

# UNR911xG Series

## Silicon PNP epitaxial planar type

For digital circuits

### ■ 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.

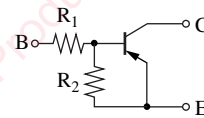
### ■ Resistance by Part Number

	Marking Symbol	(R <sub>1</sub> )	(R <sub>2</sub> )
• UNR9110G	6L	47 kΩ	—
• UNR9111G	6A	10 kΩ	10 kΩ
• UNR9112G	6B	22 kΩ	22 kΩ
• UNR9113G	6C	47 kΩ	47 kΩ
• UNR9114G	6D	10 kΩ	47 kΩ
• UNR9115G	6E	10 kΩ	—
• UNR9116G	6F	4.7 kΩ	—
• UNR9117G	6H	22 kΩ	—
• UNR9118G	6I	0.51 kΩ	5.1 kΩ
• UNR9119G	6K	1 kΩ	10 kΩ
• UNR911AG	6X	100 kΩ	100 kΩ
• UNR911BG	6Y	100 kΩ	—
• UNR911CG	6Z	—	47 kΩ
• UNR911DG	6M	47 kΩ	10 kΩ
• UNR911EG	6N	47 kΩ	22 kΩ
• UNR911FG	6O	4.7 kΩ	10 kΩ
• UNR911HG	6P	2.2 kΩ	10 kΩ
• UNR911LG	6Q	4.7 kΩ	4.7 kΩ
• UNR911MG	EI	2.2 kΩ	47 kΩ
• UNR911NG	EW	4.7 kΩ	47 kΩ
• UNR911TG	EY	22 kΩ	47 kΩ
• UNR911VG	FC	2.2 kΩ	2.2 kΩ

### ■ Package

- Code  
SSMini3-F3
- Pin Name  
1: Base  
2: Emitter  
3: Collector

### ■ Internal Connection



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

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V <sub>CBO</sub>	-50	V
Collector-emitter voltage (Base open)	V <sub>CEO</sub>	-50	V
Collector current	I <sub>C</sub>	-100	mA
Total power dissipation	P <sub>T</sub>	125	mW
Junction temperature	T <sub>j</sub>	125	°C
Storage temperature	T <sub>stg</sub>	-55 to +125	°C

### ■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

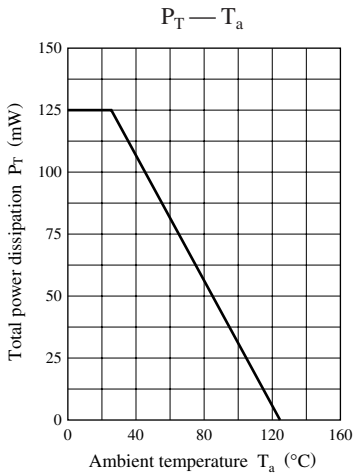
Parameter		Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)		$V_{CBO}$	$I_C = -10 \mu\text{A}, I_E = 0$	-50			V
Collector-emitter voltage (Base open)		$V_{CEO}$	$I_C = -2 \text{mA}, I_B = 0$	-50			V
Collector-base cutoff current (Emitter open)		$I_{CBO}$	$V_{CB} = -50 \text{V}, I_E = 0$			-0.1	$\mu\text{A}$
Collector-base cutoff current (Emitter open)		$I_{CEO}$	$V_{CE} = -50 \text{V}, I_B = 0$			-0.5	$\mu\text{A}$
Emitter-base cutoff current (Collector open)	UNR9110G/9115G/9116G/9117G/911BG	$I_{EBO}$	$V_{EB} = -6 \text{V}, I_C = 0$			-0.01	mA
	UNR9113G/911AG					-0.1	
	UNR9112G/9114G/911DG/911EG/911MG/911NG/911TG					-0.2	
	UNR9111G					-0.5	
	UNR911FG/911HG					-1.0	
	UNR9119G					-1.5	
	UNR9118G/911CG/911LG/911VG					-2.0	
	Forward current transfer ratio			UNR911VG	$h_{FE}$	$V_{CE} = -10 \text{V}, I_C = -5 \text{mA}$	
UNR9118G/911LG		20					
UNR9119G/911DG/911FG/911HG		30					
UNR9111G		35					
UNR9112G/911EG		60					
UNR9113G/9114G/911AG/911CG/911MG		80					
UNR911NG/911TG		80		400			
UNR9110G/9115G/9116G/9117G/911BG		160		460			
Collector-emitter saturation voltage		$V_{CE(sat)}$	$I_C = -10 \text{mA}, I_B = -0.3 \text{mA}$			-0.25	V
	UNR911VG		$I_C = -10 \text{mA}, I_B = -1.5 \text{mA}$				
Output voltage high-level		$V_{OH}$	$V_{CC} = -5 \text{V}, V_B = -0.5 \text{V}, R_L = 1 \text{k}\Omega$	-4.9			V
Output voltage low-level		$V_{OL}$	$V_{CC} = -5 \text{V}, V_B = -2.5 \text{V}, R_L = 1 \text{k}\Omega$			-0.2	V
			$V_{CC} = -5 \text{V}, V_B = -3.5 \text{V}, R_L = 1 \text{k}\Omega$				
			$V_{CC} = -5 \text{V}, V_B = -10 \text{V}, R_L = 1 \text{k}\Omega$				
			$V_{CC} = -5 \text{V}, V_B = -6 \text{V}, R_L = 1 \text{k}\Omega$				
			$V_{CC} = -5 \text{V}, V_B = -5 \text{V}, R_L = 1 \text{k}\Omega$				
Transition frequency		$f_T$	$V_{CB} = -10 \text{V}, I_E = 1 \text{mA}, f = 200 \text{MHz}$		80		MHz
	UNR9113G		$V_{CB} = -10 \text{V}, I_E = 1 \text{mA}, f = 200 \text{MHz}$		150		
	UNR911AG		$V_{CB} = -10 \text{V}, I_E = 2 \text{mA}, f = 200 \text{MHz}$		80		
	UNR911CG		$V_{CB} = -10 \text{V}, I_E = 2 \text{mA}, f = 200 \text{MHz}$		150		
Input resistance	UNR9118G	$R_i$		-30%	0.51	+30%	k $\Omega$
	UNR9119G				1.0		
	UNR911HG/911MG/911VG				2.2		
	UNR9116G/911FG/911LG/911NG				4.7		
	UNR9111G/9114G/9115G				10		
	UNR9112G/9117G/911TG				22		
	UNR9110G/9113G/911DG/911EG				47		
	UNR911AG/911BG				100		

■ Electrical Characteristics (continued)  $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

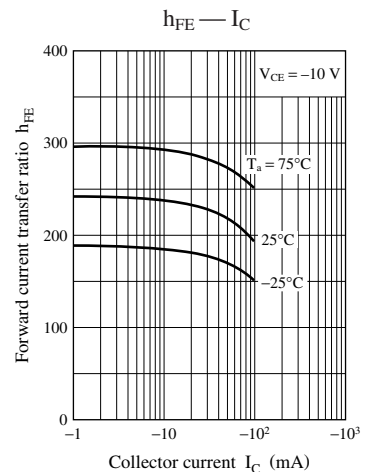
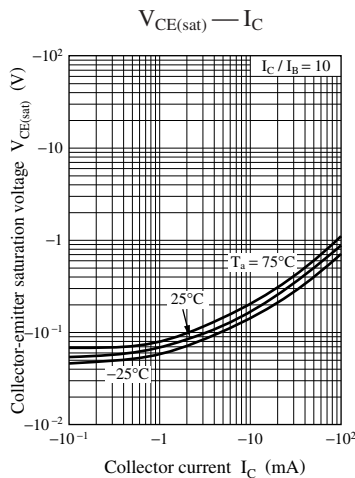
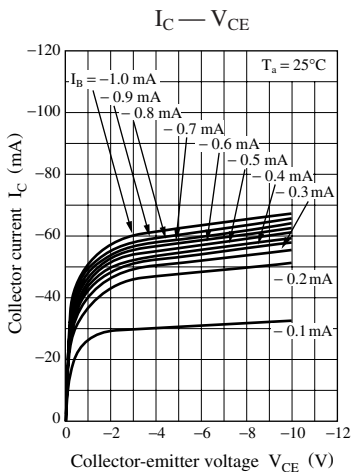
Parameter		Symbol	Conditions	Min	Typ	Max	Unit
Emitter-base resistance	UNR911CG	$R_2$		-30%	47	+30%	$\text{k}\Omega$
Resistance ratio	UNR911MG	$R_1/R_2$			0.047		—
	UNR911NG				0.1		
	UNR9118G/9119G			0.08	0.10	0.12	
	UNR9114G			0.17	0.21	0.25	
	UNR911HG			0.17	0.22	0.27	
	UNR911TG				0.47		
	UNR911FG			0.37	0.47	0.57	
	UNR911AG/911VG				1.0		
	UNR9111G/9112G/9113G/911LG			0.8	1.0	1.2	
	UNR911EG			1.70	2.14	2.60	
	UNR911DG			3.7	4.7	5.7	

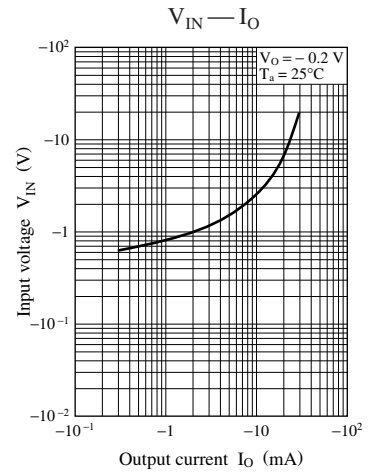
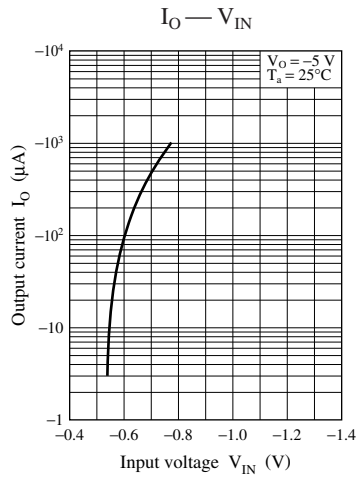
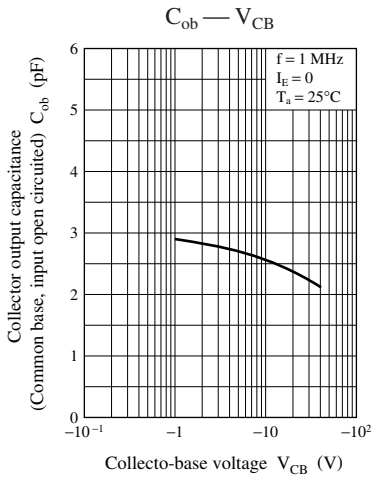
Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

