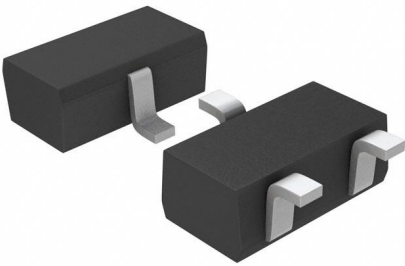


# UNR921MJ0L Datasheet

[www.digi-electronics.com](http://www.digi-electronics.com)



<https://www.DiGi-Electronics.com>

DiGi Electronics Part Number	UNR921MJ0L-DG
Manufacturer	<a href="#">Panasonic Electronic Components</a>
Manufacturer Product Number	UNR921MJ0L
Description	TRANS PREBIAS NPN 50V SSMINI3
Detailed Description	Pre-Biased Bipolar Transistor (BJT) NPN - Pre-Biased 50 V 100 mA 150 MHz 125 mW Surface Mount SSM ini3-F1



Tel: +00 852-30501935

RFQ Email: [Info@DiGi-Electronics.com](mailto:Info@DiGi-Electronics.com)

DiGi is a global authorized distributor of electronic components.

## Purchase and inquiry

Manufacturer Product Number:

UNR921MJ0L

Series:

-

Transistor Type:

NPN - Pre-Biased

Voltage - Collector Emitter Breakdown (Max):

50 V

Resistor - Emitter Base (R2):

47 kOhms

Vce Saturation (Max) @ Ib, Ic:

250mV @ 300µA, 10mA

Frequency - Transition:

150 MHz

Mounting Type:

Surface Mount

Supplier Device Package:

SSMini3-F1

Manufacturer:

Panasonic Electronic Components

Product Status:

Obsolete

Current - Collector (Ic) (Max):

100 mA

Resistor - Base (R1):

2.2 kOhms

DC Current Gain (hFE) (Min) @ Ic, Vce:

80 @ 5mA, 10V

Current - Collector Cutoff (Max):

500nA

Power - Max:

125 mW

Package / Case:

SC-89, SOT-490

Base Product Number:

UNR921

## Environmental & Export classification

RoHS Status:

RoHS non-compliant

ECCN:

EAR99

Moisture Sensitivity Level (MSL):

1 (Unlimited)

HTSUS:

8541.21.0075

# UNR921xJ Series (UN921xJ Series)

## Silicon NPN epitaxial planar type

For digital circuits

### ■ Features

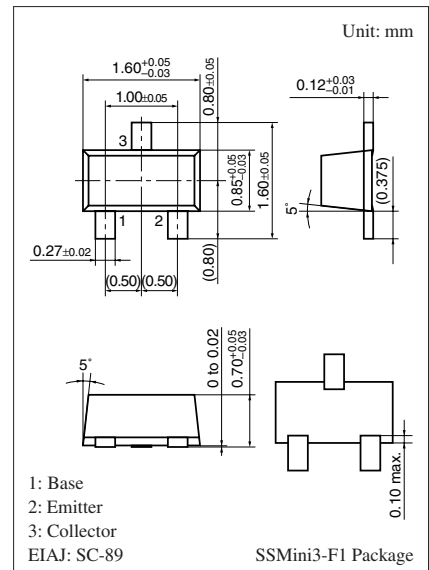
- Costs can be reduced through downsizing of the equipment and reduction of the number of parts.
- SS-Mini type package, allowing automatic insertion through tape packing.

### ■ Resistance by Part Number

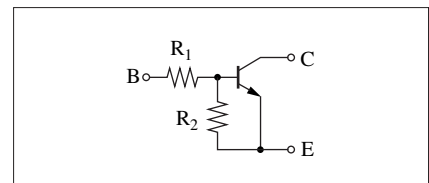
	Marking Symbol	(R <sub>1</sub> )	(R <sub>2</sub> )
• UNR9210J (UN9210J)	8L	47 kΩ	—
• UNR9211J (UN9211J)	8A	10 kΩ	10 kΩ
• UNR9212J (UN9212J)	8B	22 kΩ	22 kΩ
• UNR9213J (UN9213J)	8C	47 kΩ	47 kΩ
• UNR9214J (UN9214J)	8D	10 kΩ	47 kΩ
• UNR9215J (UN9215J)	8E	10 kΩ	—
• UNR9216J (UN9216J)	8F	4.7 kΩ	—
• UNR9217J (UN9217J)	8H	22 kΩ	—
• UNR9218J (UN9218J)	8I	0.51 kΩ	5.1 kΩ
• UNR9219J (UN9219J)	8K	1 kΩ	10 kΩ
• UNR921AJ	8X	100 kΩ	100 kΩ
• UNR921BJ	8Y	100 kΩ	—
• UNR921CJ	8Z	—	47 kΩ
• UNR921DJ (UN921DJ)	8M	47 kΩ	10 kΩ
• UNR921EJ (UN921EJ)	8N	47 kΩ	22 kΩ
• UNR921FJ (UN921FJ)	8O	4.7 kΩ	10 kΩ
• UNR921KJ (UN921KJ)	8P	10 kΩ	4.7 kΩ
• UNR921LJ (UN921LJ)	8Q	4.7 kΩ	4.7 kΩ
• UNR921MJ	EL	2.2 kΩ	47 kΩ
• UNR921NJ	EX	4.7 kΩ	47 kΩ
• UNR921TJ (UN921TJ)	EZ	22 kΩ	47 kΩ
• UNR921VJ	FD	2.2 kΩ	2.2 kΩ

### ■ 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



### Internal Connection



(Note) The part numbers in the parenthesis show conventional part number.



## UNR921xJ Series

## Transistors with built-in Resistor

■ 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 cut-off current (Emitter open)		$I_{CBO}$	$V_{CB} = 50 \text{ V}, I_E = 0$			0.1	$\mu\text{A}$		
Collector-emitter cut-off current (Base open)		$I_{CEO}$	$V_{CE} = 50 \text{ V}, I_B = 0$			0.5	$\mu\text{A}$		
Emitter-base cut-off current (Collector open)	UNR9210J/9215J/9216J/9217J/921BJ	$I_{EBO}$	$V_{EB} = 6 \text{ V}, I_C = 0$			0.01	mA		
	UNR9213J/921AJ					0.1			
	UNR9212J/9214J/921DJ/921EJ/921MJ/921NJ/921TJ					0.2			
	UNR9211J					0.5			
	UNR921FJ/921KJ					1.0			
	UNR9219J					1.5			
	UNR9218J/921CJ/921LJ/921VJ					2.0			
Forward current transfer ratio	UNR921VJ	$h_{FE}$	$V_{CE} = 10 \text{ V}, I_C = 5 \text{ mA}$	6		20	—		
	UNR9218J/921KJ/921LJ			20					
	UNR9219J/921DJ/921FJ			30					
	UNR9211J			35					
	UNR9212J/921EJ			60					
	UNR9213J/9214J/921AJ/921CJ/921MJ			80					
	UNR921NJ/921TJ			80	400				
	UNR9210J/9215J/9216J/9217J/921BJ			160	460				
Collector-emitter saturation voltage		$V_{CE(sat)}$	$I_C = 10 \text{ mA}, I_B = 0.3 \text{ mA}$			0.25	V		
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		
				UNR9213J/921BJ/921KJ	$V_{CC} = 5 \text{ V}, V_B = 3.5 \text{ V}, R_L = 1 \text{ k}\Omega$				
				UNR921DJ	$V_{CC} = 5 \text{ V}, V_B = 10 \text{ V}, R_L = 1 \text{ k}\Omega$				
				UNR921EJ	$V_{CC} = 5 \text{ V}, V_B = 6 \text{ V}, R_L = 1 \text{ k}\Omega$				
				UNR921AJ	$V_{CC} = 5 \text{ V}, V_B = 5 \text{ V}, R_L = 1 \text{ k}\Omega$				
Transition frequency		$f_T$	$V_{CB} = 10 \text{ V}, I_E = -2 \text{ mA}, f = 200 \text{ MHz}$		150		MHz		
Input resistance	UNR9218J	$R_1$		-30%	0.51	+30%	k $\Omega$		
	UNR9219J				1				
	UNR921MJ/921VJ				2.2				
	UNR9216J/921FJ/921LJ/921NJ				4.7				
	UNR9211J/9214J/9215J/921KJ				10				
	UNR9212J/9217J/921TJ				22				
	UNR9210J/9213J/921DJ/921EJ				47				
	UNR921AJ/921BJ				100				

