

UNR91XXJ Series (UN91XXJ Series)

Silicon PNP epitaxial planer type

For digital circuit

■ Features

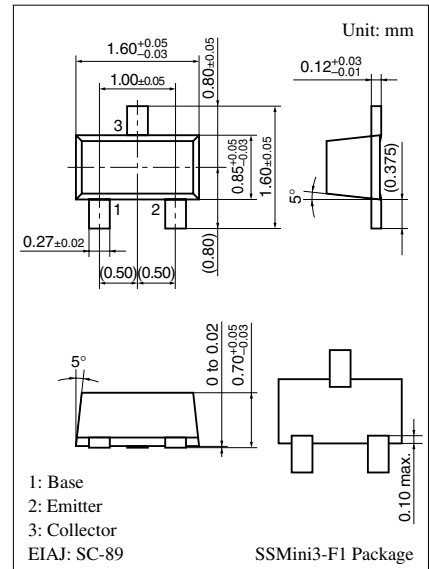
- Costs can be reduced through downsizing of the equipment and reduction of the number of parts.
- SS-mini type package, allowing automatic insertion through tape packing.

■ Resistance by Part Number

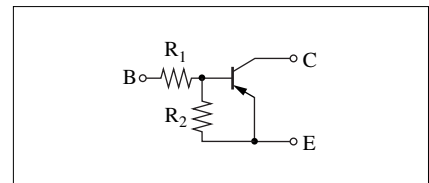
	Marking symbol (R ₁)	(R ₂)
• UNR9110J (UN9110J)	6L	47 kΩ —
• UNR9111J (UN9111J)	6A	10 kΩ 10 kΩ
• UNR9112J (UN9112J)	6B	22 kΩ 22 kΩ
• UNR9113J (UN9113J)	6C	47 kΩ 47 kΩ
• UNR9114J (UN9114J)	6D	10 kΩ 47 kΩ
• UNR9115J (UN9115J)	6E	10 kΩ —
• UNR9116J (UN9116J)	6F	4.7 kΩ —
• UNR9117J (UN9117J)	6H	22 kΩ —
• UNR9118J (UN9118J)	6I	0.51 kΩ 5.1 kΩ
• UNR9119J (UN9119J)	6K	1 kΩ 10 kΩ
• UNR911AJ	6X	100 kΩ 100 kΩ
• UNR911BJ	6Y	100 kΩ —
• UNR911CJ	6Z	— 47 kΩ
• UNR911DJ (UN911DJ)	6M	47 kΩ 10 kΩ
• UNR911EJ (UN911EJ)	6N	47 kΩ 22 kΩ
• UNR911FJ (UN911FJ)	6O	4.7 kΩ 10 kΩ
• UNR911HJ (UN911HJ)	6P	2.2 kΩ 10 kΩ
• UNR911LJ (UN911LJ)	6Q	4.7 kΩ 4.7 kΩ
• UNR911MJ	EI	2.2 kΩ 47 kΩ
• UNR911NJ	EW	4.7 kΩ 47 kΩ
• UNR911TJ (UN911TJ)	EY	22 kΩ 47 kΩ
• UNR911VJ	FC	2.2 kΩ 2.2 kΩ

■ Absolute Maximum Ratings T_a = 25°C

Parameter	Symbol	Rating	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	125	mW
Junction temperature	T _j	125	°C
Storage temperature	T _{stg}	-55 to +125	°C



Internal Connection



(Note) The part number in the parenthesis shows conventional part number.

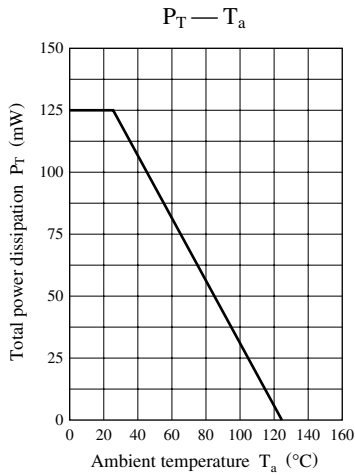
■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter		Symbol	Conditions	Min	Typ	Max	Unit	
Collector cutoff current		I_{CBO}	$V_{CB} = -50\text{ V}, I_E = 0$			-0.1	μA	
		I_{CEO}	$V_{CE} = -50\text{ V}, I_B = 0$			-0.5		
Emitter cutoff current	UNR9111J	I_{EBO}	$V_{EB} = -6\text{ V}, I_C = 0$			-0.5	mA	
	UNR9112J/9114J/911DJ/ 911EJ/911MJ/911NJ/911TJ					-0.2		
	UNR9113J/911AJ					-0.1		
	UNR9115J/9116J/9117J/ 9110J/911BJ					-0.01		
	UNR911FJ/911HJ					-1.0		
	UNR9119J					-1.5		
	UNR9118J/911LJ/911CJ/911VJ					-2.0		
Collector to base voltage		V_{CBO}	$I_C = -10\ \mu\text{A}, I_E = 0$	-50			V	
Collector to emitter voltage		V_{CEO}	$I_C = -2\text{ mA}, I_B = 0$	-50			V	
Forward current transfer ratio	UNR9111J	h_{FE}	$V_{CE} = -10\text{ V}, I_C = -5\text{ mA}$	35				
	UNR9112J/911EJ			60				
	UNR9113J/9114J/911AJ/ 911CJ/911MJ			80				
	UNR9115J/9116J/9117J/ 9110J/911BJ			160		460		
	UNR9118J/911LJ			20				
	UNR9119J/911DJ/911FJ/911HJ			30				
	UNR911NJ/911TJ			80		400		
	UNR911VJ			6		20		
Collector to emitter saturation voltage		$V_{CE(sat)}$	$I_C = -10\text{ mA}, I_B = -0.3\text{ mA}$			-0.25	V	
High-level output voltage		V_{OH}	$V_{CC} = -5\text{ V}, V_B = -0.5\text{ V}, R_L = 1\text{ k}\Omega$	-4.9			V	
Low-level output voltage		V_{OL}	$V_{CC} = -5\text{ V}, V_B = -2.5\text{ V}, R_L = 1\text{ k}\Omega$			-0.2	V	
				UNR9113J/911BJ	$V_{CC} = -5\text{ V}, V_B = -3.5\text{ V}, R_L = 1\text{ k}\Omega$			
				UNR911DJ	$V_{CC} = -5\text{ V}, V_B = -10\text{ V}, R_L = 1\text{ k}\Omega$			
				UNR911EJ	$V_{CC} = -5\text{ V}, V_B = -6\text{ V}, R_L = 1\text{ k}\Omega$			
				UNR911AJ	$V_{CC} = -5\text{ V}, V_B = -5\text{ V}, R_L = 1\text{ k}\Omega$			
Transition frequency		f_T	$V_{CB} = -10\text{ V}, I_E = 1\text{ mA}, f = 200\text{ MHz}$		80		MHz	
Input resistance	UNR9118J	R_1		-30%	0.51	+30%	k Ω	
	UNR9119J				1			
	UNR911HJ/911MJ/911VJ				2.2			
	UNR9116J/911FJ/911LJ/911NJ				4.7			
	UNR9111J/9114J/9115J				10			
	UNR9112J/9117J/911TJ				22			
	UNR9110J/9113J/911DJ/911EJ				47			
	UNR911AJ/911BJ				100			

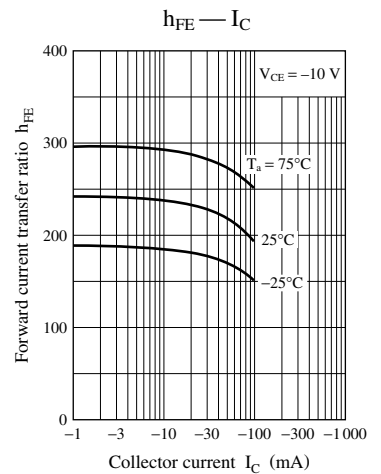
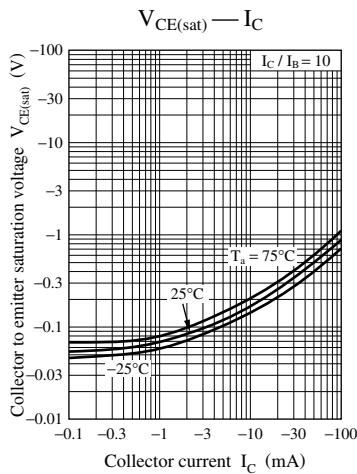
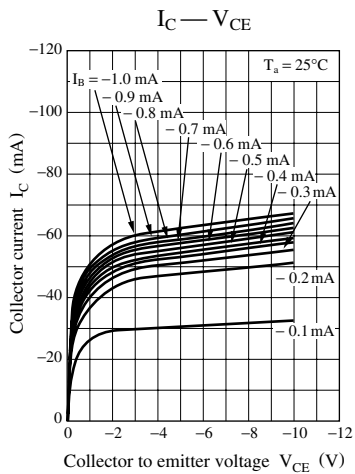
■ Electrical Characteristics (continued) $T_a = 25^\circ\text{C}$