Common characteristics chart

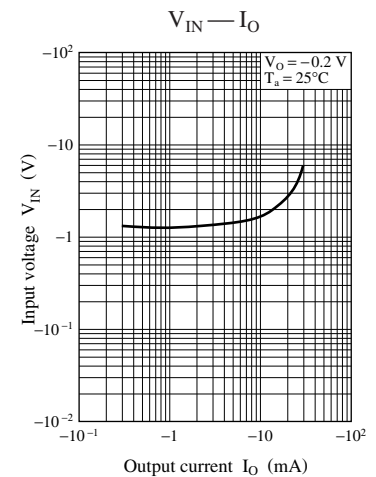
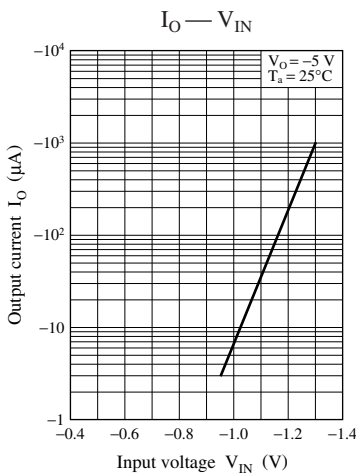
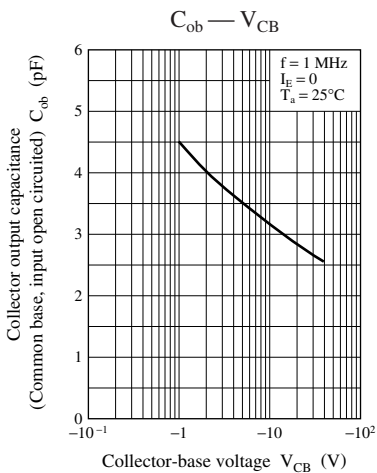
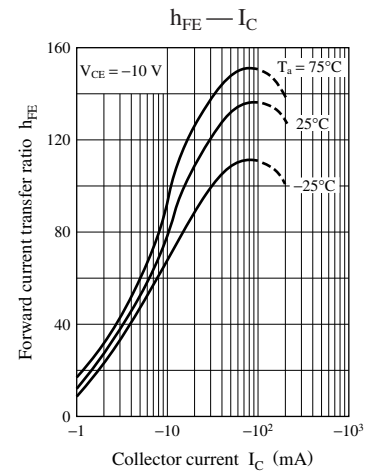
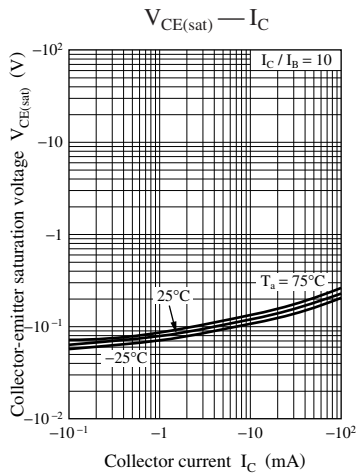
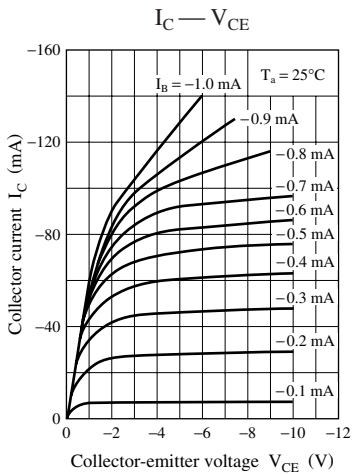


Characteristics charts of UNR9110G

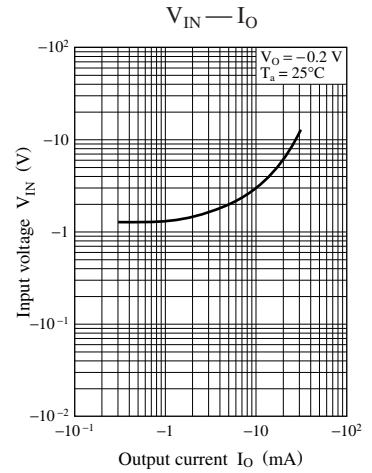
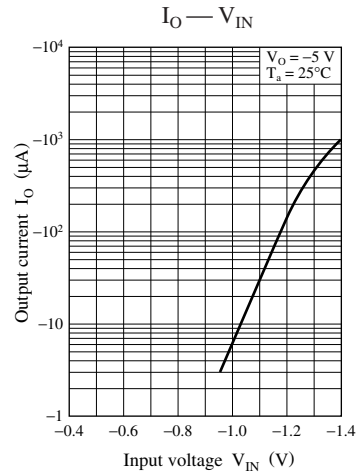
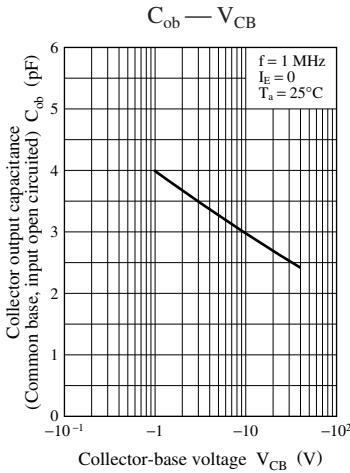
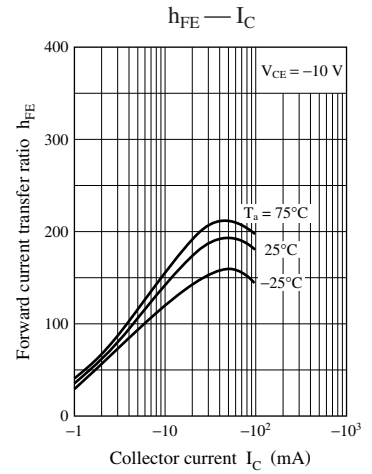
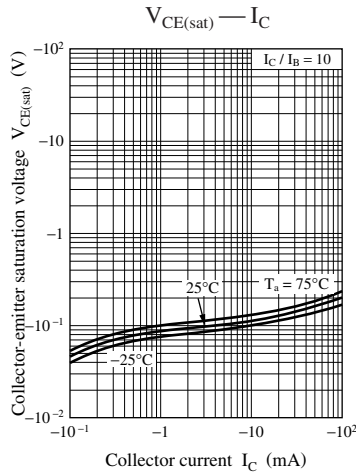
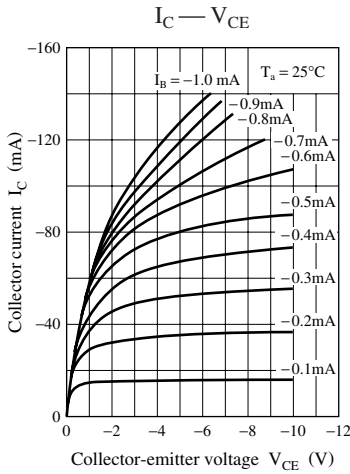




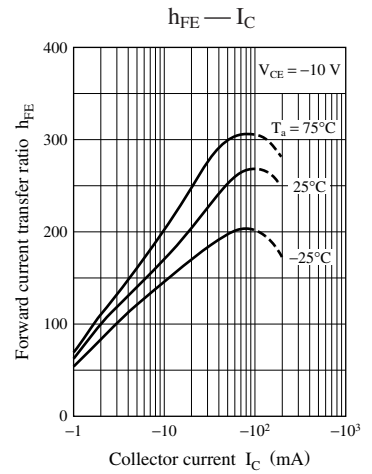
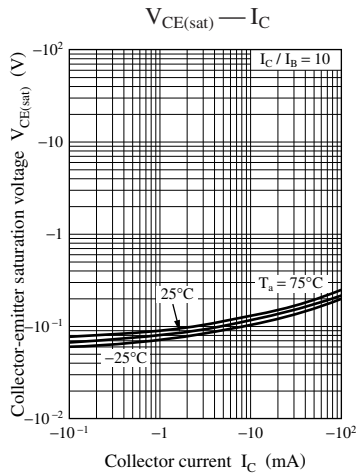
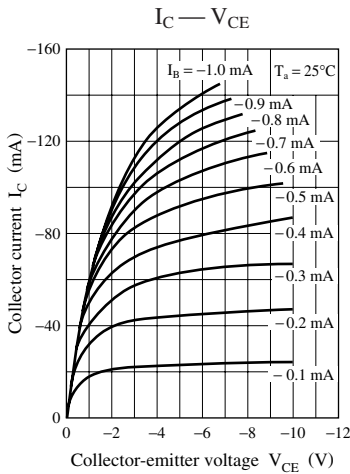
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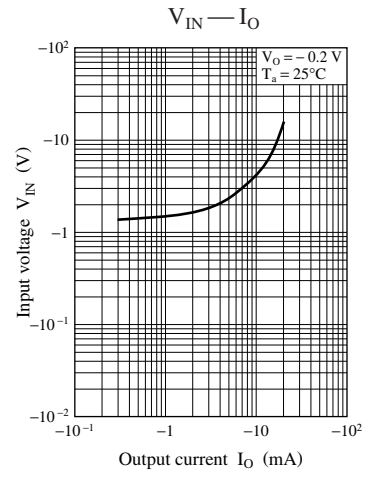
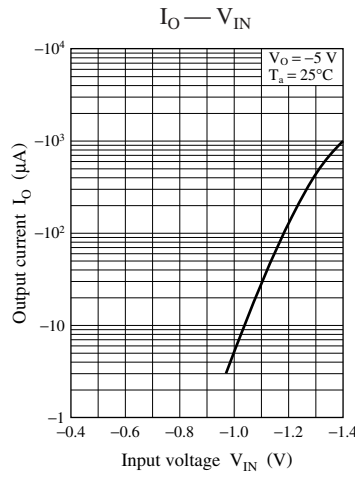
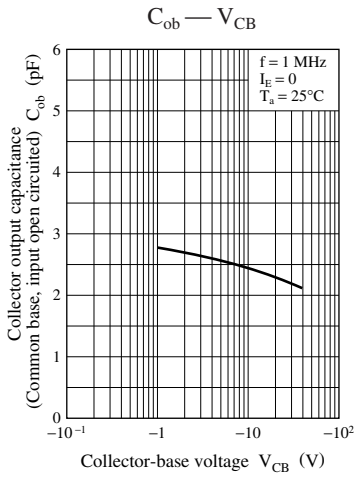