Transistors with built-in Resistor

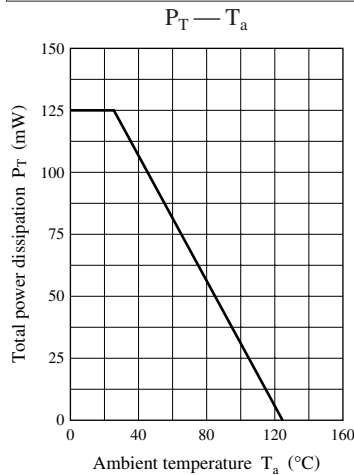
UNR921xJ Series

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

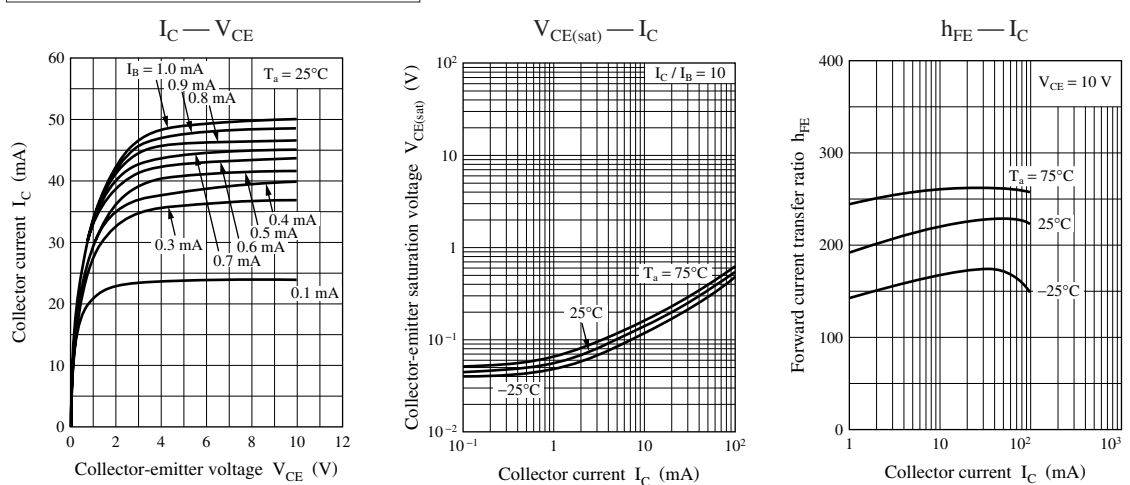
Parameter		Symbol	Conditions	Min	Typ	Max	Unit
Emitter-base resistance		UNR921CJ	$R_2$	-30%	47	+30%	k $\Omega$
Resistance ratio	UNR921MJ	$R_1/R_2$			0.047		—
	UNR921NJ				0.1		
	UNR9218J/9219J			0.08	0.10	0.12	
	UNR9214J			0.17	0.21	0.25	
	UNR921TJ				0.47		
	UNR921FJ			0.37	0.47	0.57	
	UNR921AJ/921VJ				1.0		
	UNR9211J/9212J/9213J/921LJ			0.8	1.0	1.2	
	UNR921KJ			1.70	2.13	2.60	
	UNR921EJ			1.70	2.14	2.60	
UNR921DJ	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

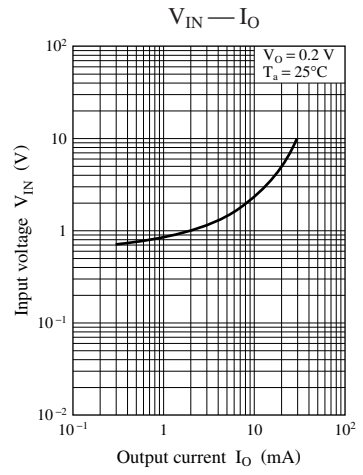
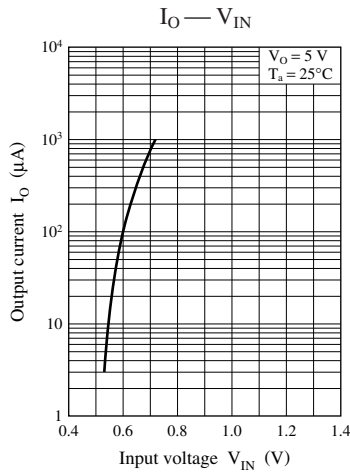
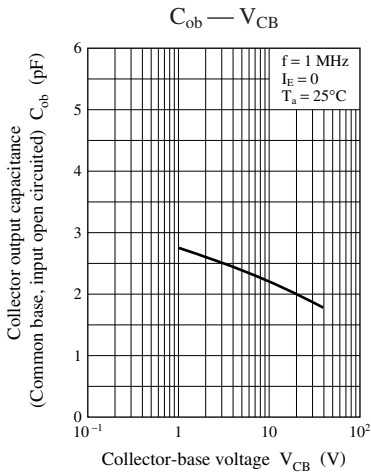


Characteristics charts of UNR9210J

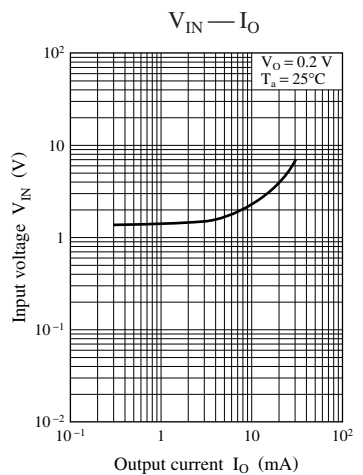
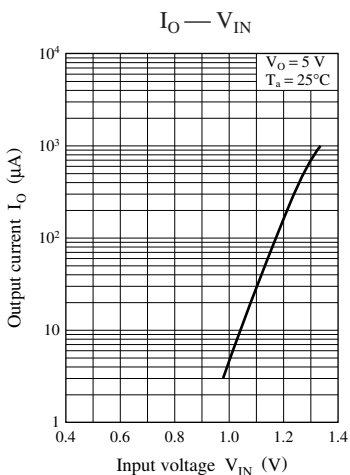
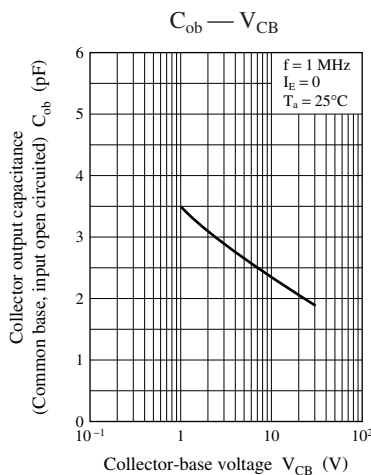
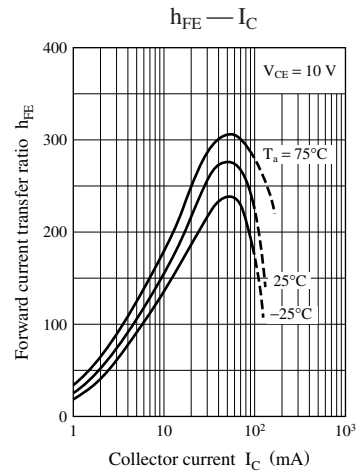
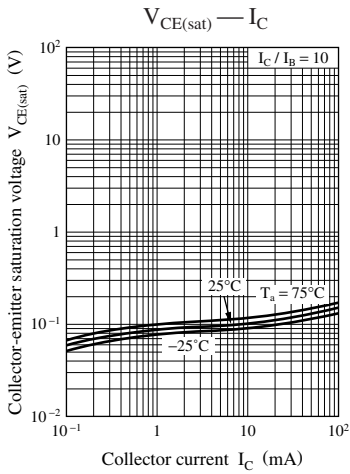
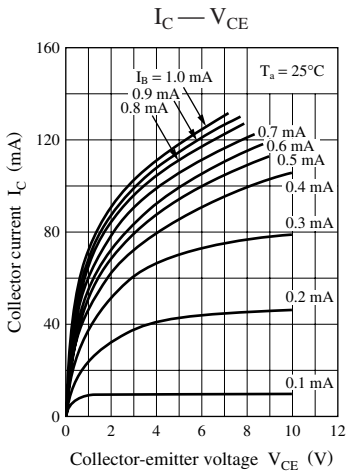