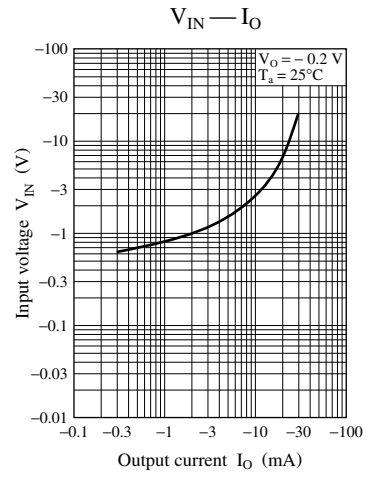
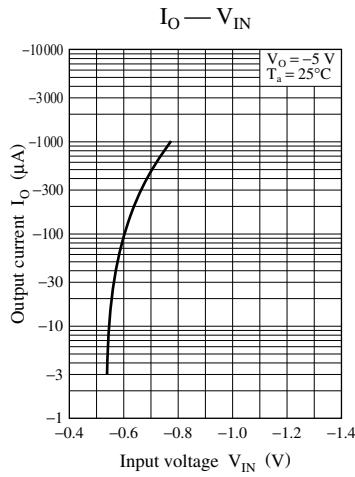
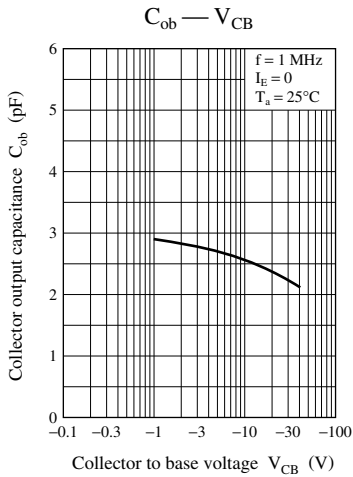
Parameter		Symbol	Conditions	Min	Typ	Max	Unit
Resistance ratio	UNR9111J/9112J/9113J/9114J	R_1/R_2		0.8	1.0	1.2	
	UNR9114J			0.17	0.21	0.25	
	UNR9118J/9119J			0.08	0.1	0.12	
	UNR911DJ			3.7	4.7	5.7	
	UNR911EJ			1.7	2.14	2.6	
	UNR911FJ			0.37	0.47	0.57	
	UNR911HJ			0.17	0.22	0.27	
	UNR911MJ				0.047		
	UNR911NJ				0.1		
	UNR911TJ				0.47		
	UNR911AJ/911VJ				1.0		
Resistance between emitter to base	UNR911CJ	R_2		-30%	47	+30%	$\text{k}\Omega$

Common characteristics chart

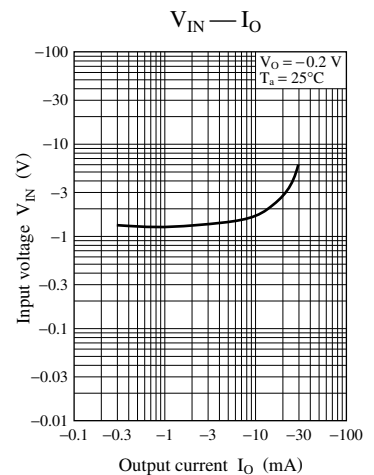
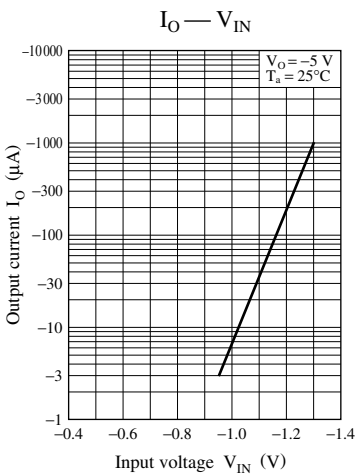
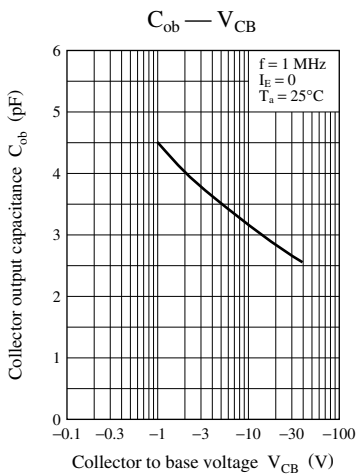
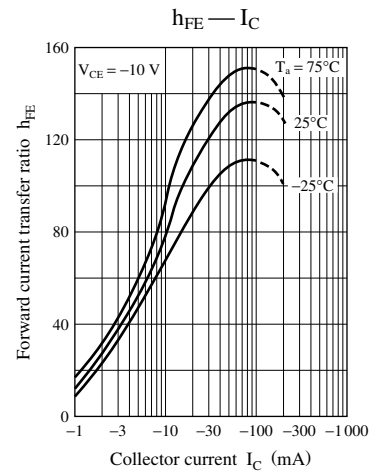
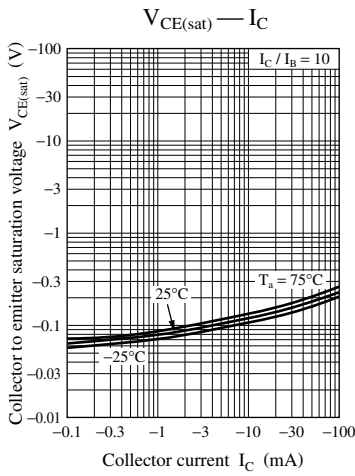
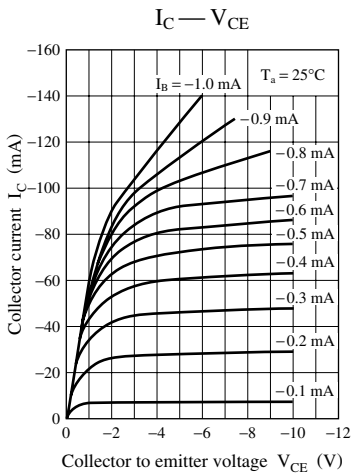


Characteristics chart of UNR9110J

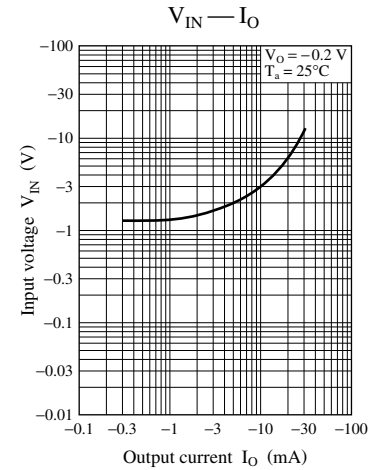
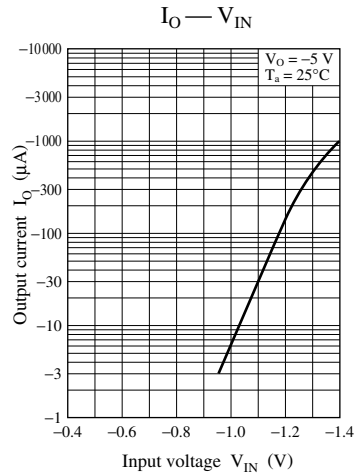
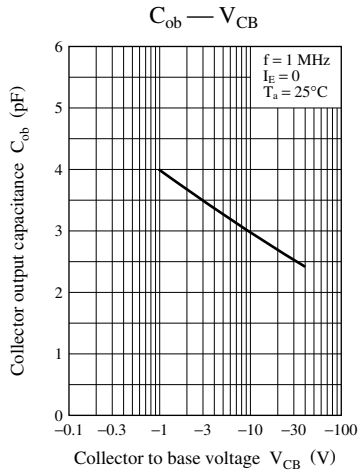
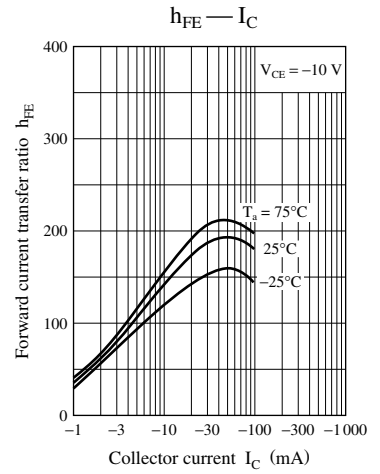
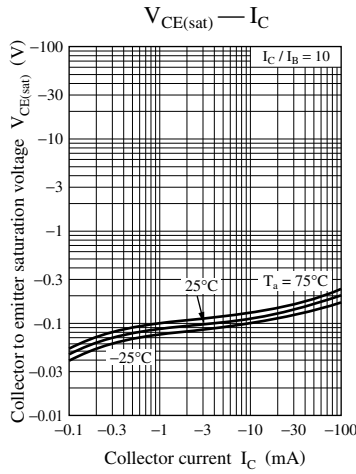
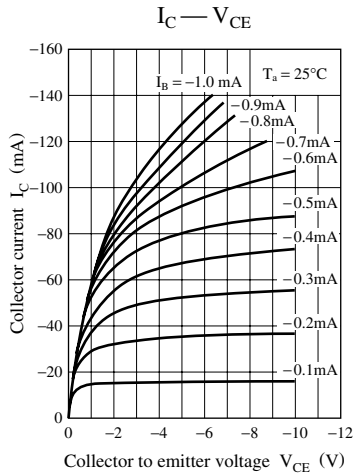




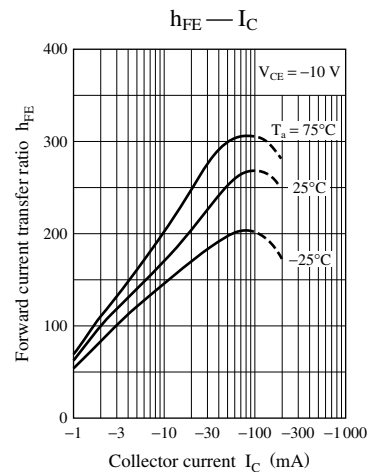
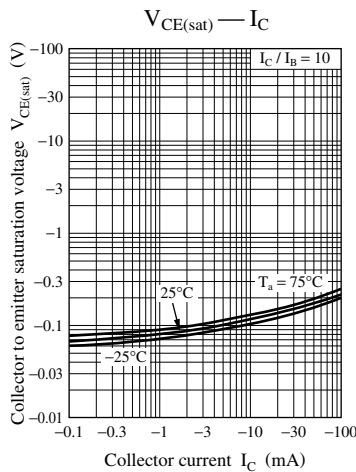
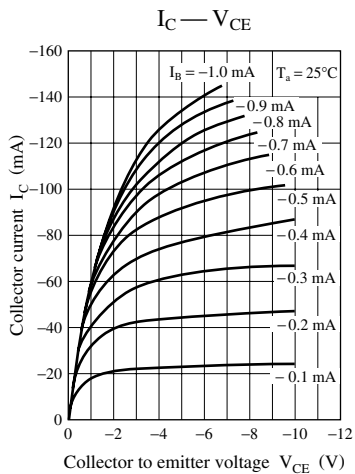
Characteristics chart of UNR9111J