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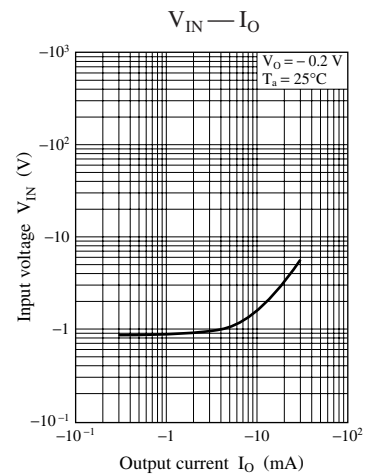
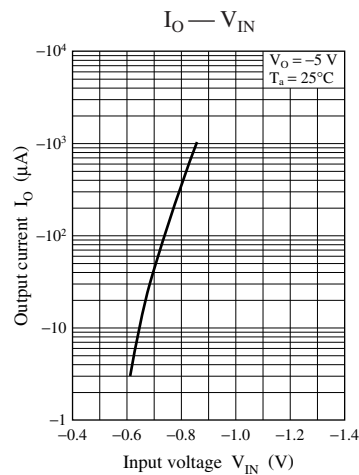
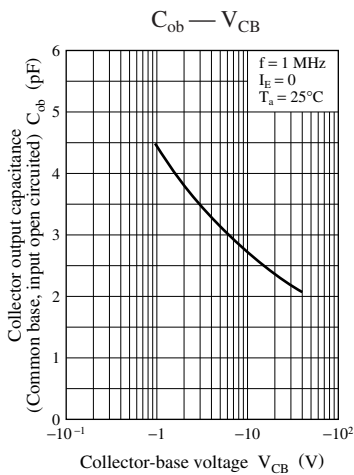
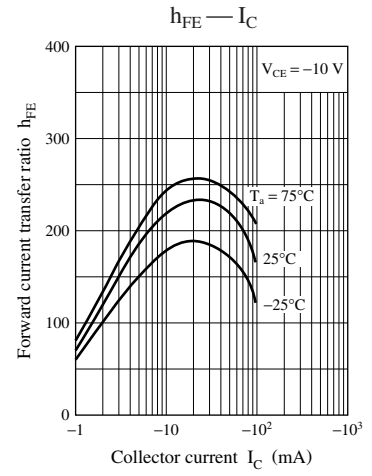
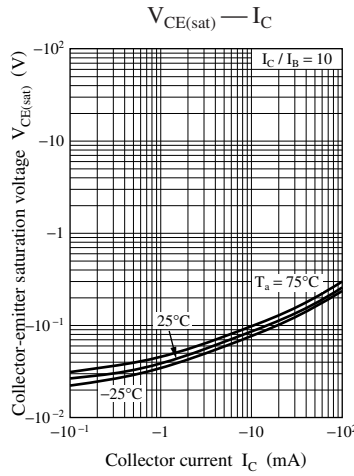
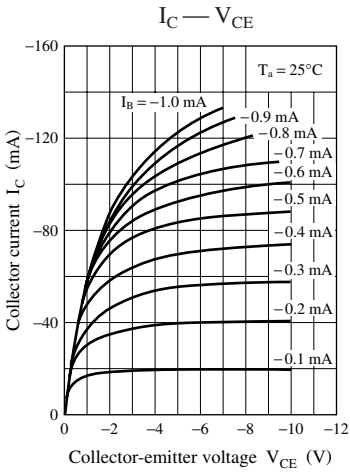


**Characteristics charts of UNR9113G**

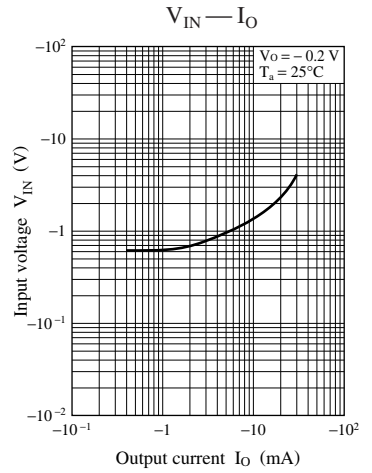
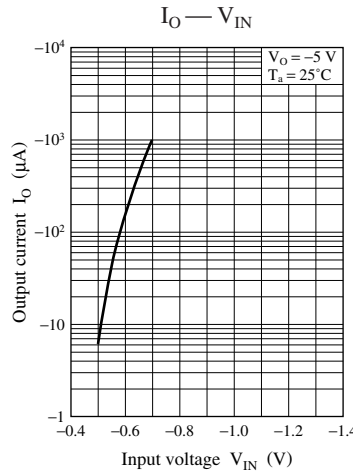
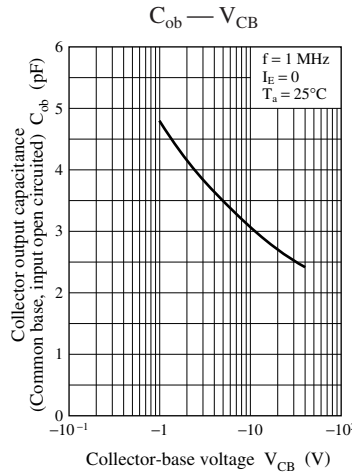
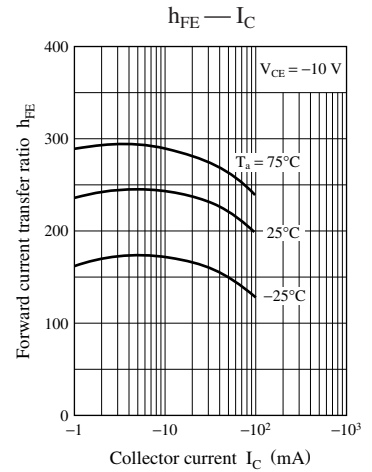
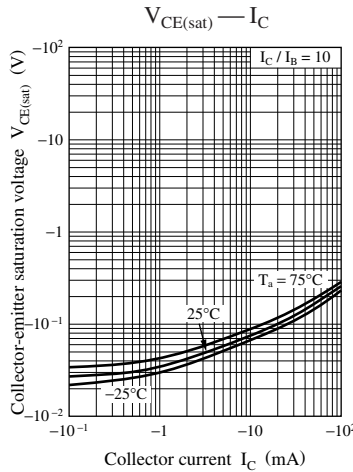
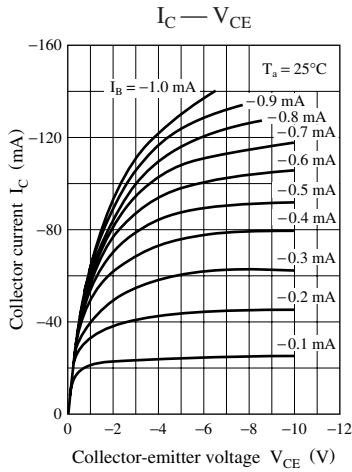




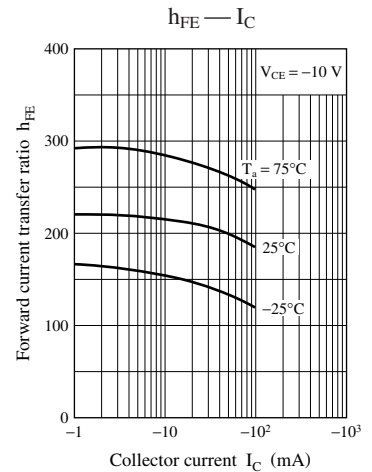
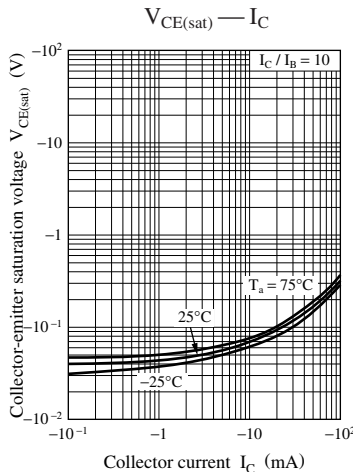
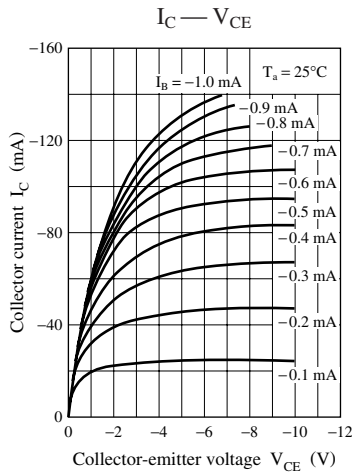
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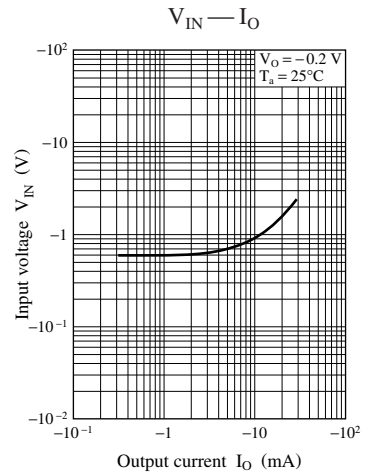
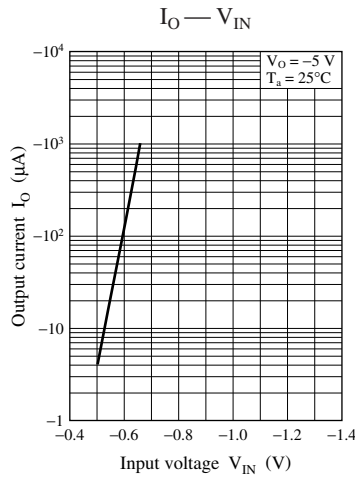
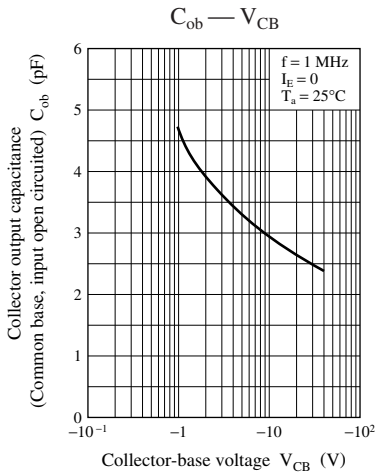