UNR921xJ Series

Transistors with built-in Resistor



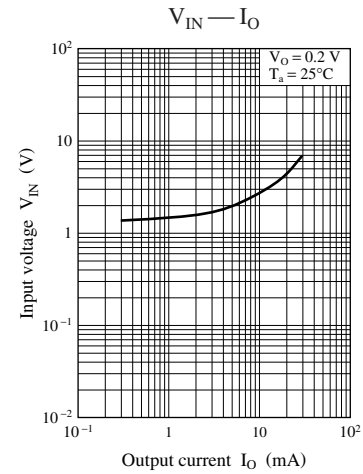
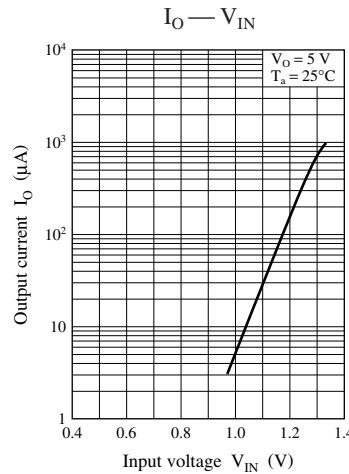
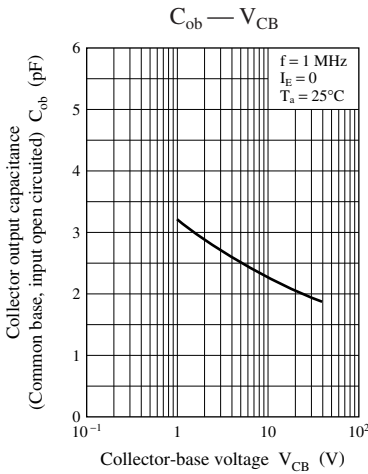
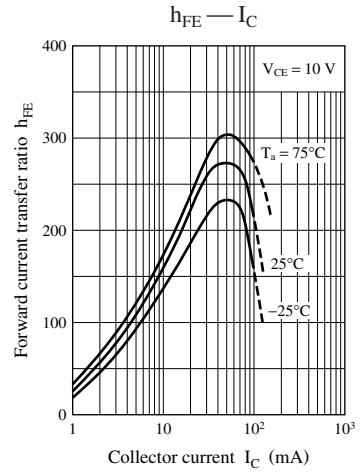
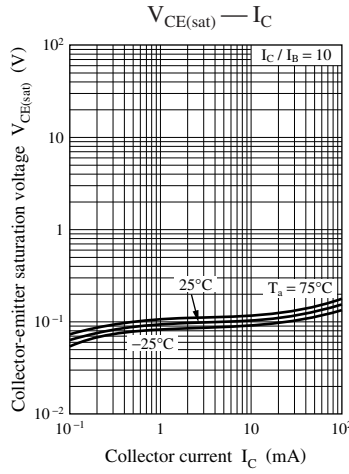
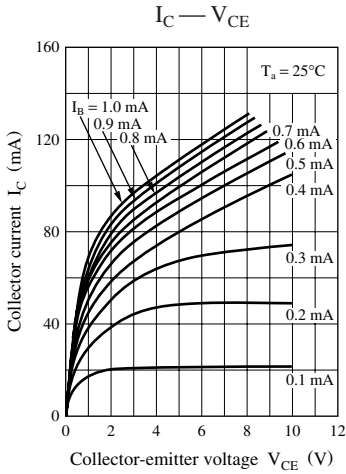
Characteristics charts of UNR9211J



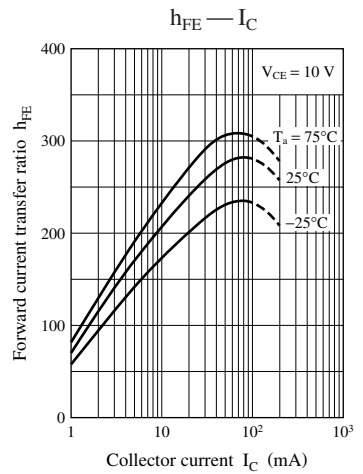
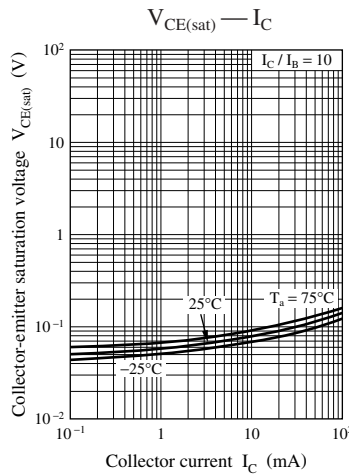
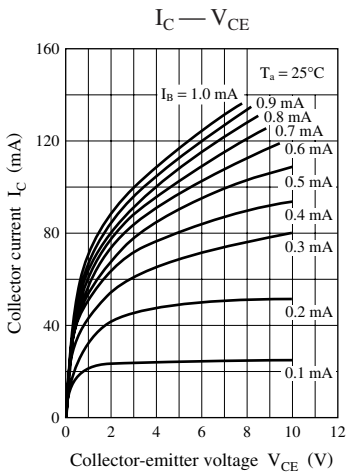
Transistors with built-in Resistor

UNR921xJ Series

Characteristics charts of UNR9212J

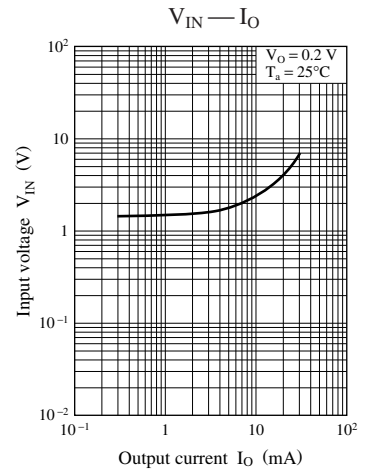
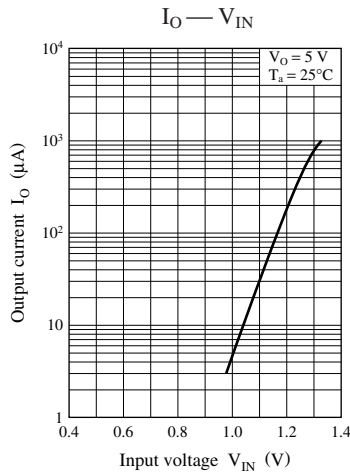
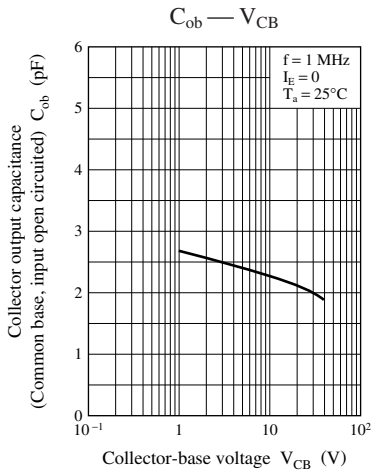