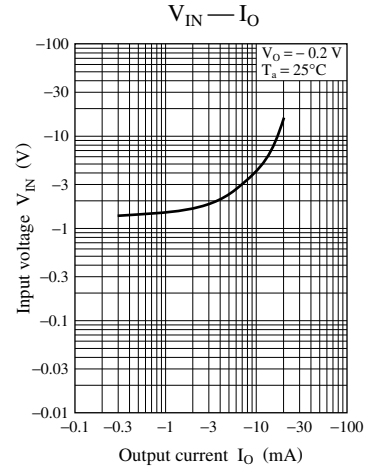
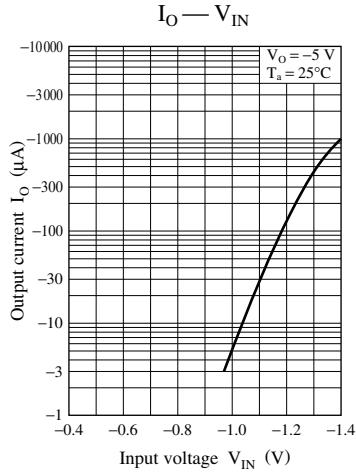
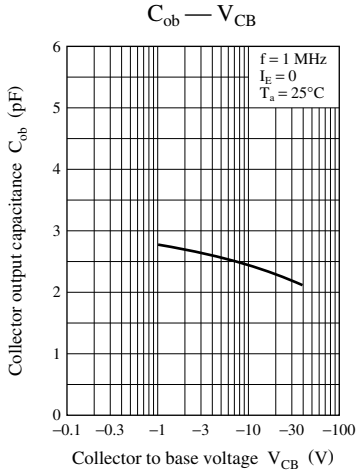


Characteristics chart of UNR9112J

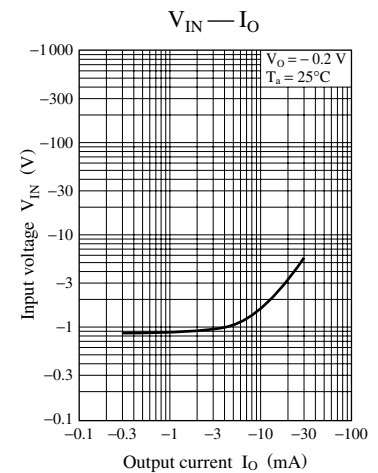
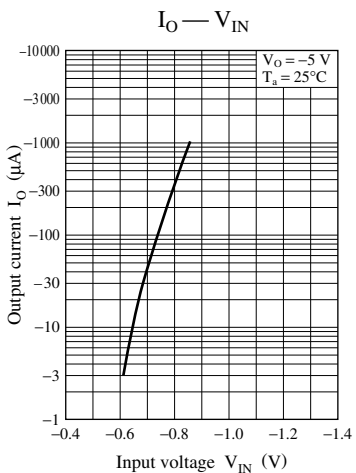
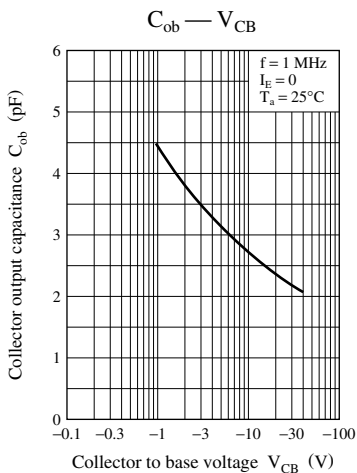
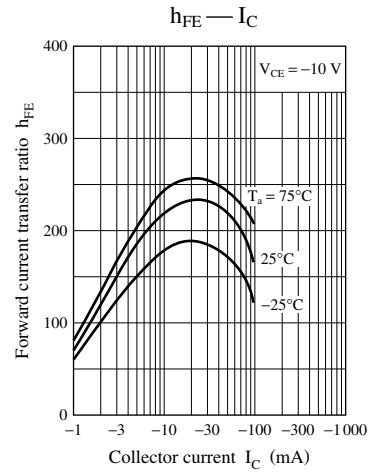
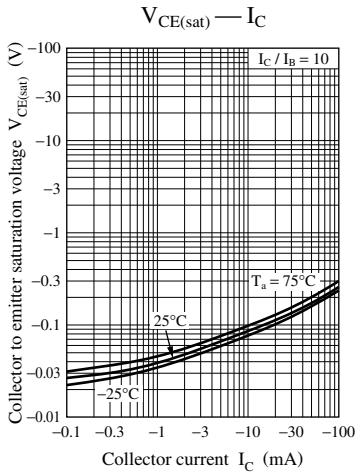
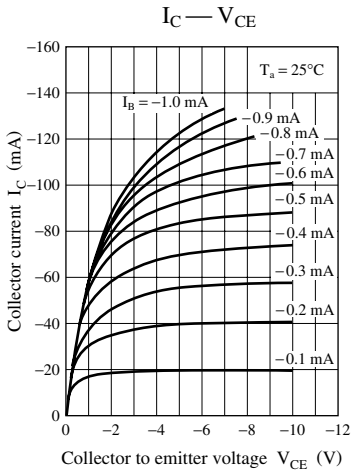


Characteristics chart of UNR9113J

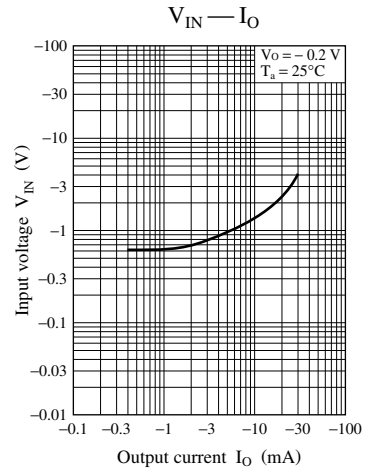
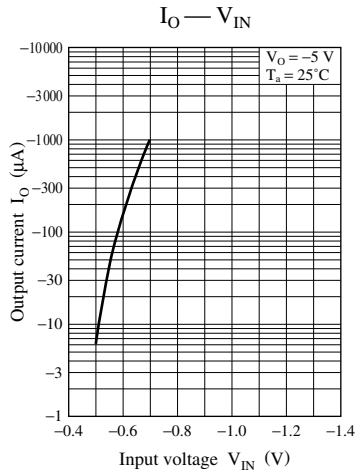
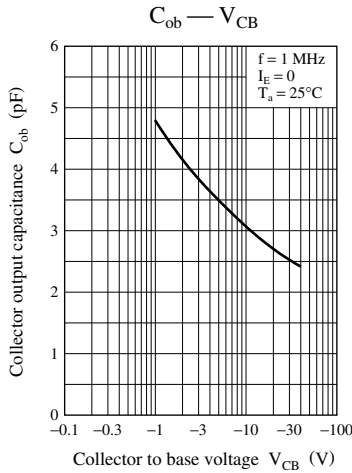
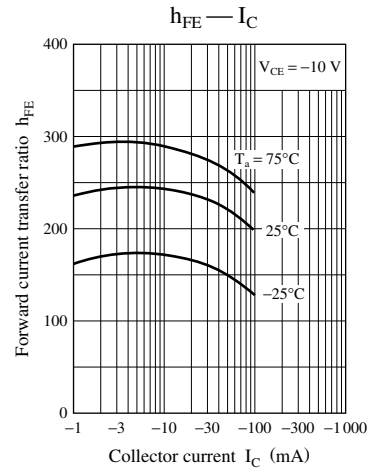
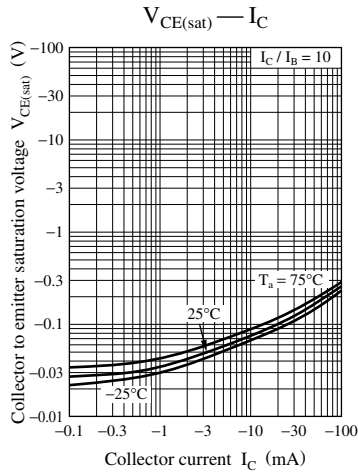
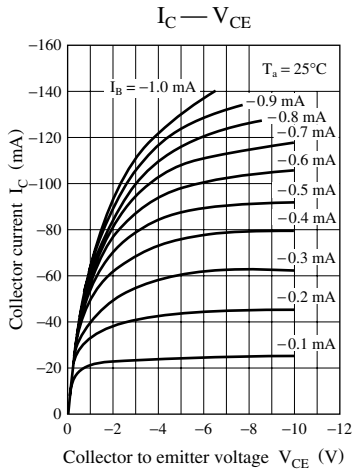