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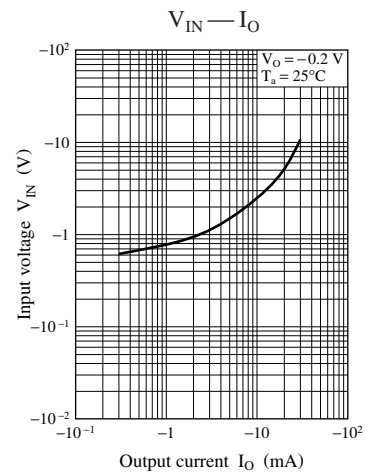
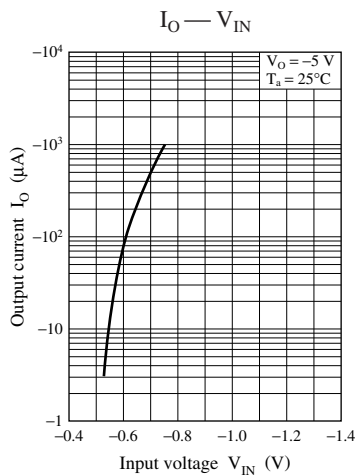
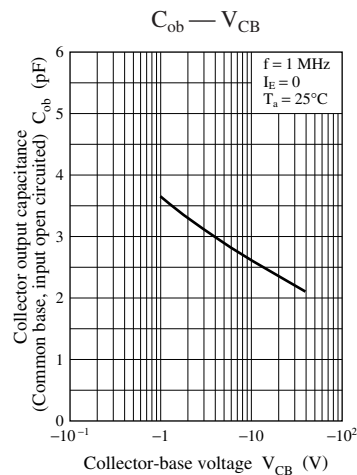
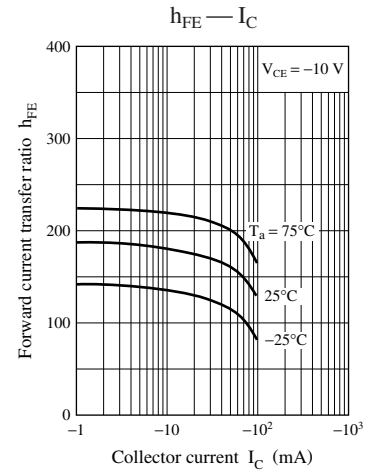
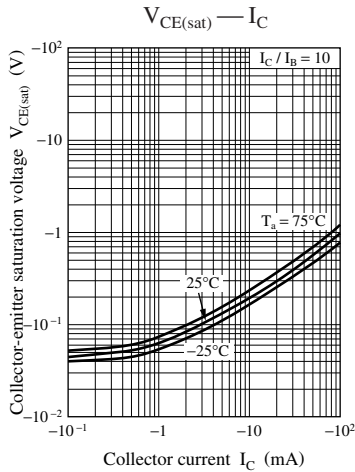
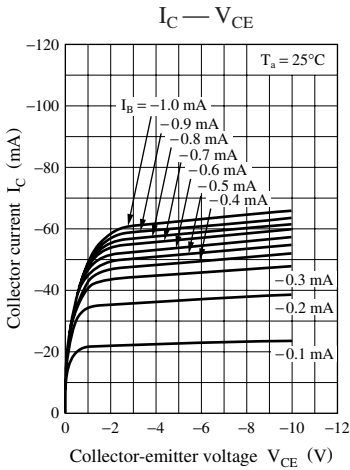


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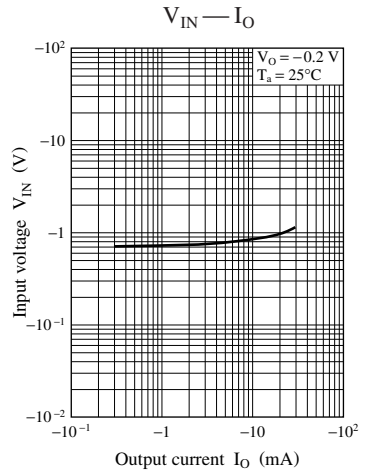
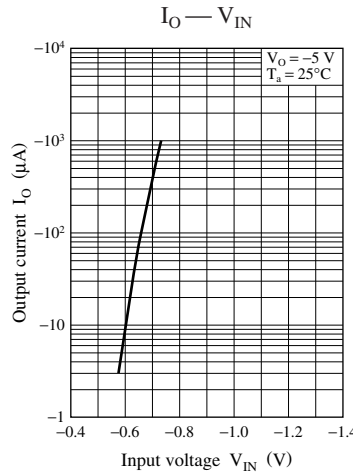
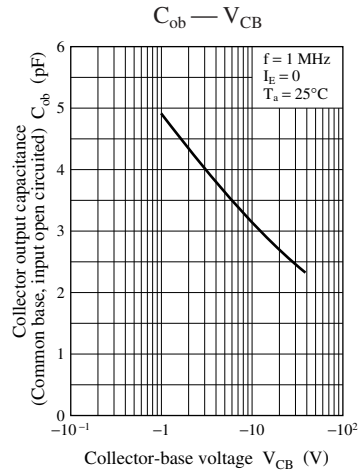
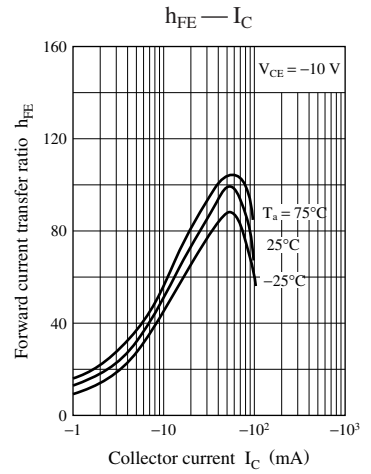
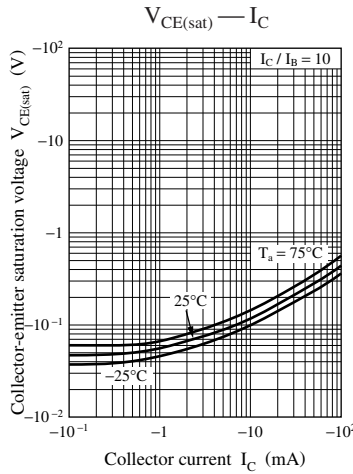
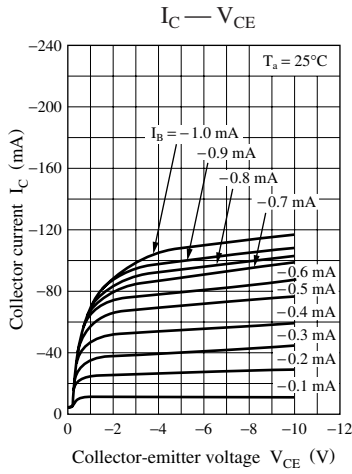


Characteristics charts of UNR9117G

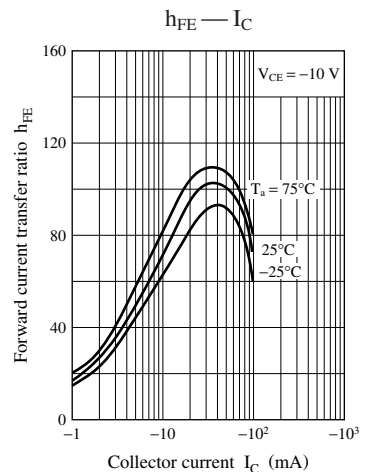
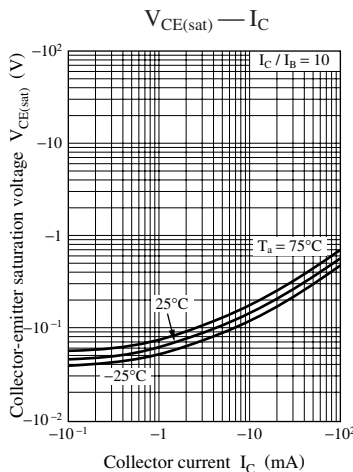
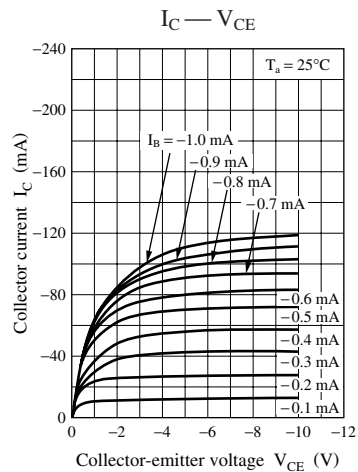


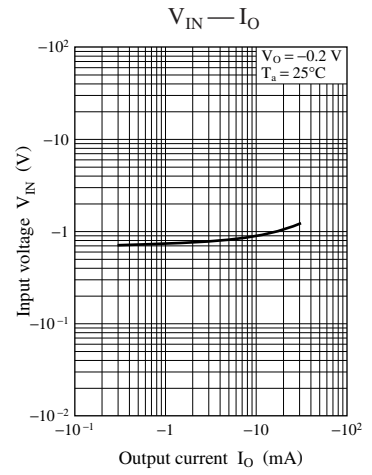
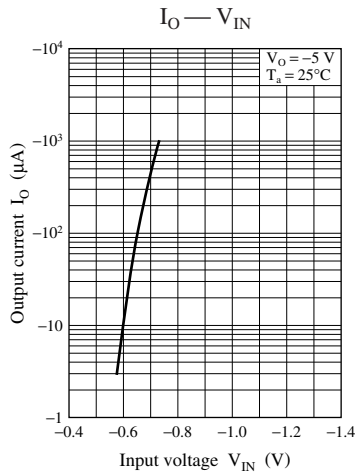
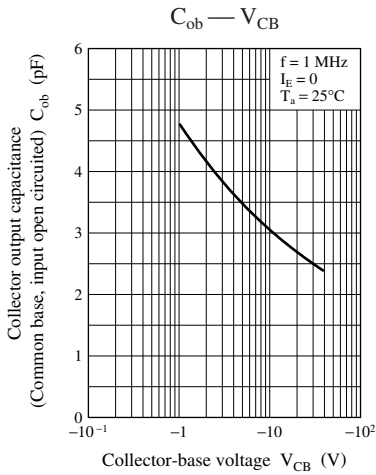