Characteristics charts of UNR9213J

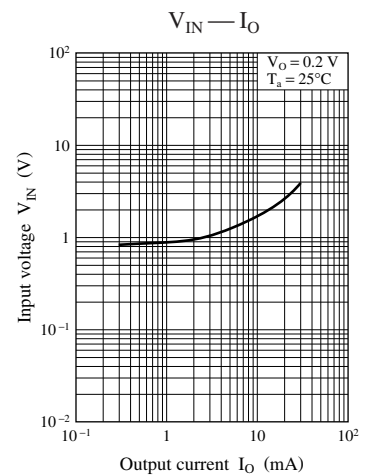
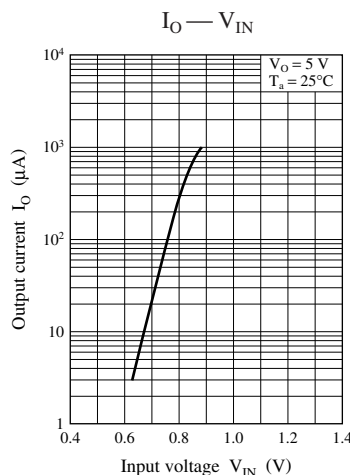
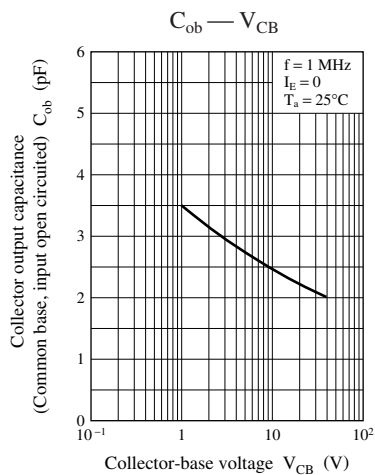
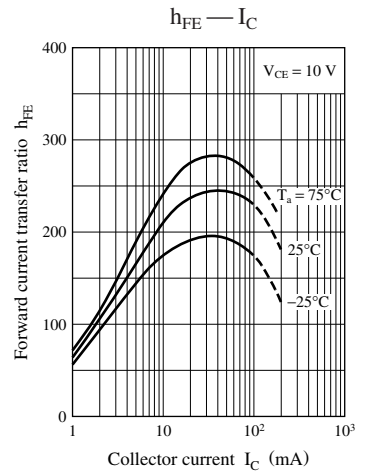
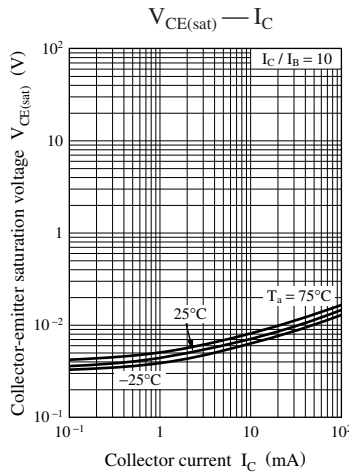
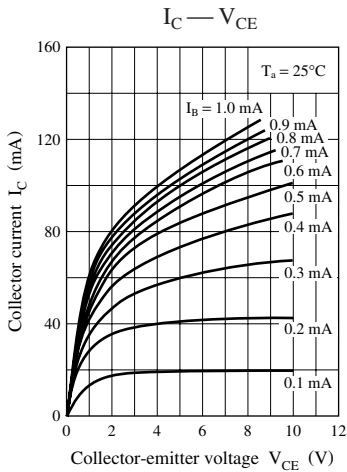


UNR921xJ Series

Transistors with built-in Resistor



Characteristics charts of UNR9214J

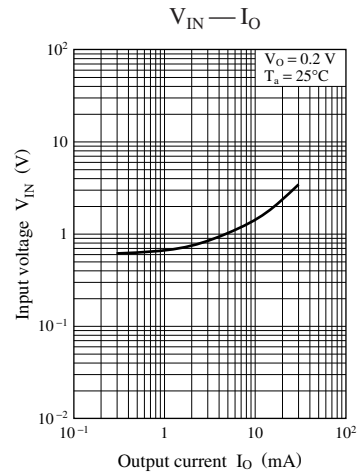
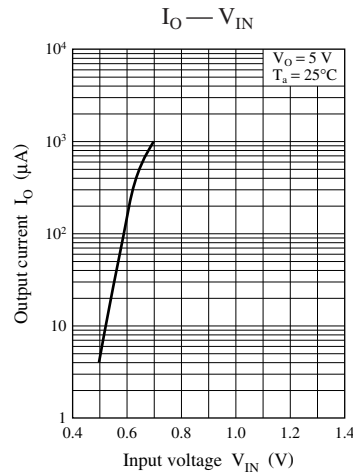
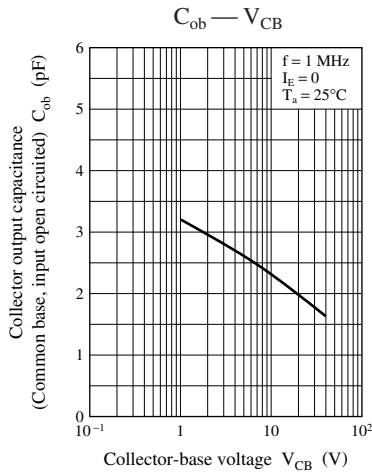
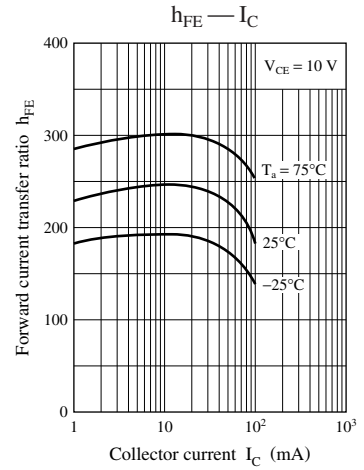
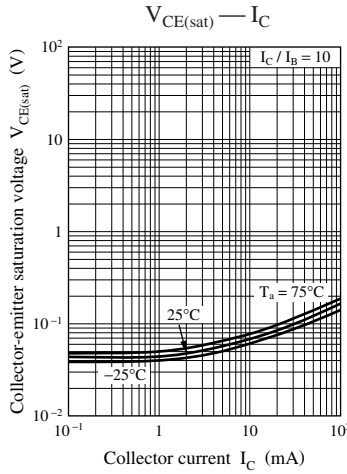
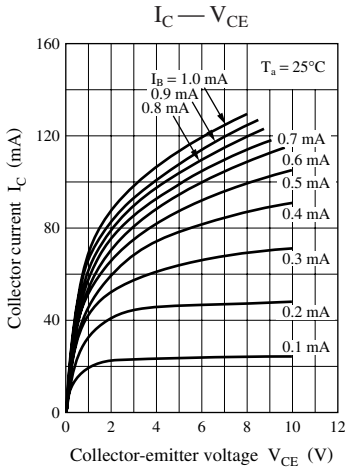




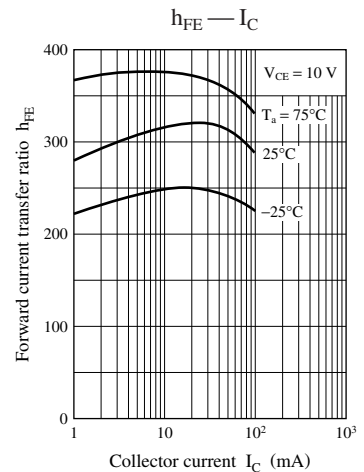
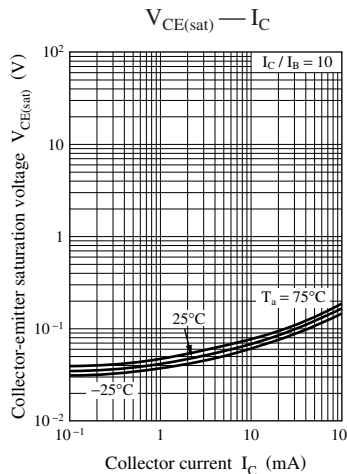
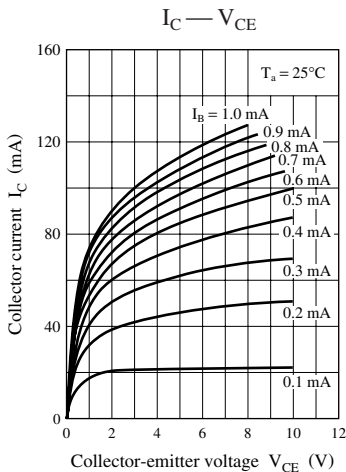
Transistors with built-in Resistor