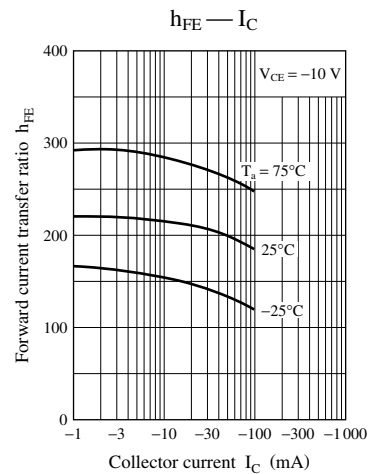
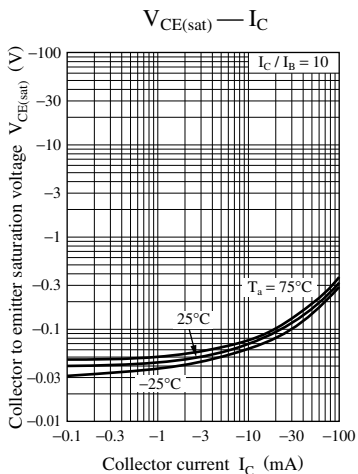
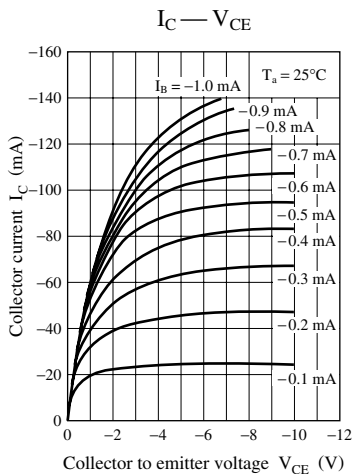
Characteristics chart of UNR9114J

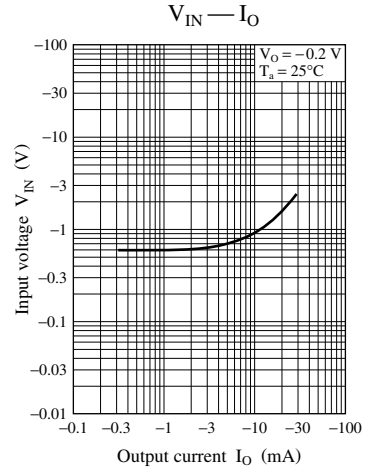
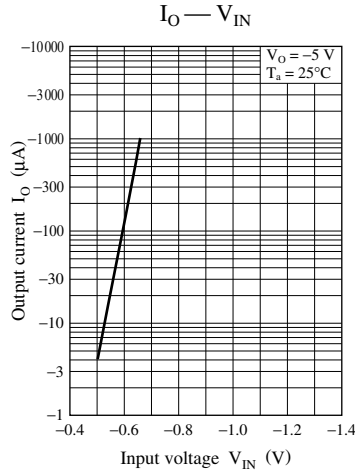
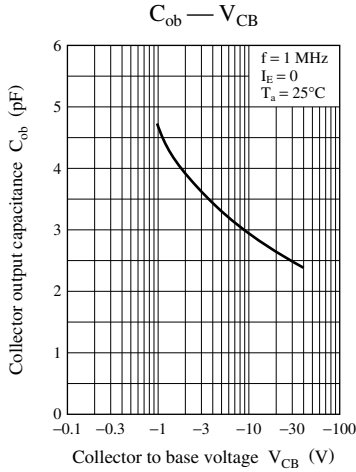


Characteristics chart of UNR9115J

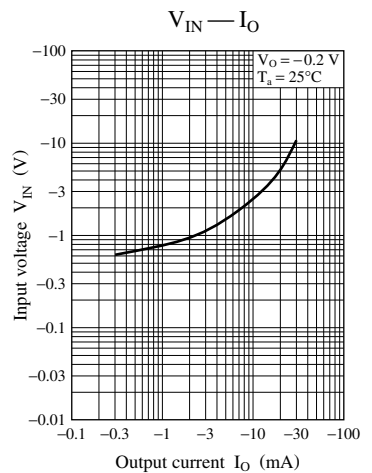
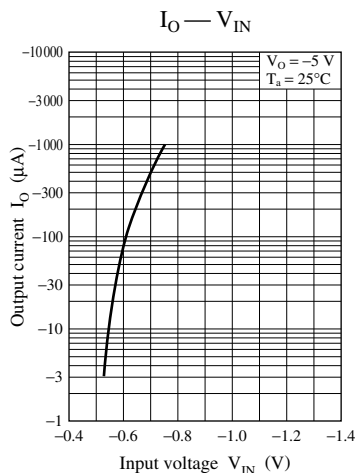
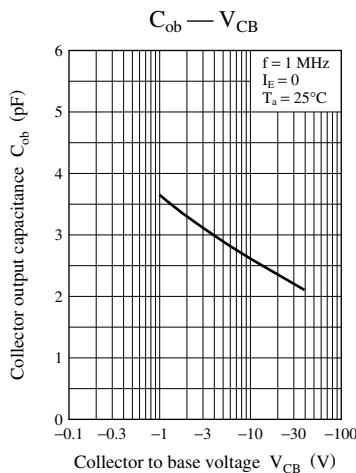
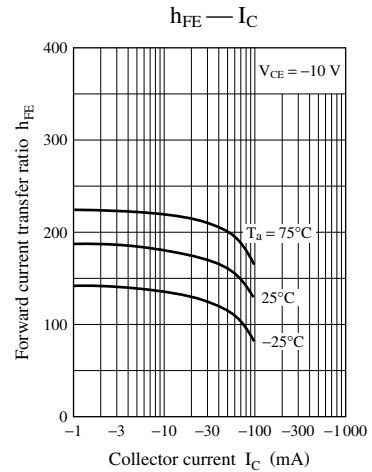
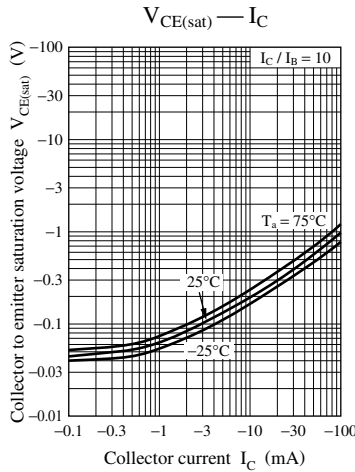
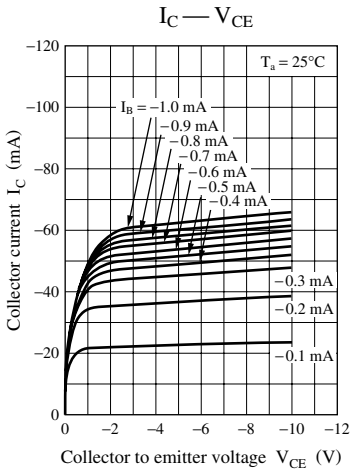


Characteristics chart of UNR9116J

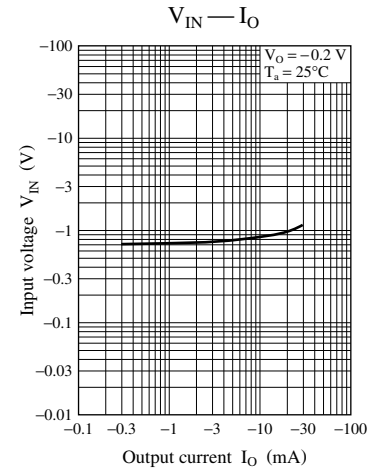
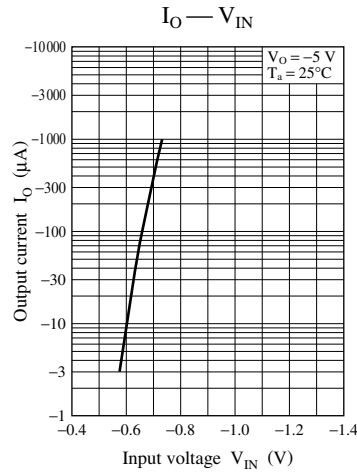
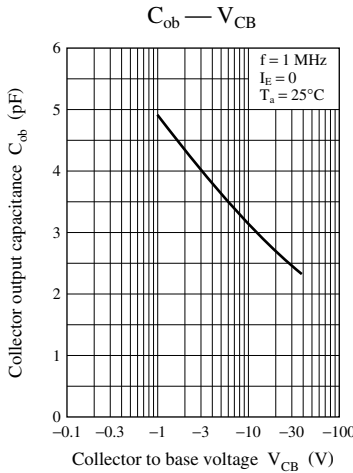
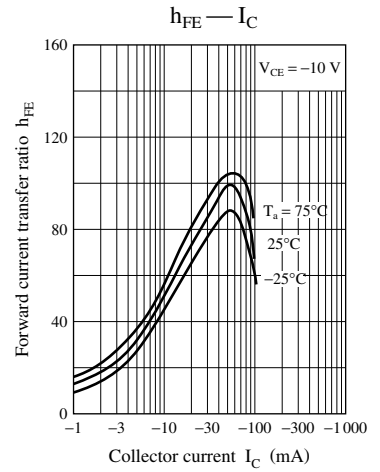
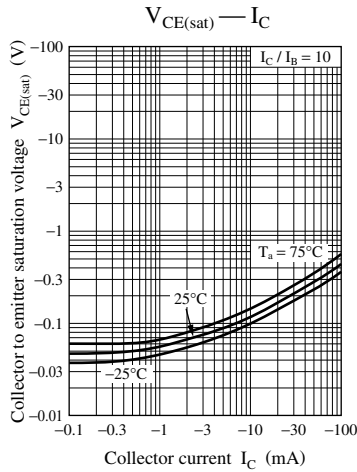
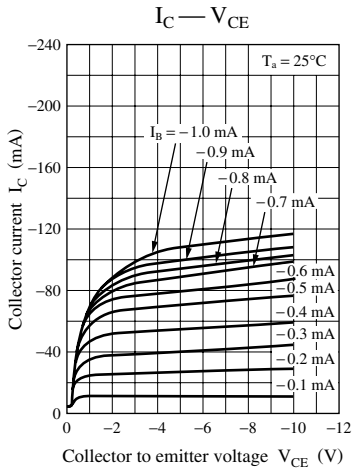