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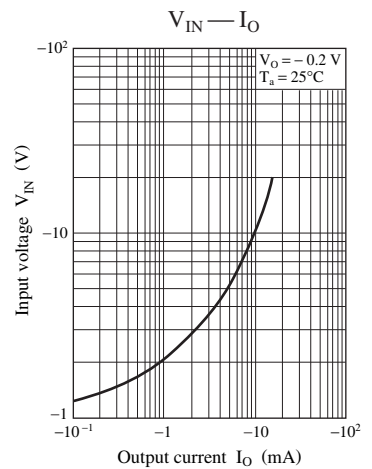
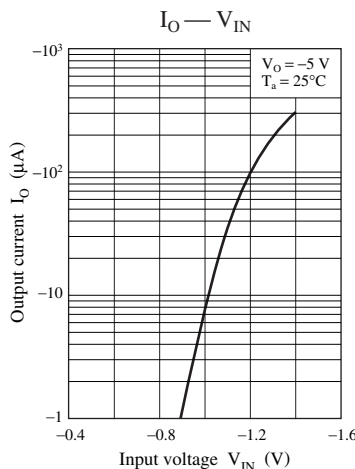
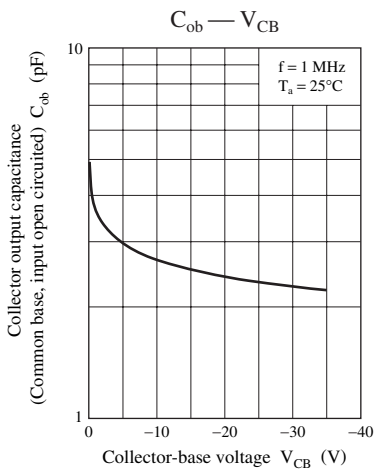
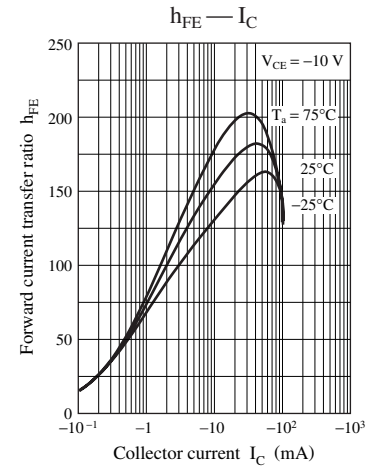
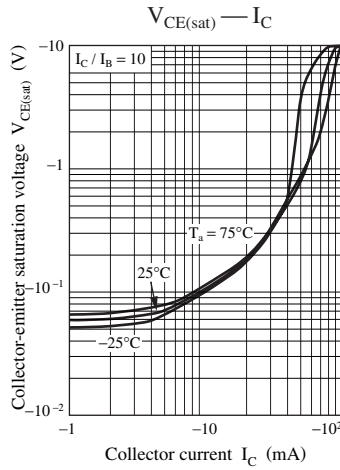
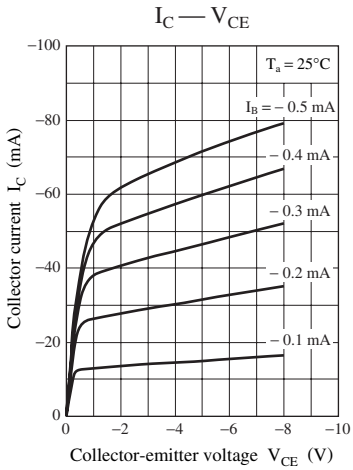


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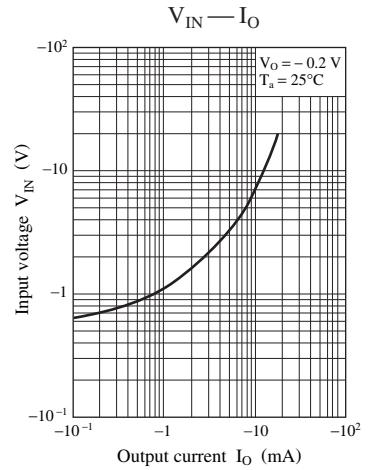
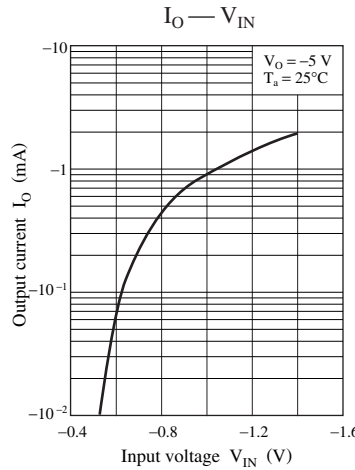
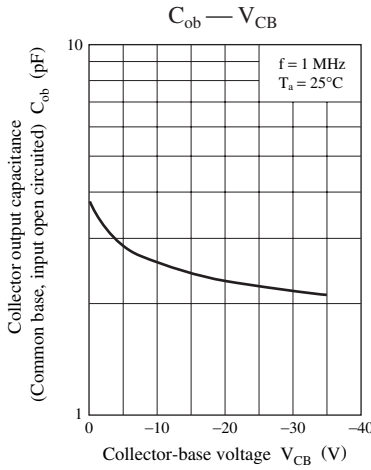
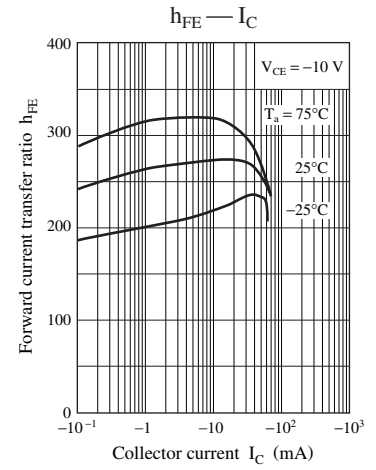
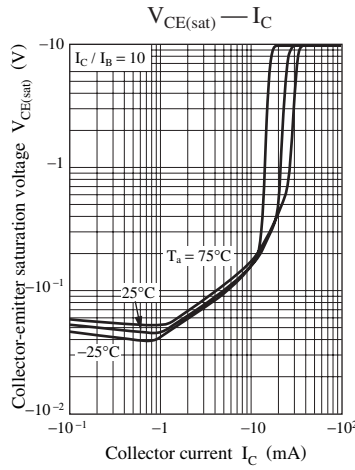
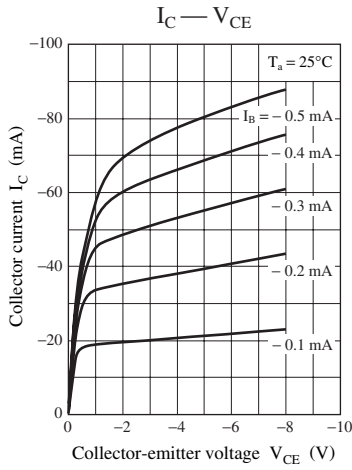




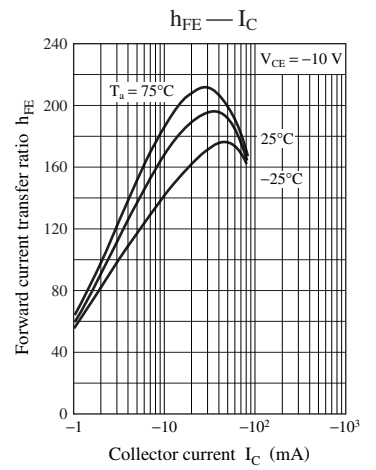
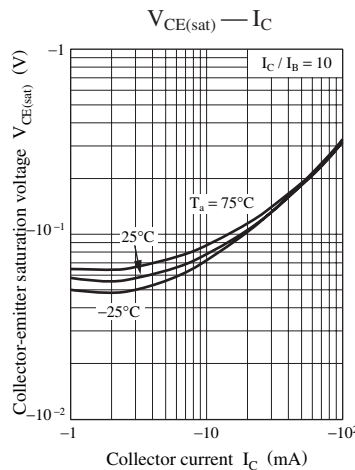
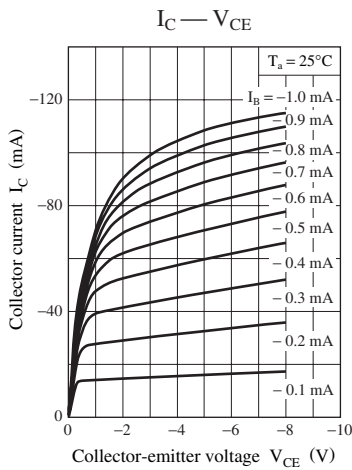
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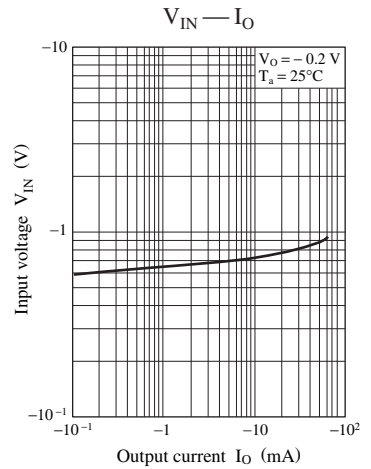
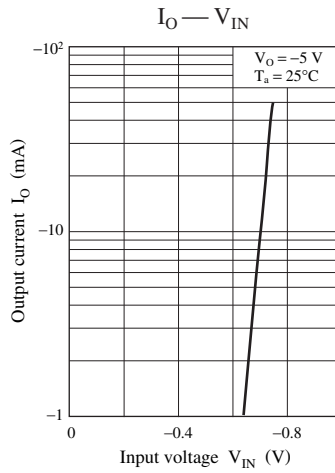
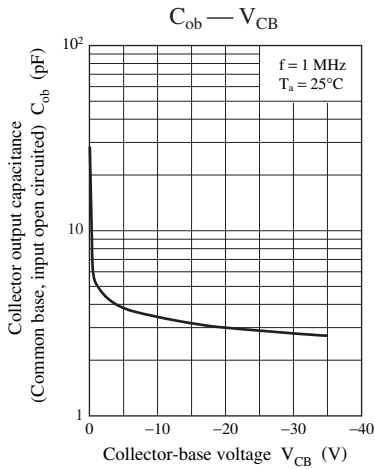