UNR921xJ Series

Characteristics charts of UNR9215J

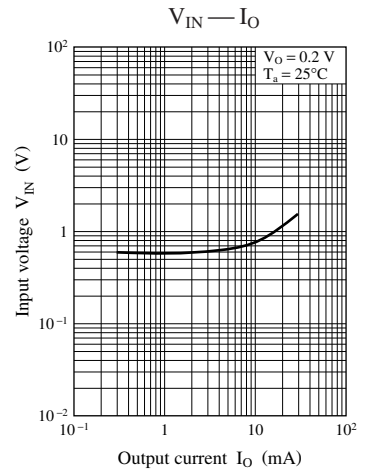
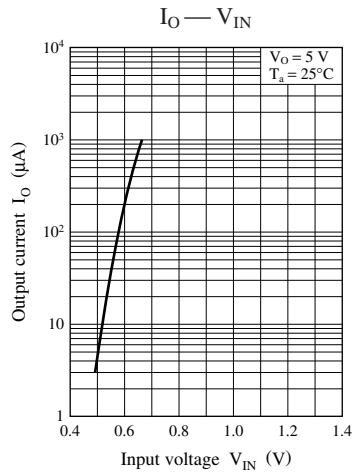
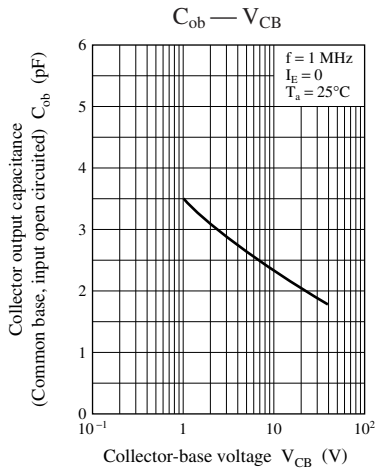


Characteristics charts of UNR9216J

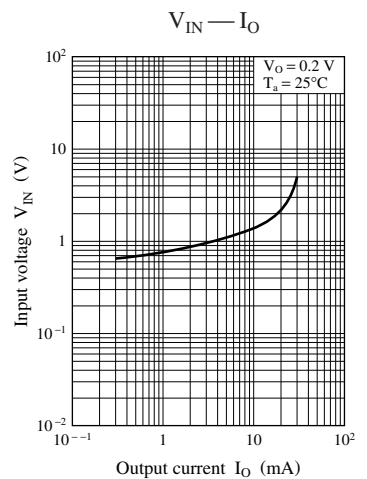
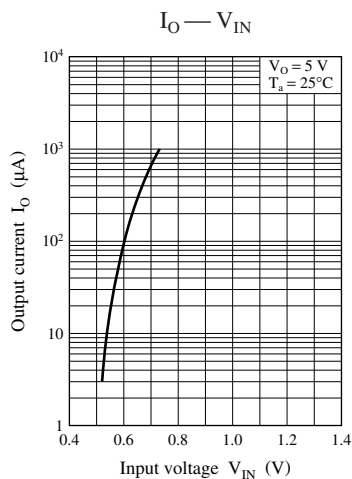
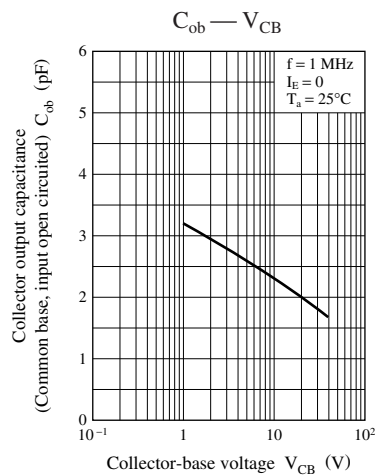
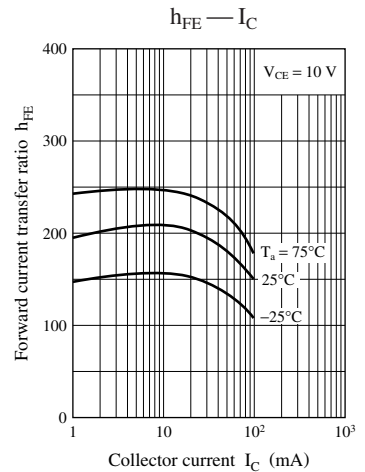
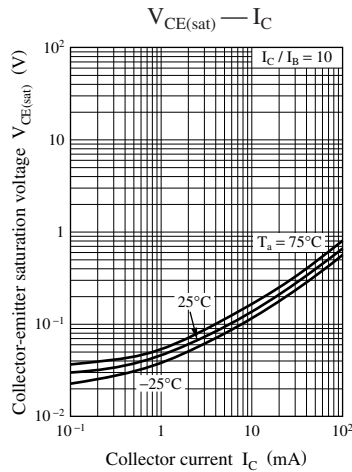
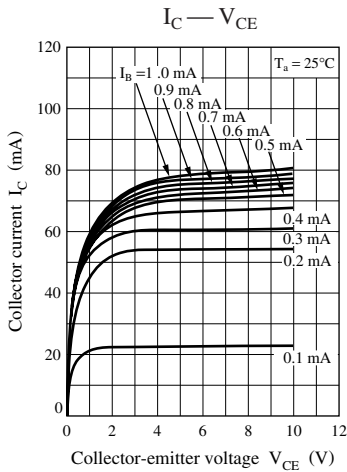


UNR921xJ Series

Transistors with built-in Resistor



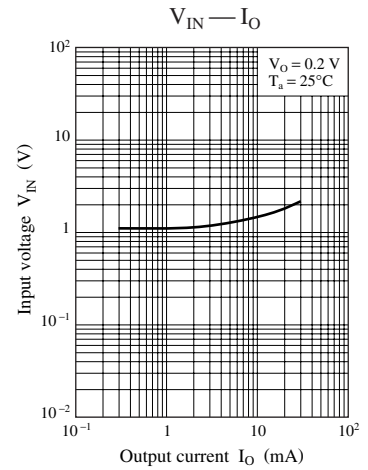
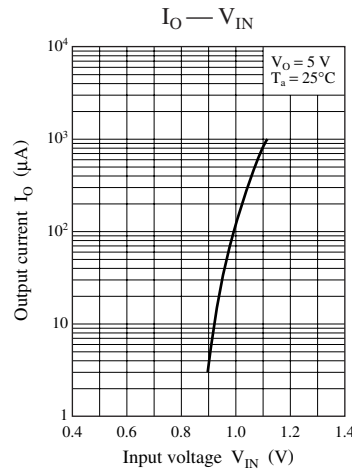
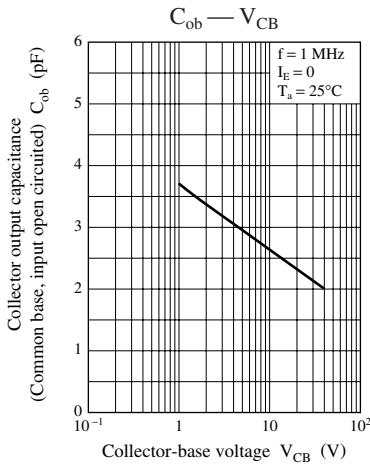
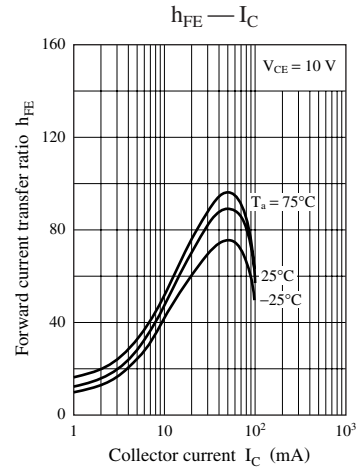
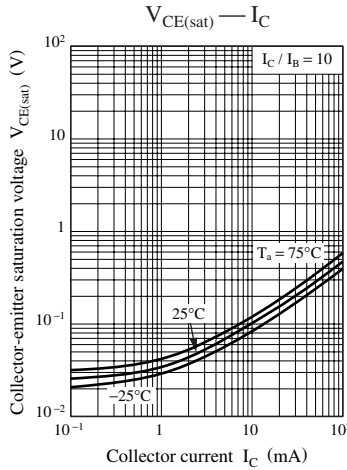
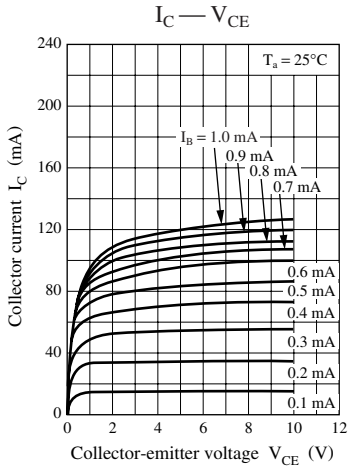
Characteristics charts of UNR9217J