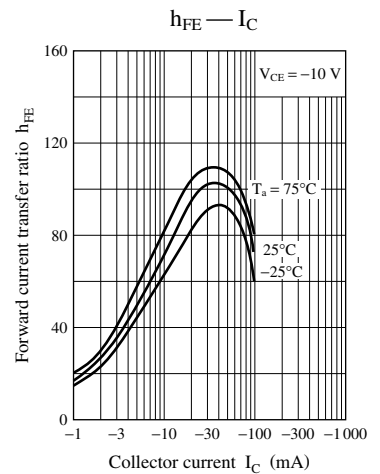
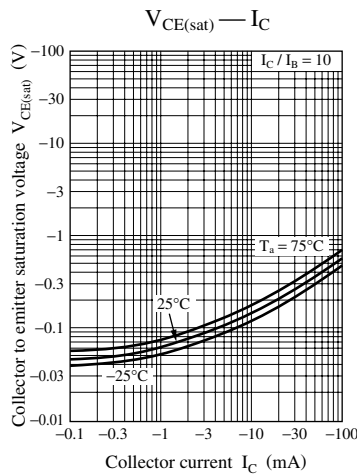
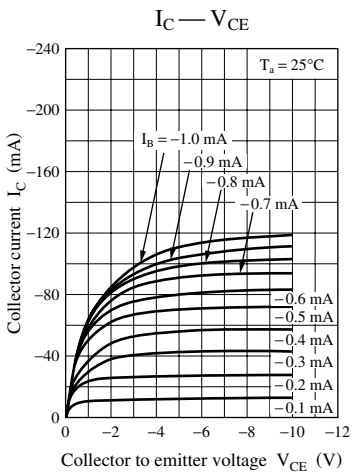
Characteristics chart of UNR9117J

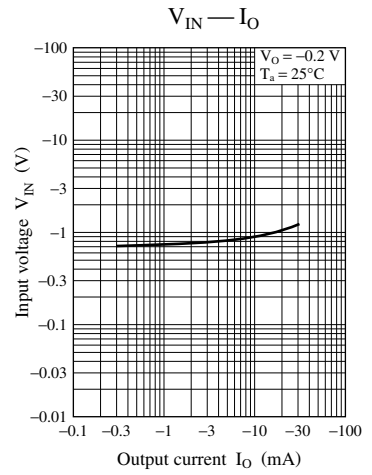
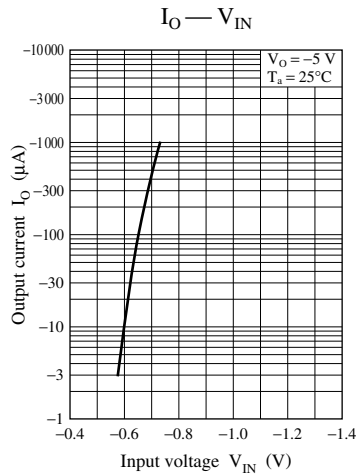
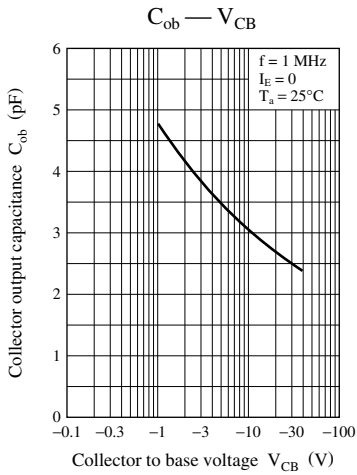


Characteristics chart of UNR9118J

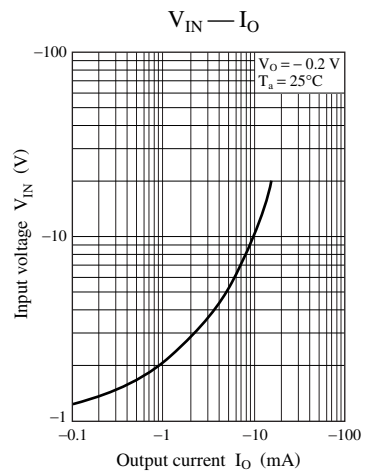
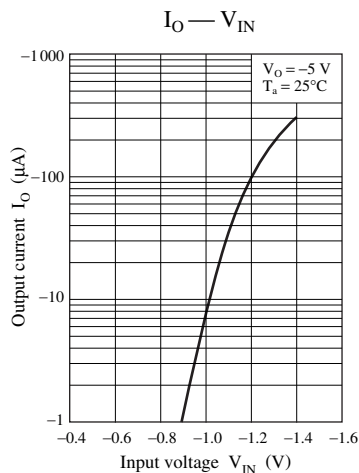
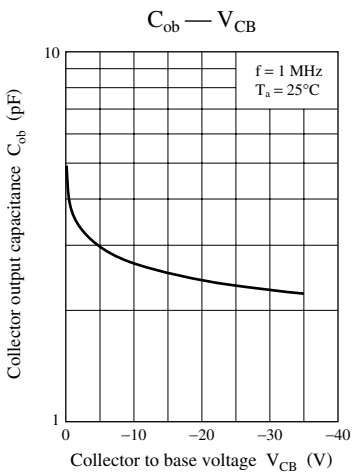
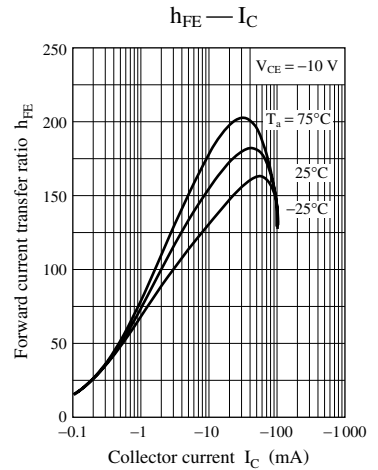
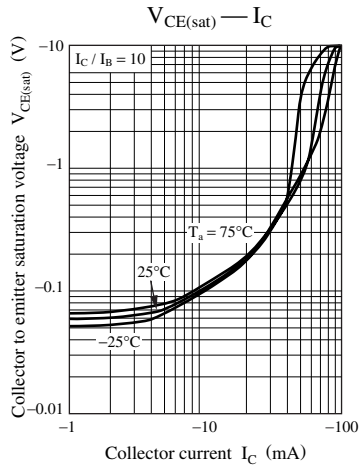
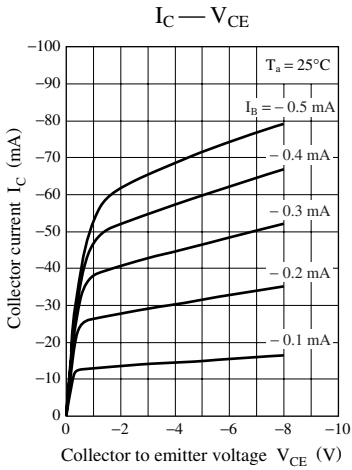


Characteristics chart of UNR9119J

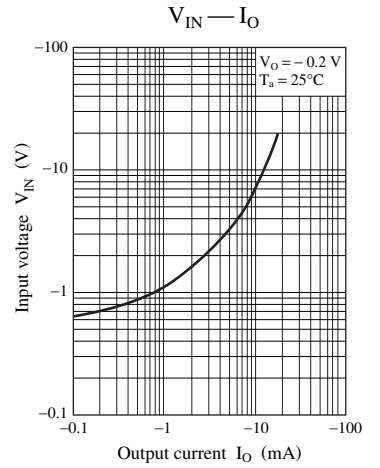
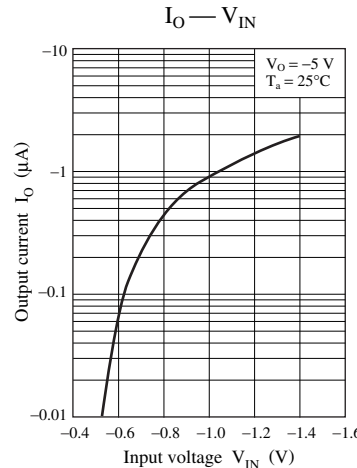
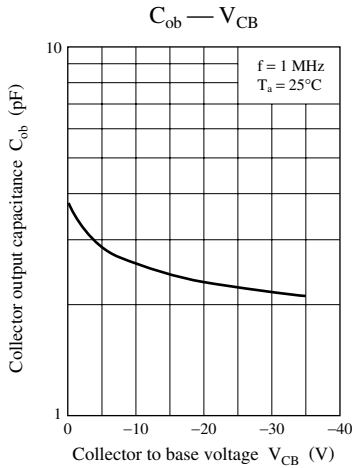
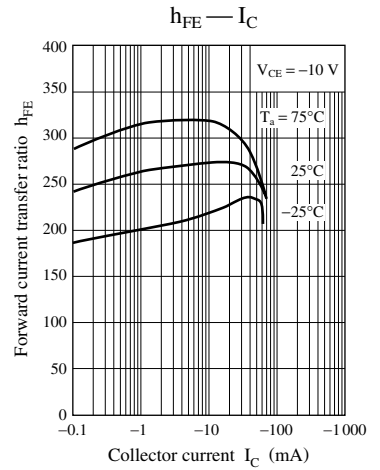
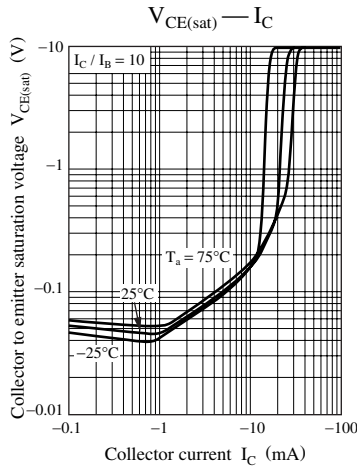
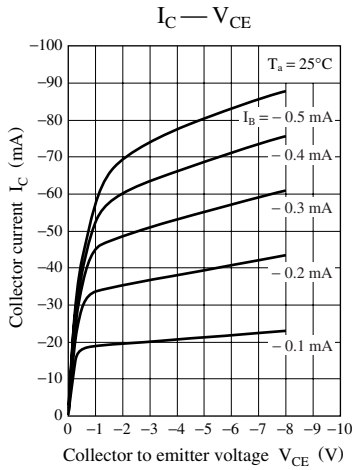