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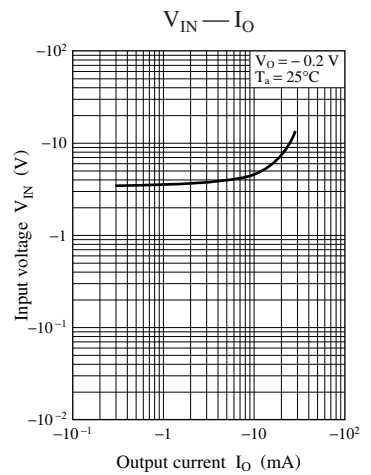
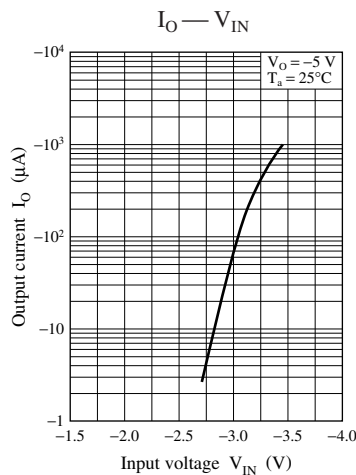
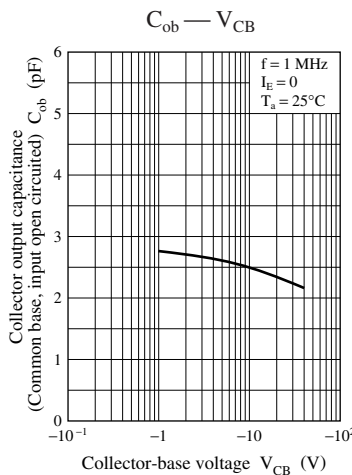
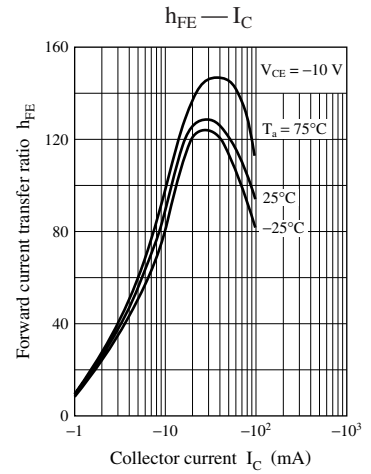
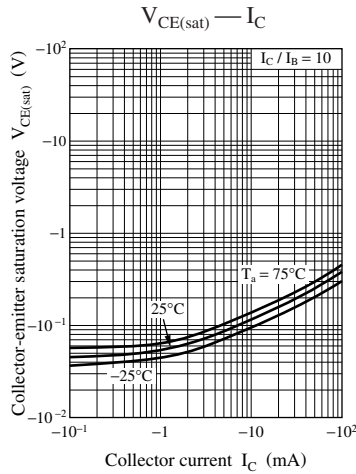
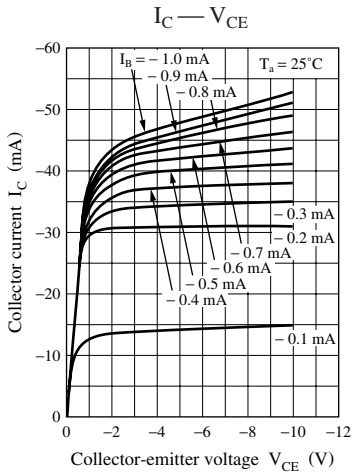


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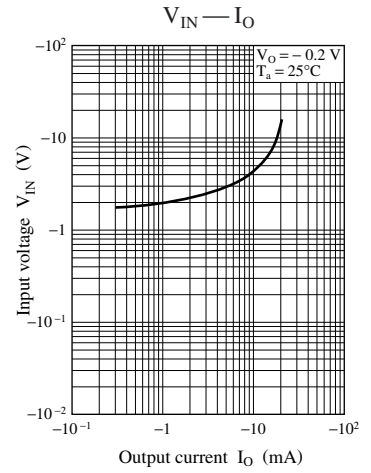
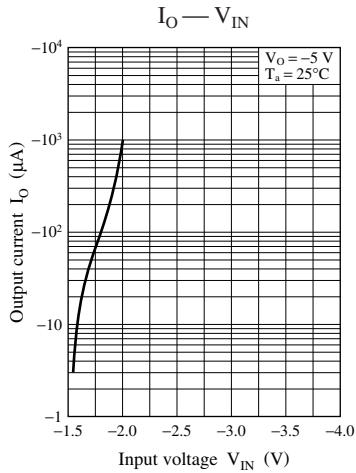
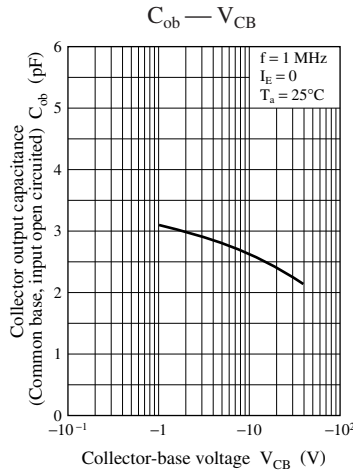
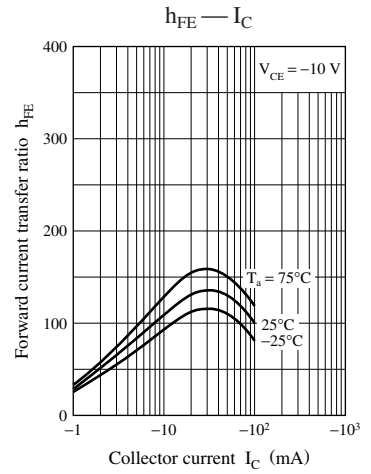
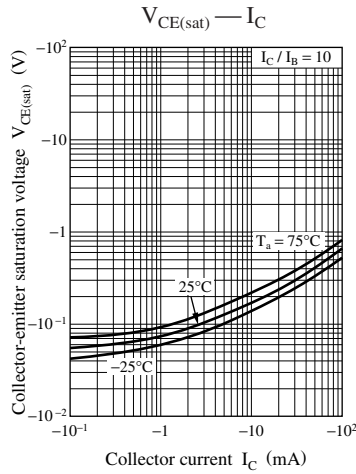
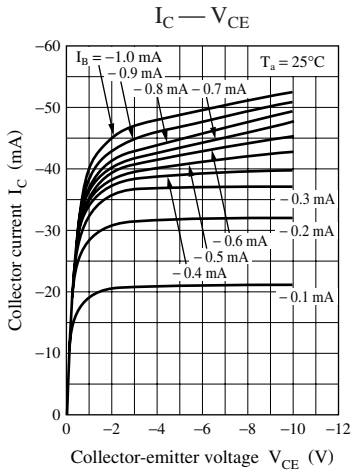




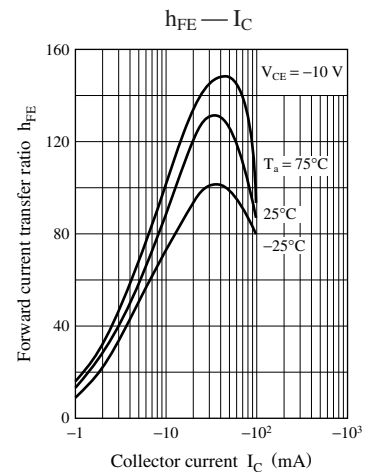
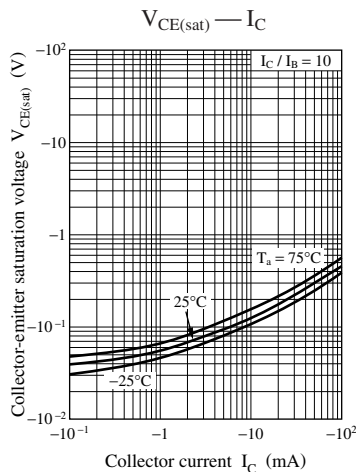
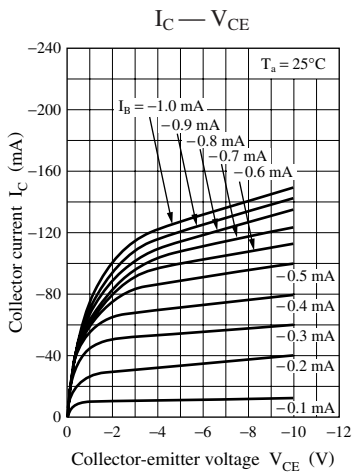
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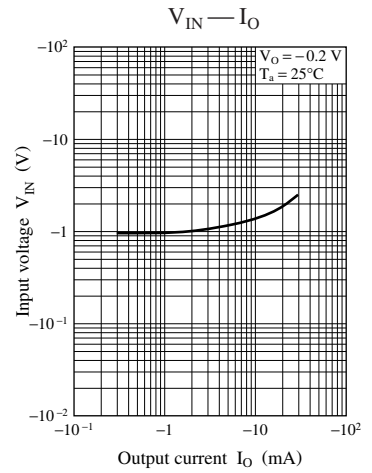
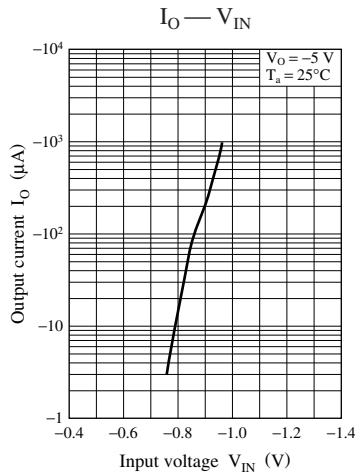
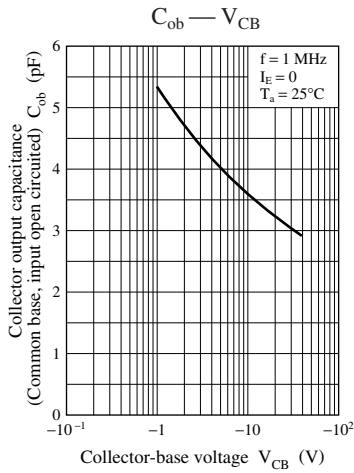