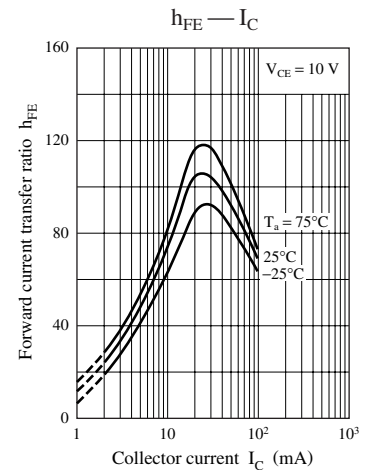
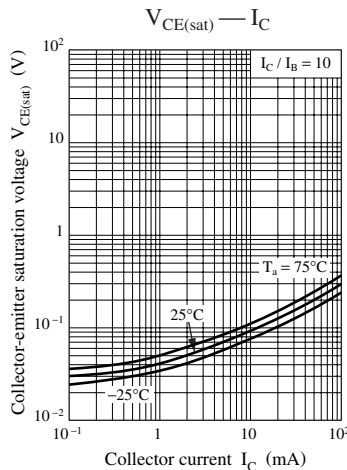
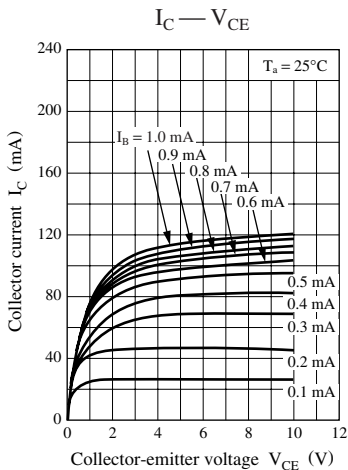
Transistors with built-in Resistor

UNR921xJ Series

Characteristics charts of UNR9218J

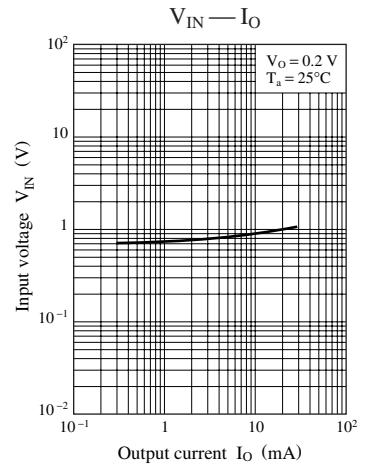
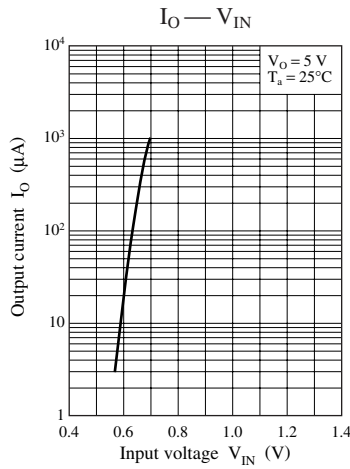
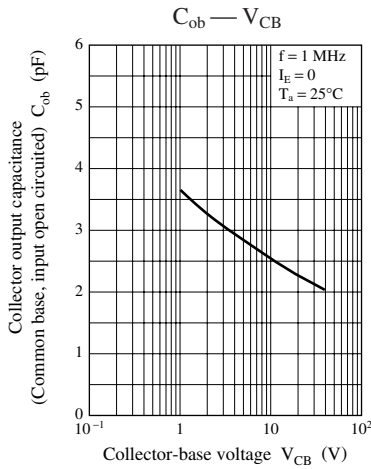


Characteristics charts of UNR9219J

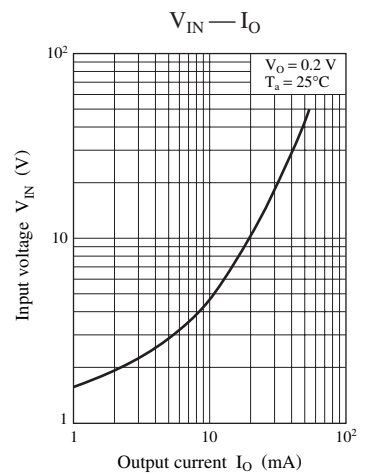
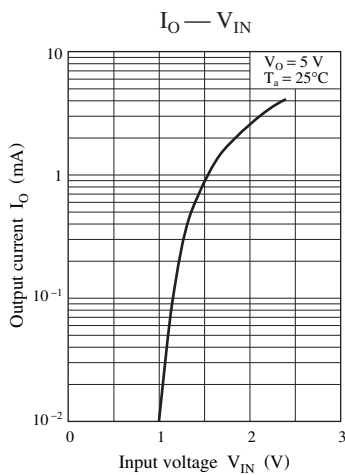
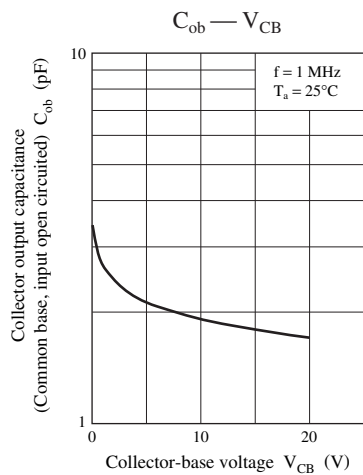
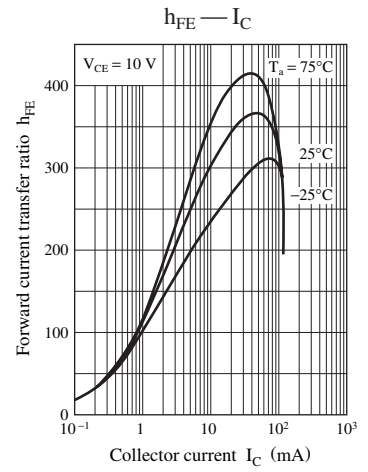
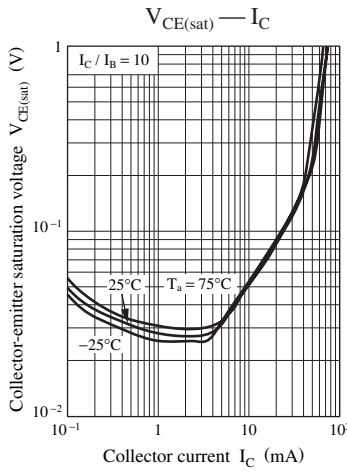
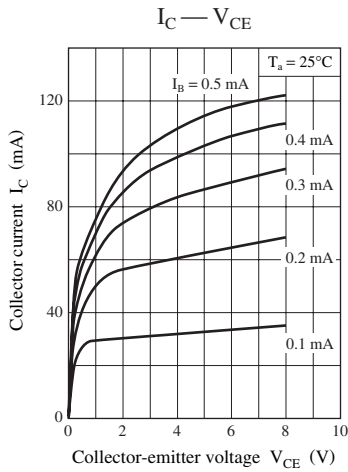