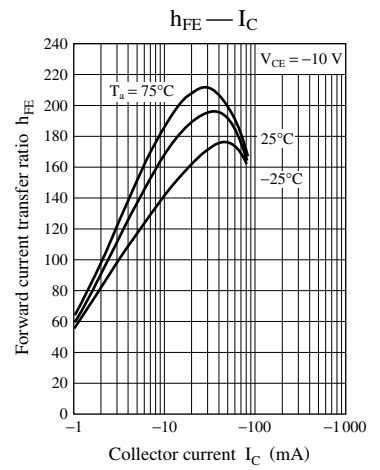
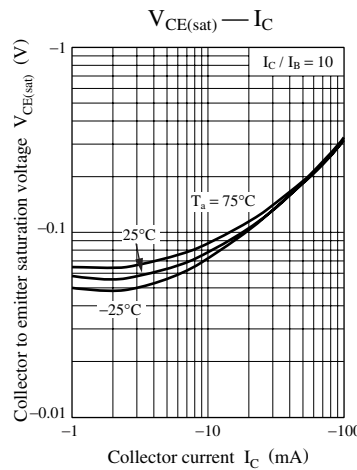
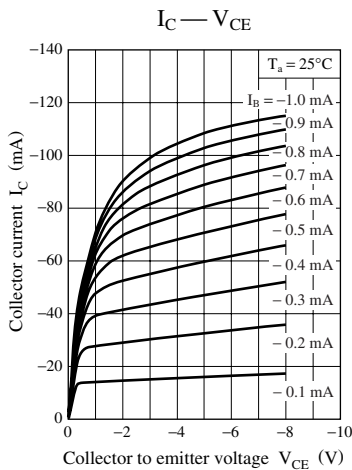
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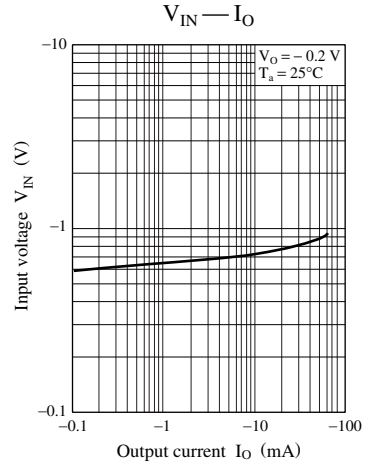
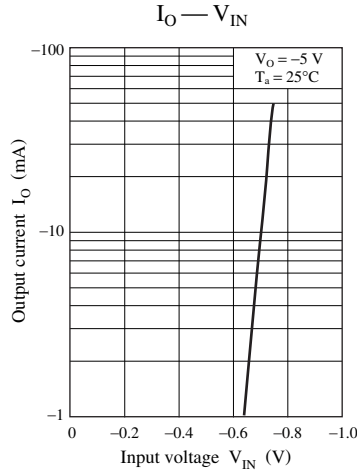
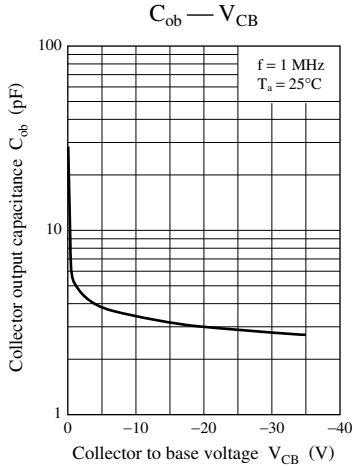


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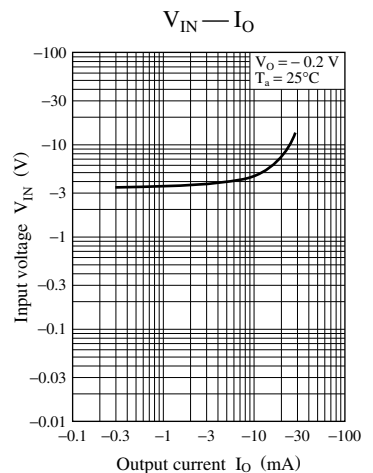
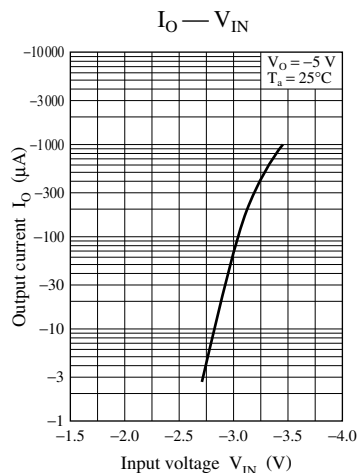
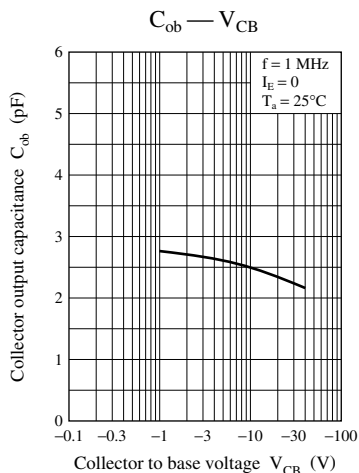
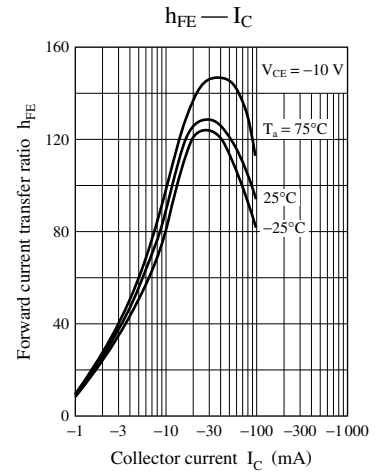
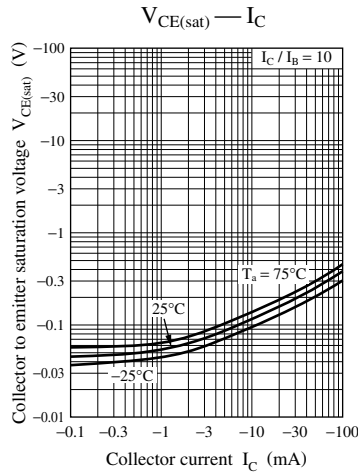
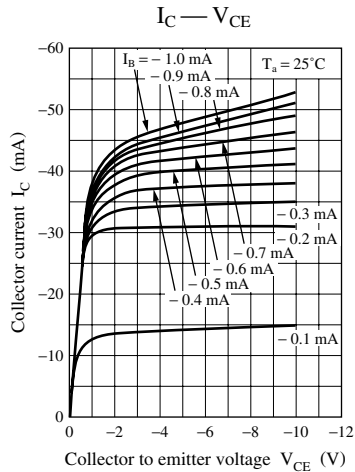


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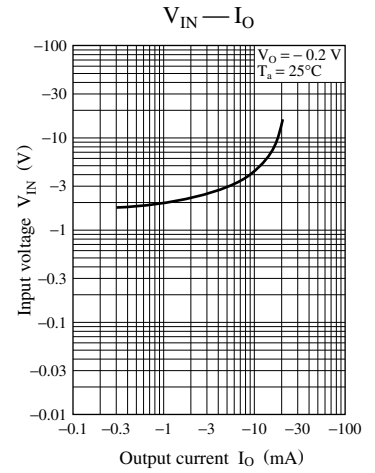
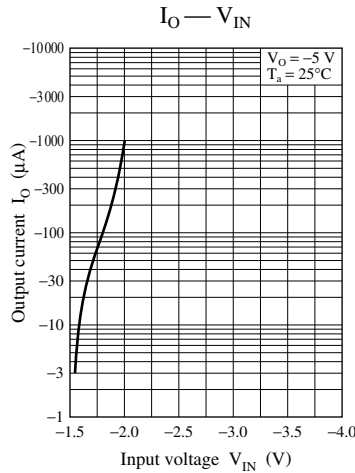
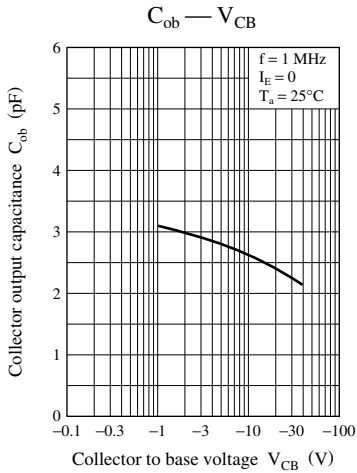
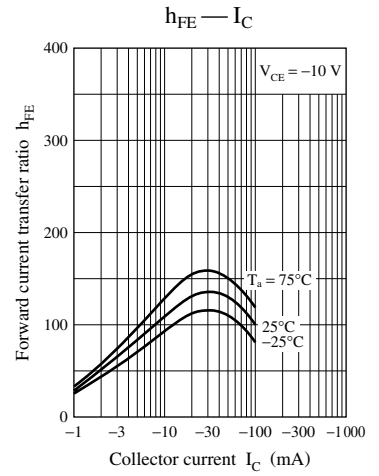
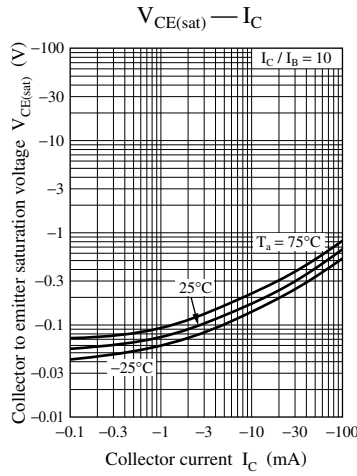
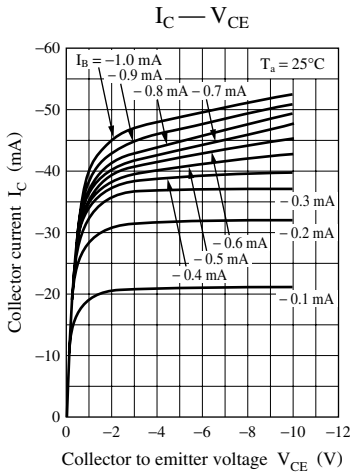