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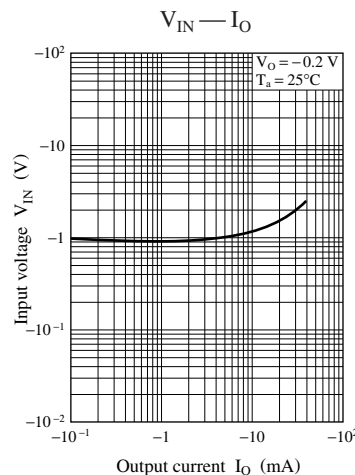
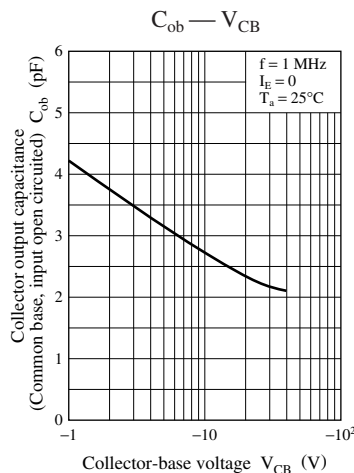
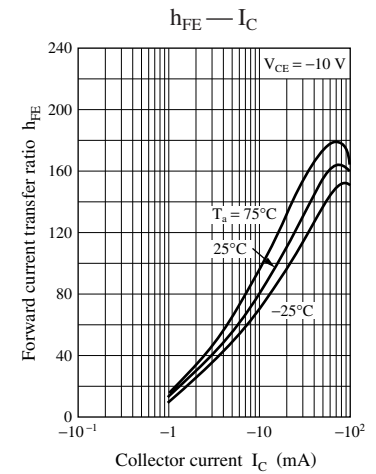
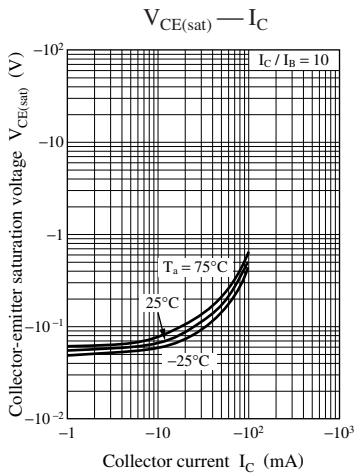
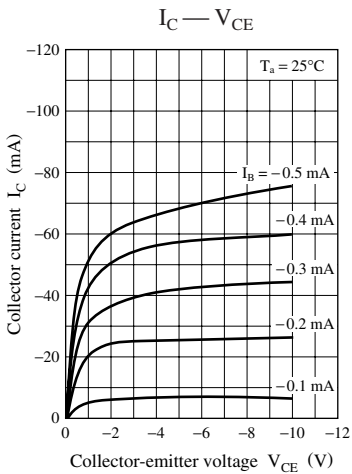


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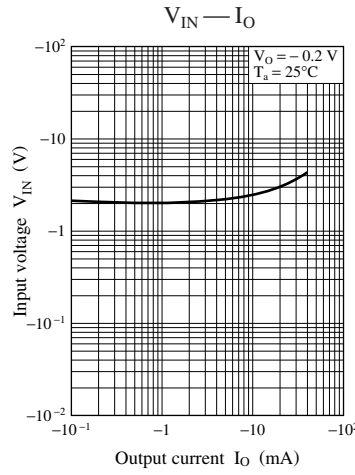
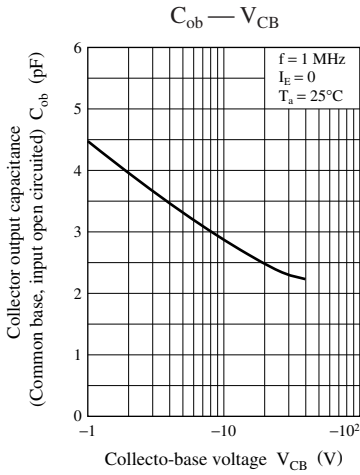
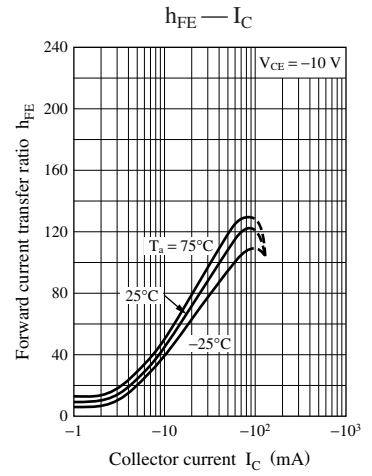
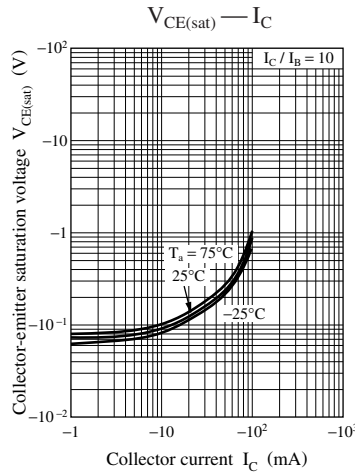
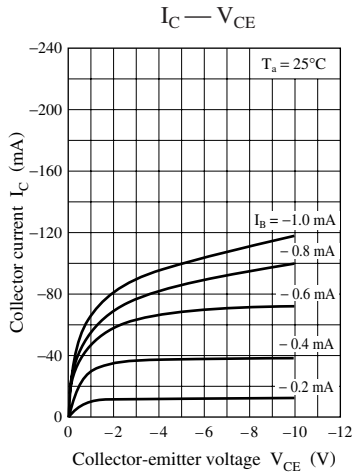




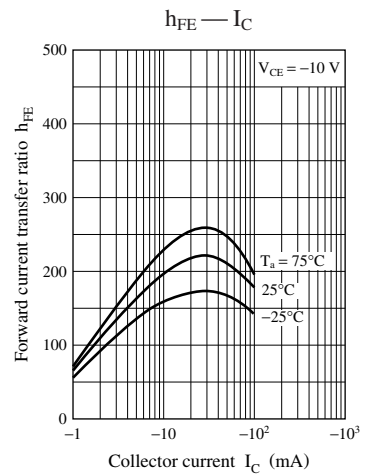
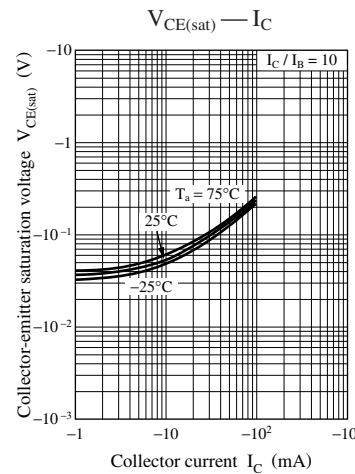
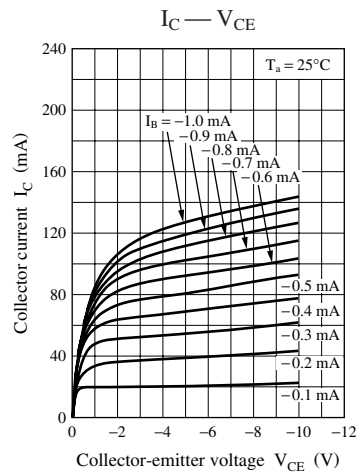
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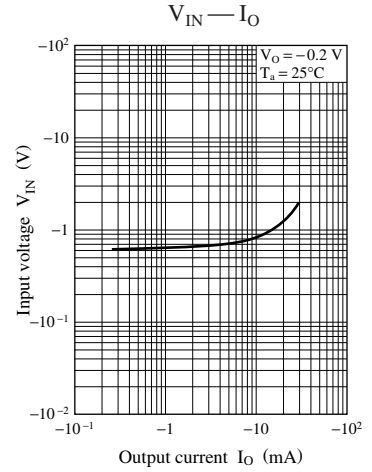
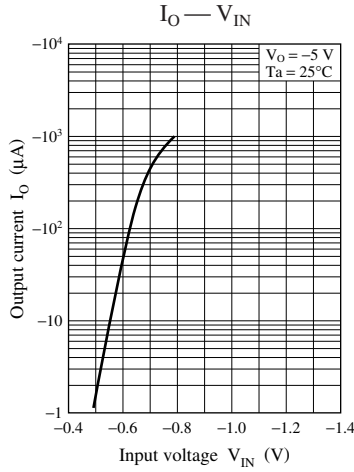
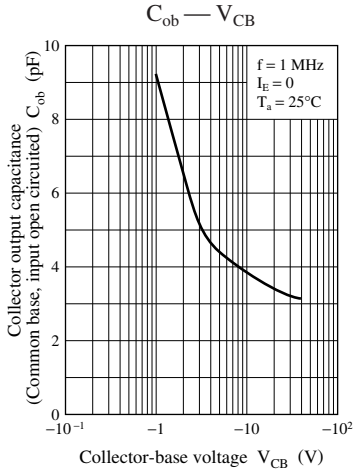