UNR921xJ Series

Transistors with built-in Resistor



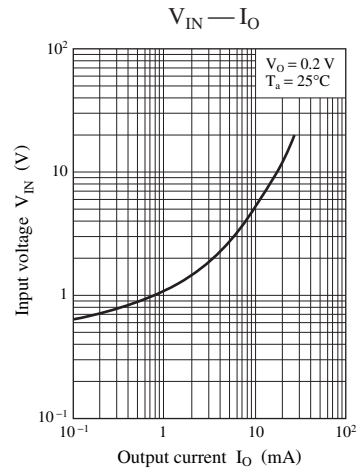
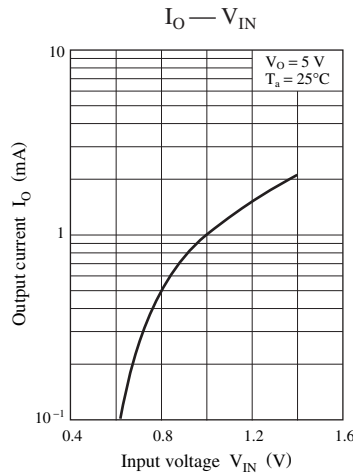
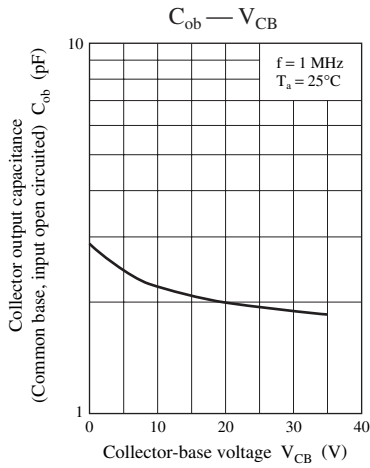
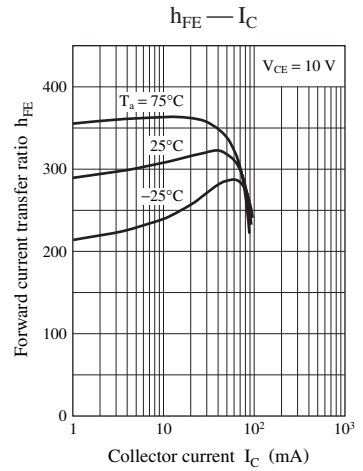
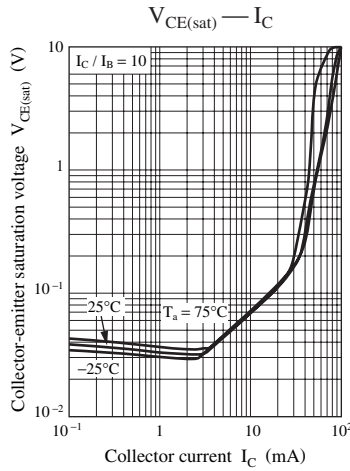
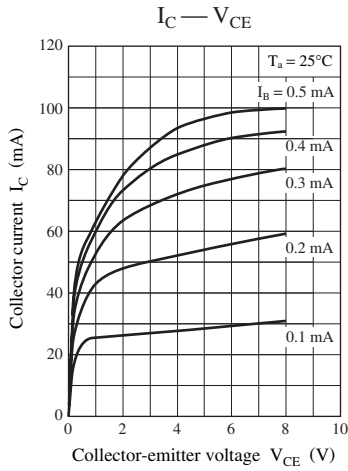
Characteristics charts of UNR921AJ



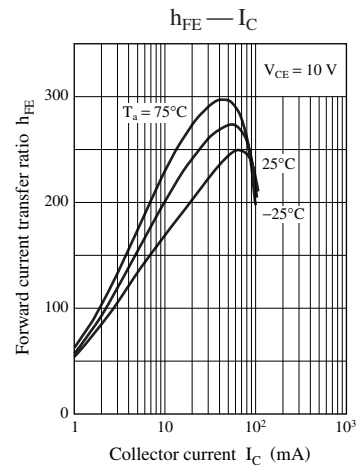
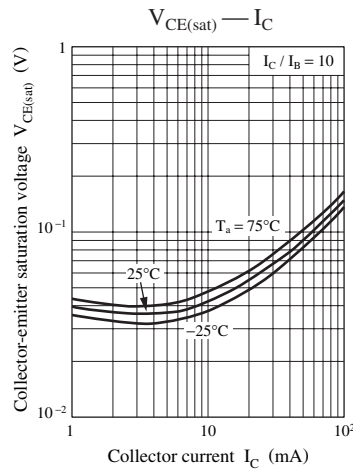
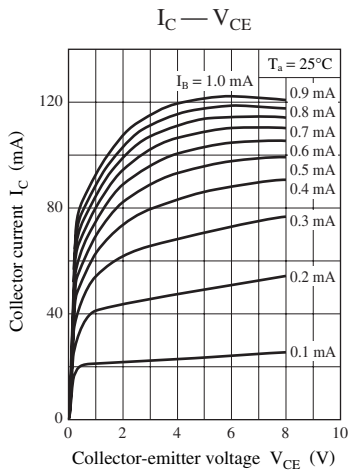
Transistors with built-in Resistor

UNR921xJ Series

Characteristics charts of UNR921BJ



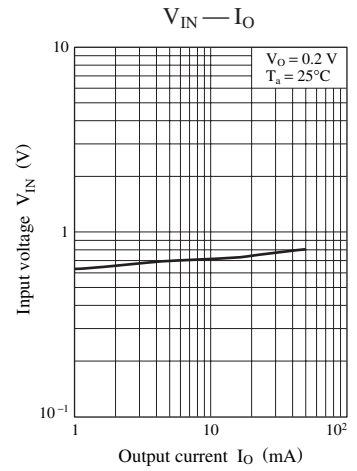
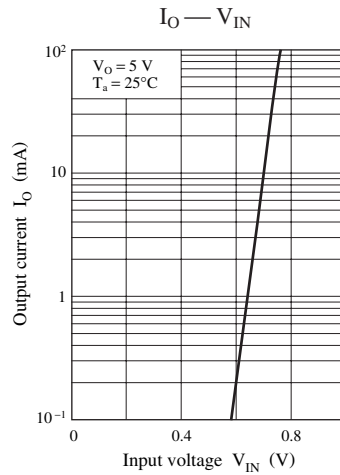
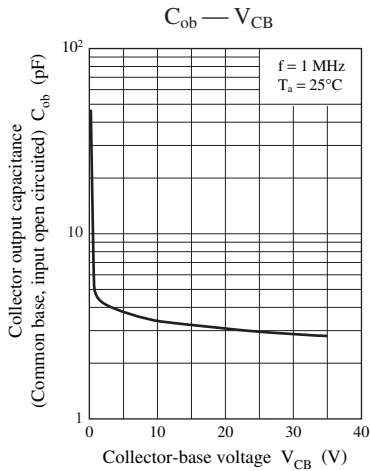
Characteristics charts of UNR921CJ



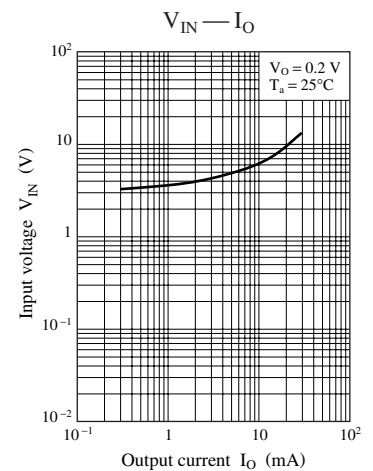
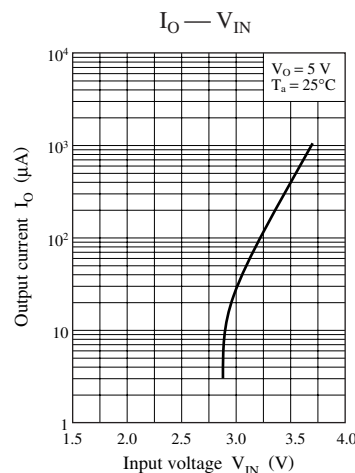
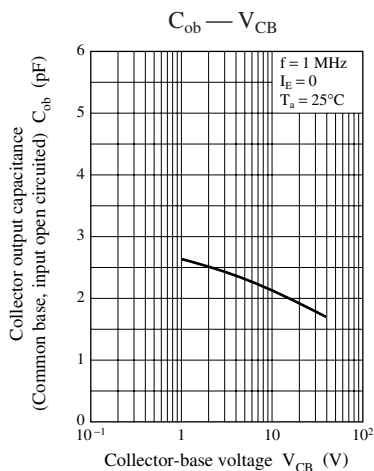
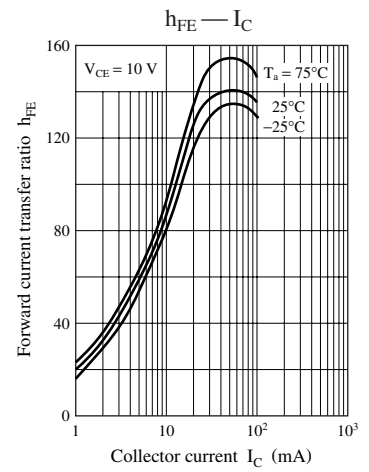
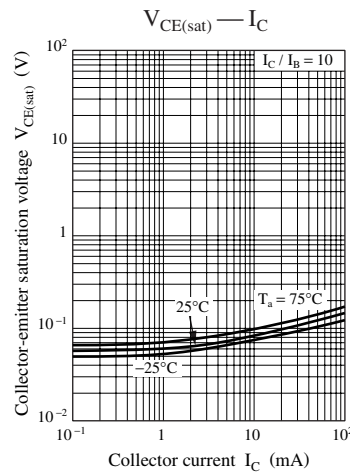
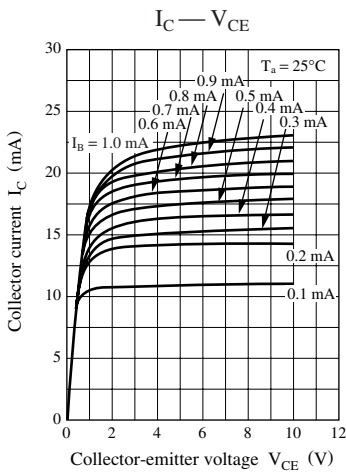