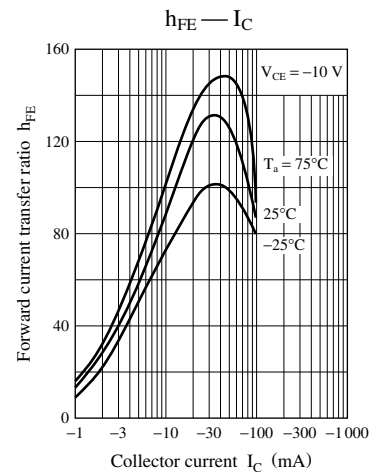
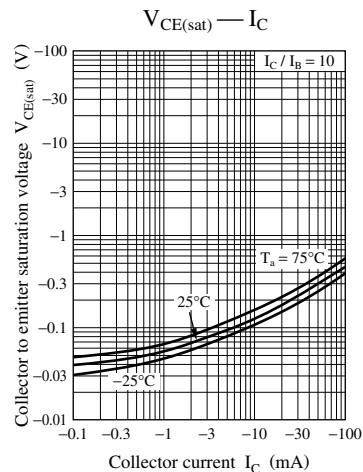
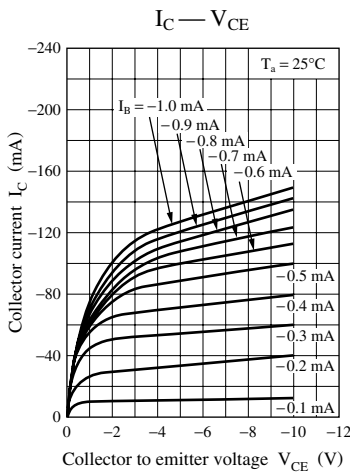
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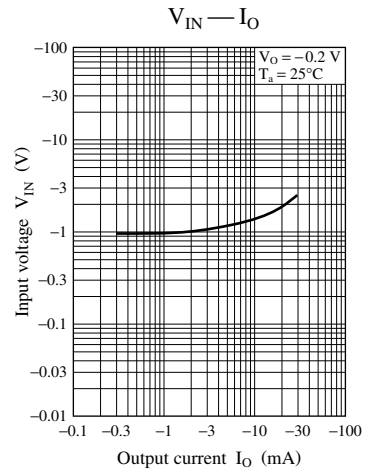
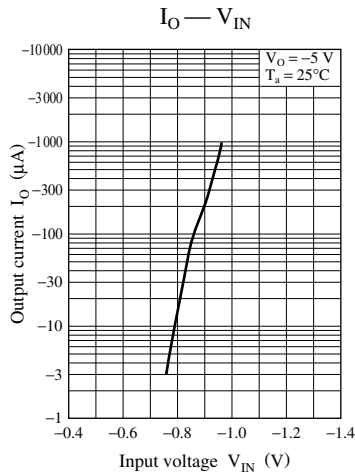
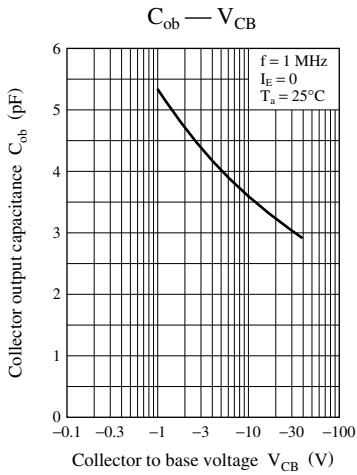


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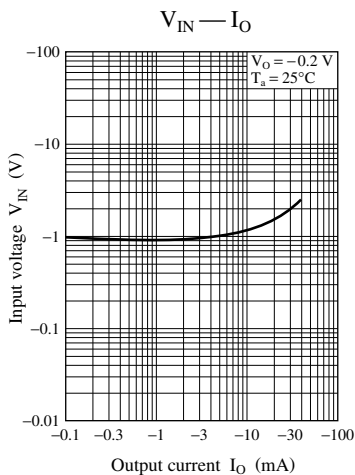
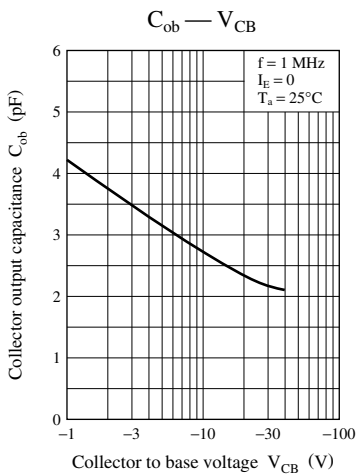
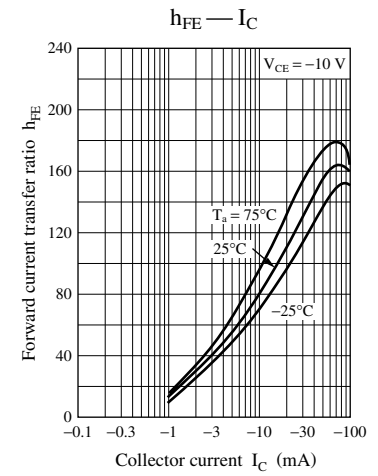
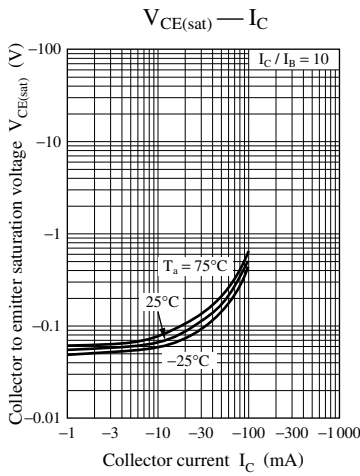
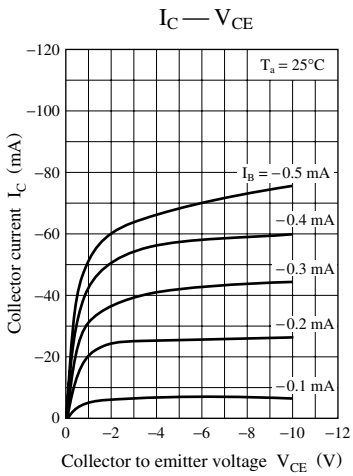


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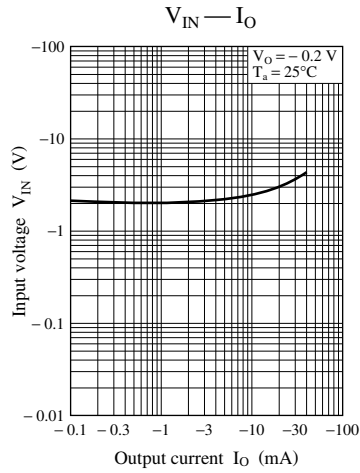
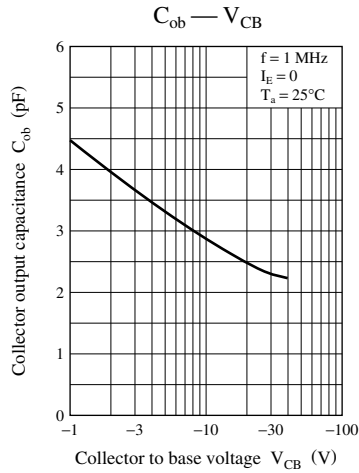
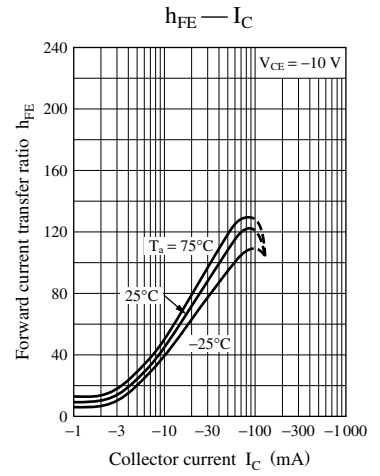
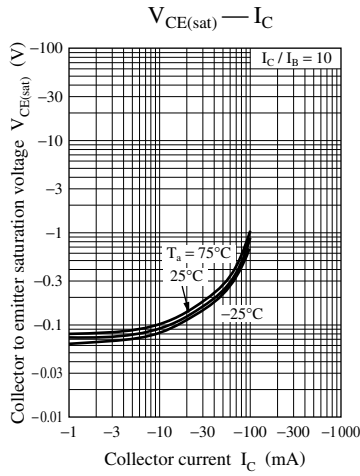
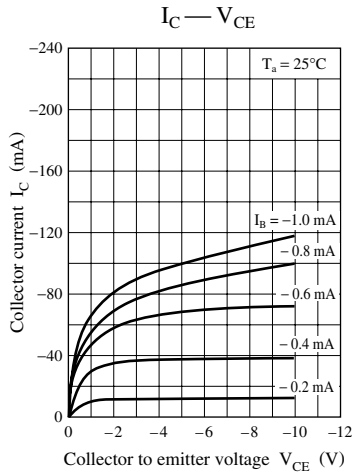




