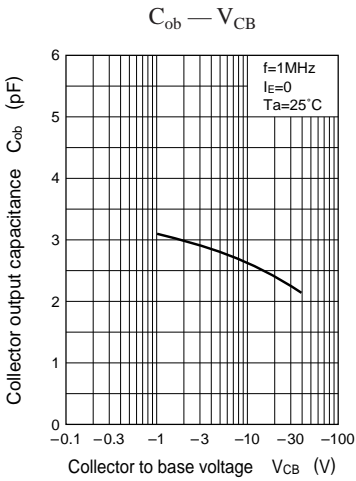


Characteristics charts of UN411D

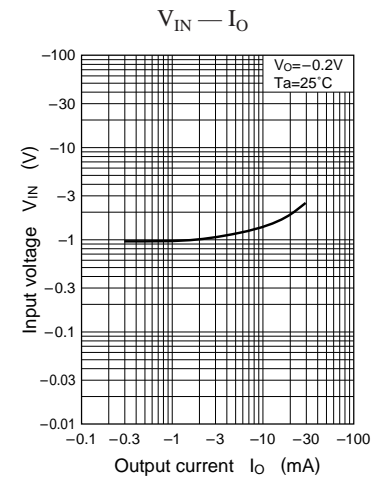
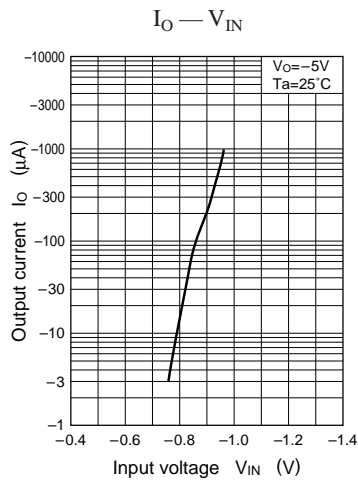
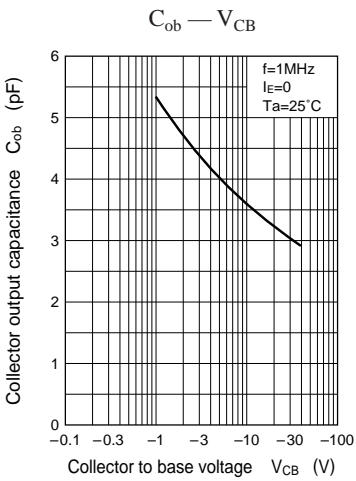
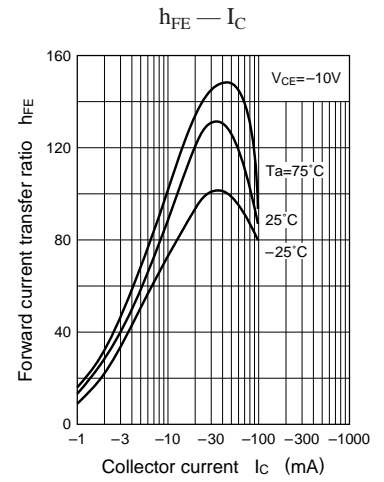
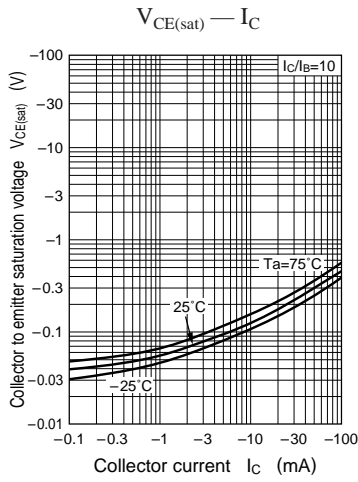
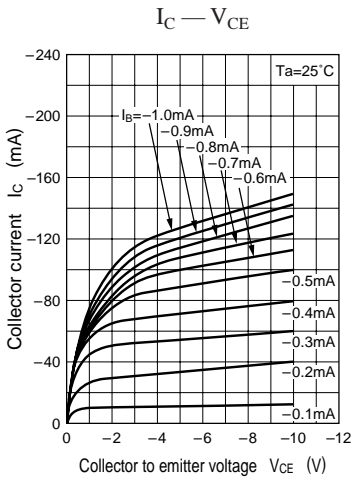


Characteristics charts of UN411E

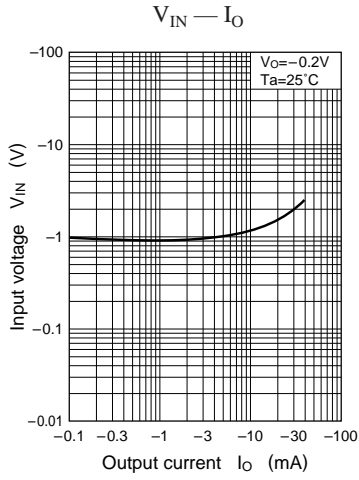
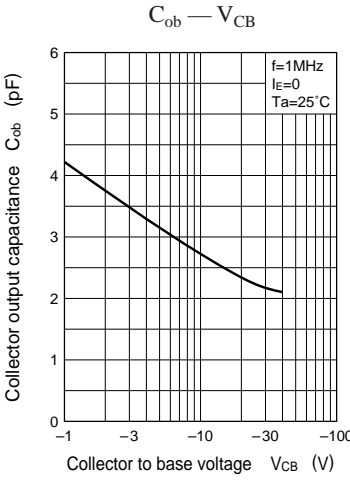
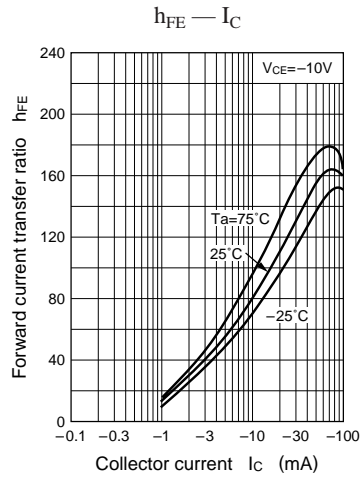
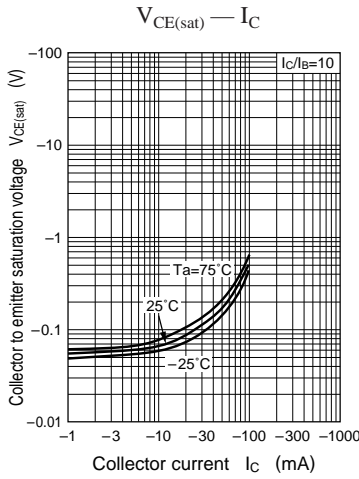
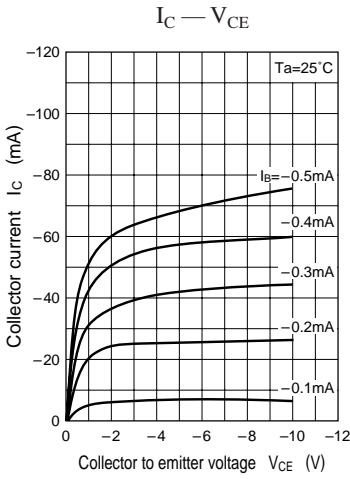




Characteristics charts of UN411F



Characteristics charts of UN411H



Characteristics charts of UN411L