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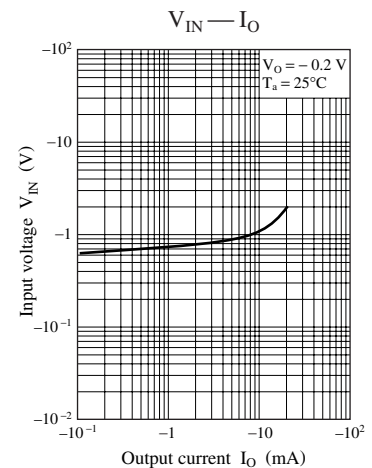
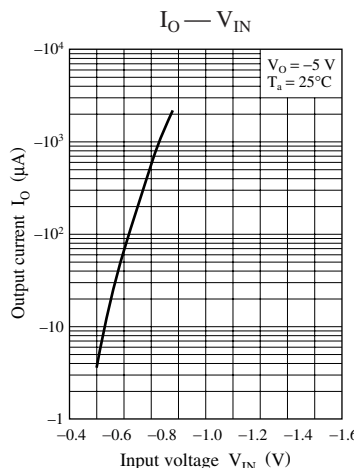
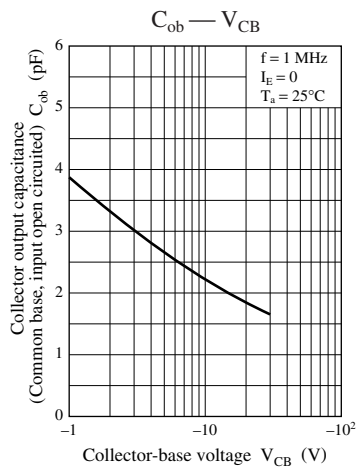
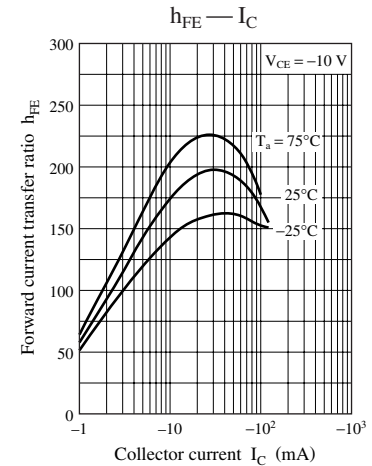
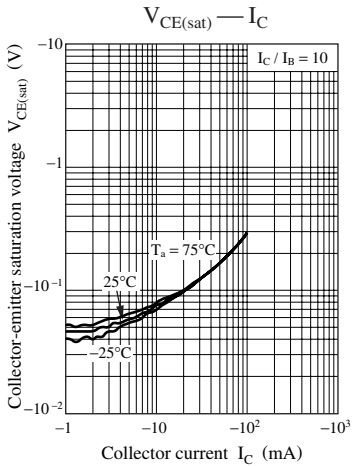
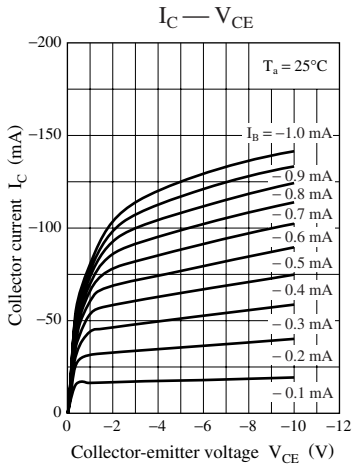


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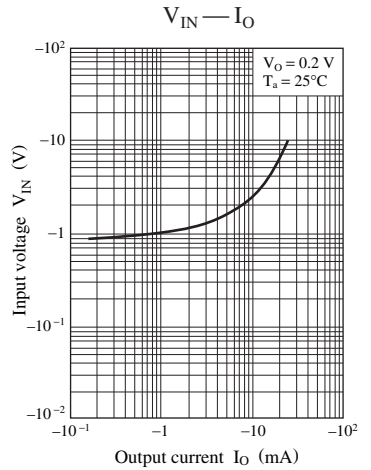
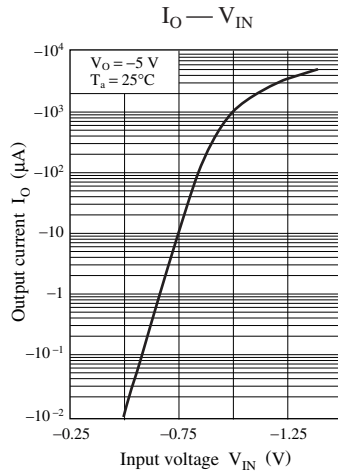
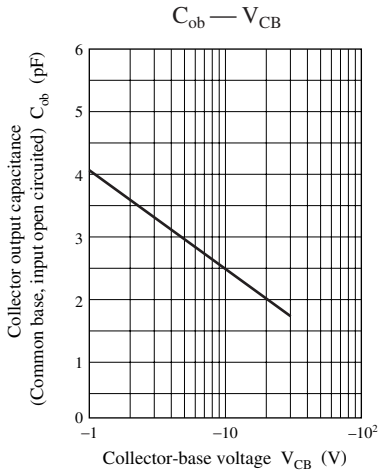
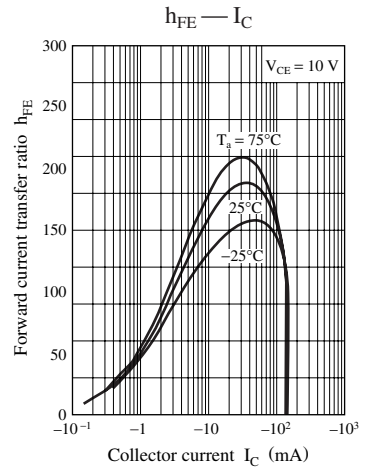
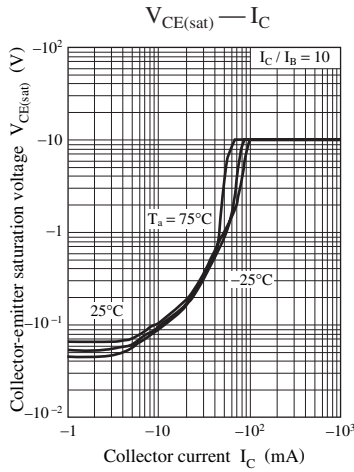
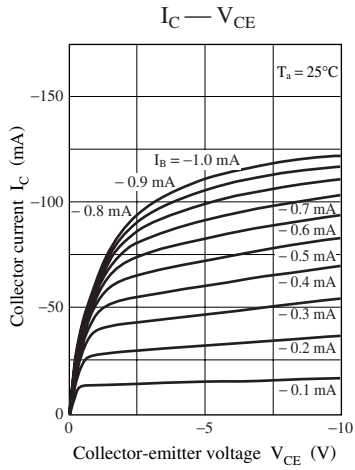


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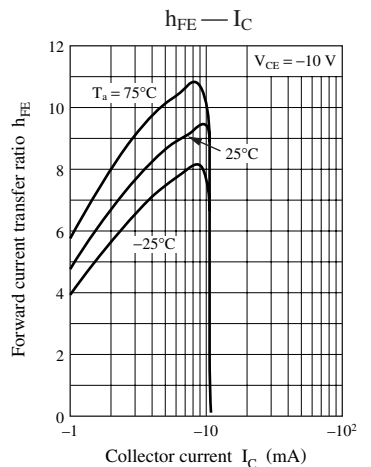
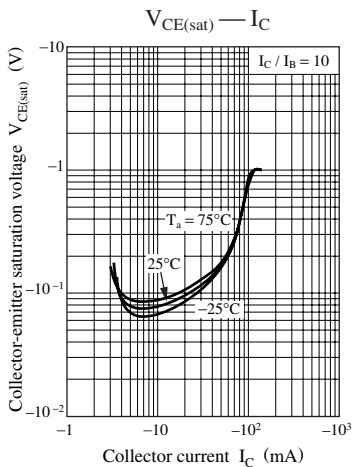
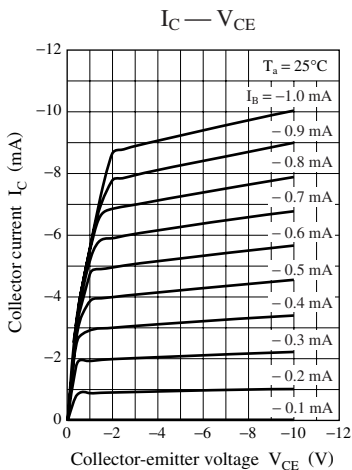


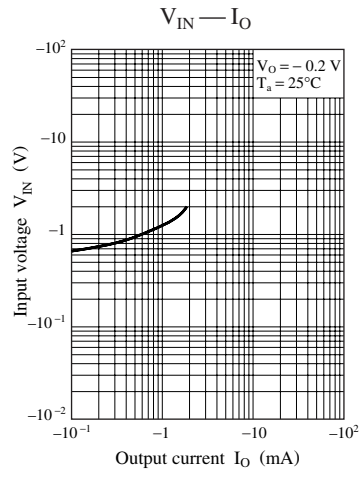
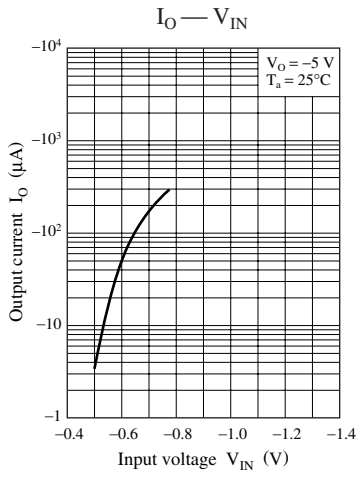


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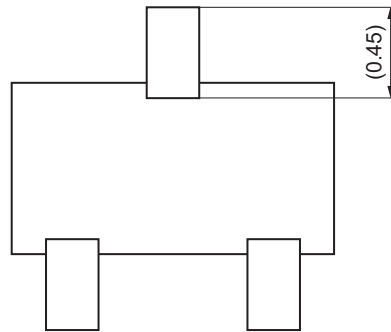
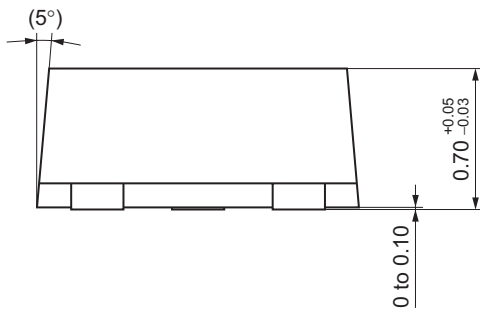
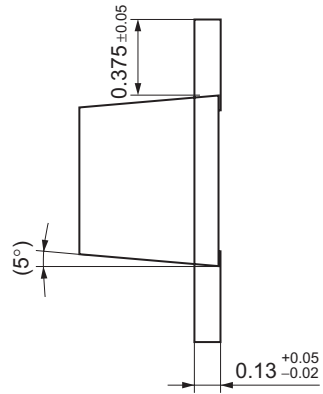
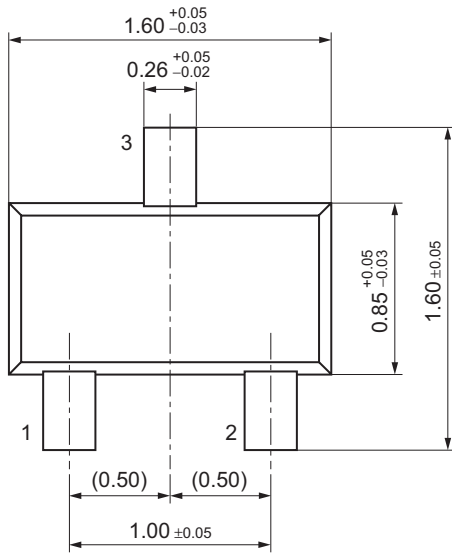
**Characteristics charts of UNR911VG**





SSMini3-F3

Unit: mm



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