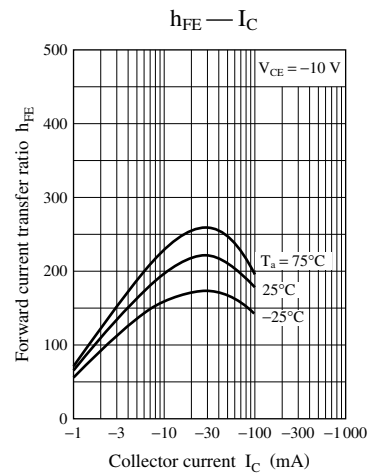
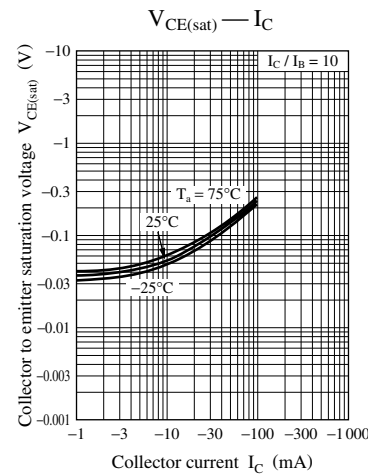
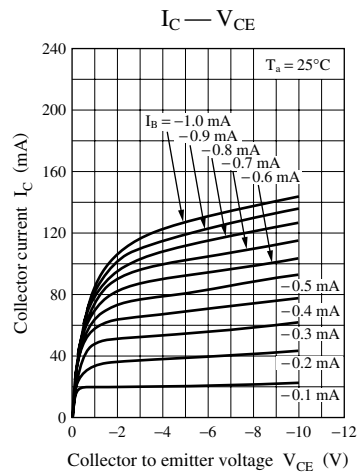
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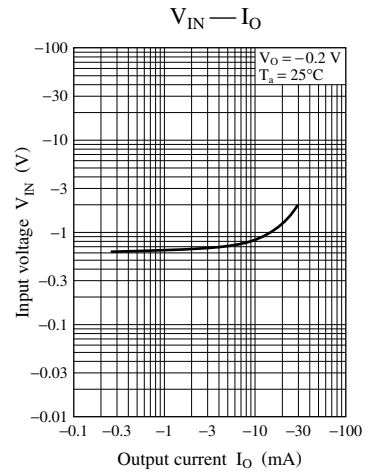
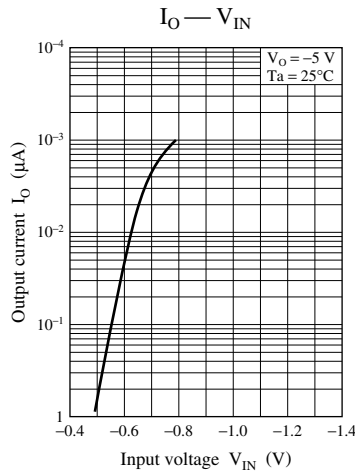
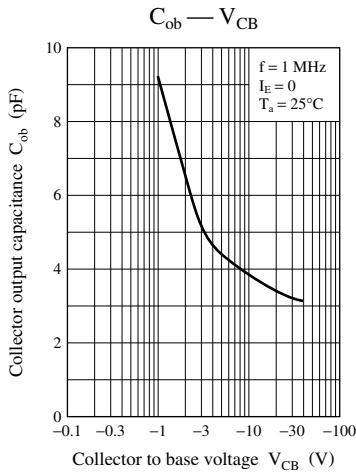


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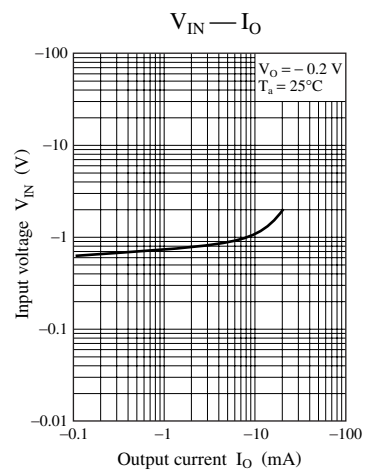
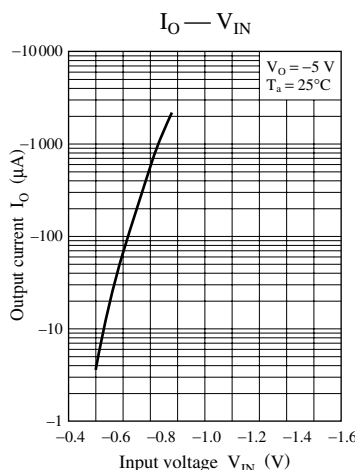
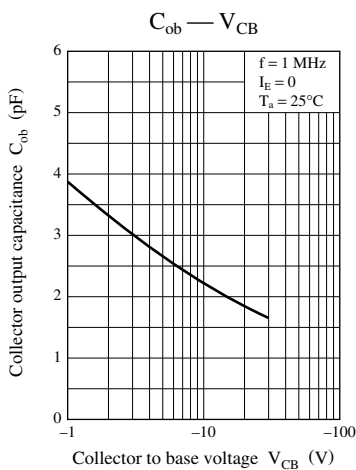
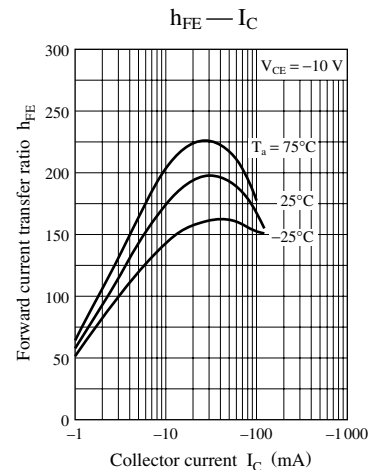
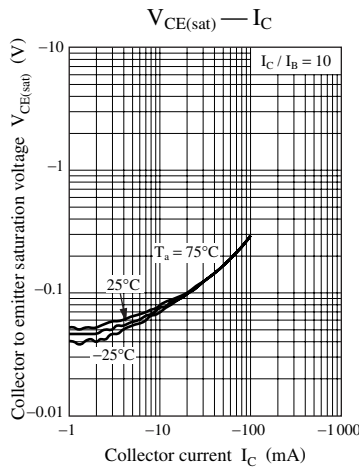
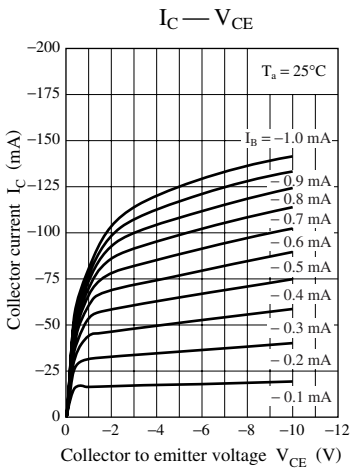


Characteristics chart of UNR911MJ

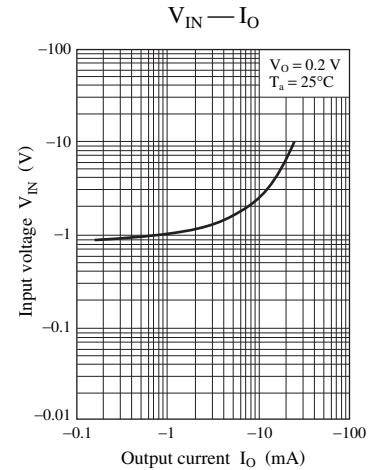
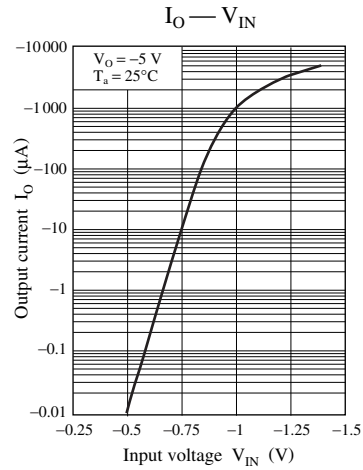
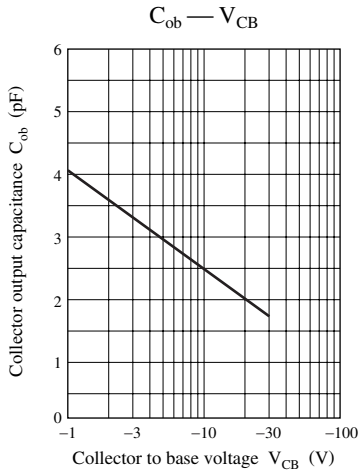
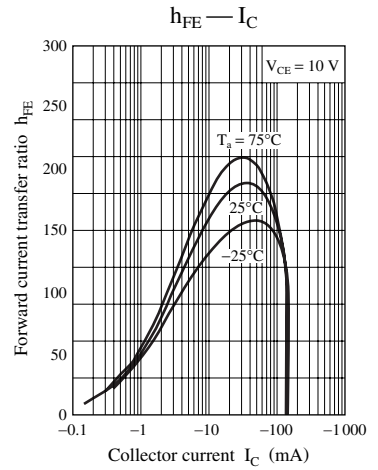
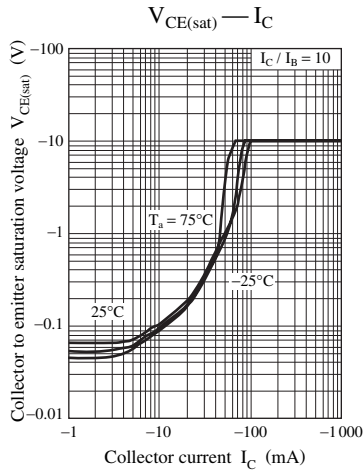
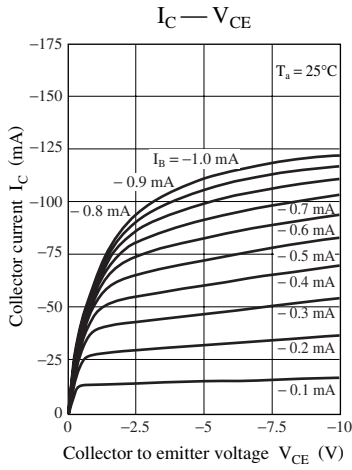




Characteristics chart of UNR911NJ



Characteristics chart of UNR911TJ



Characteristics chart of UNR911VJ