UNR921xJ Series

Transistors with built-in Resistor



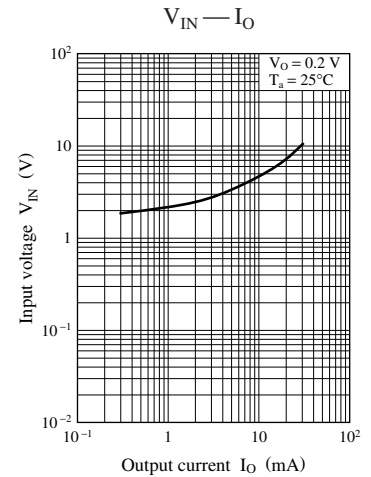
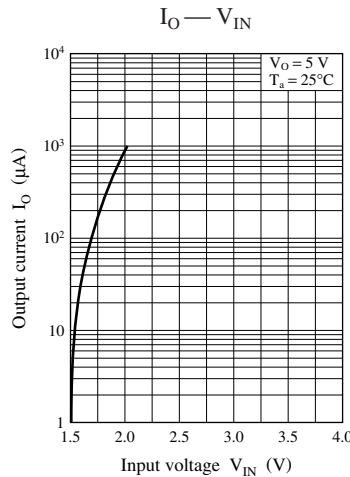
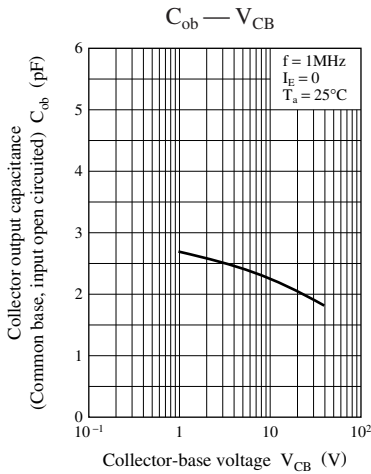
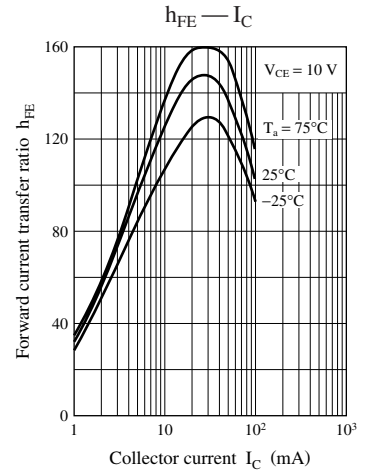
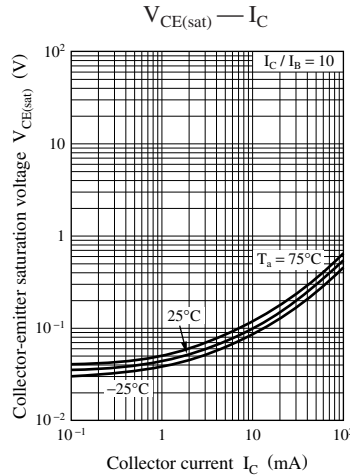
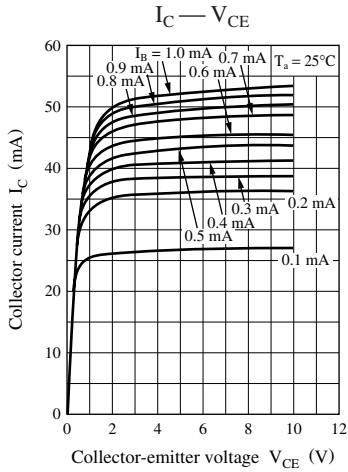
Characteristics charts of UNR921DJ



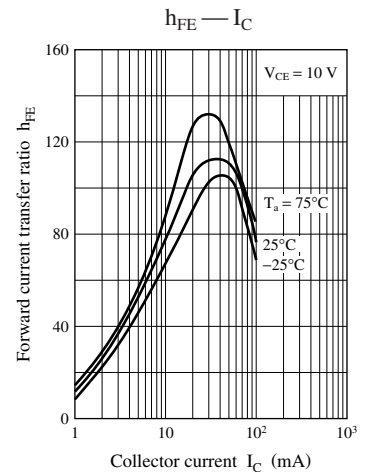
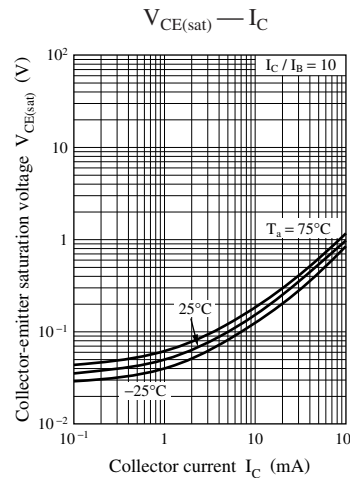
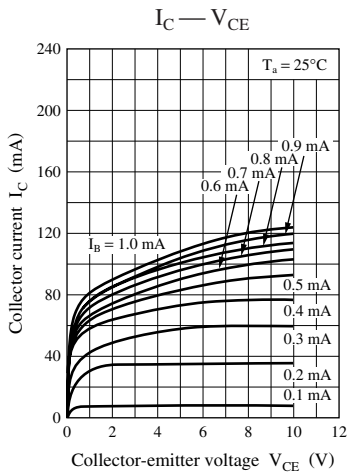
Transistors with built-in Resistor

UNR921xJ Series

Characteristics charts of UNR921EJ

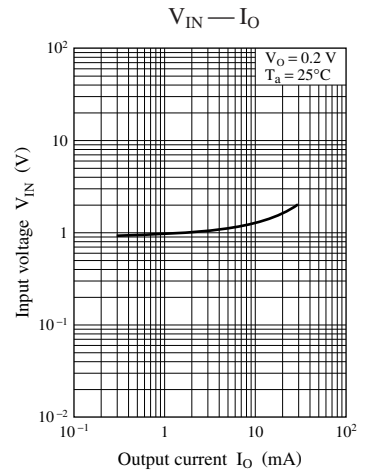
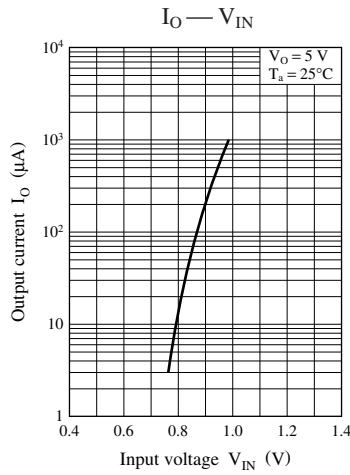
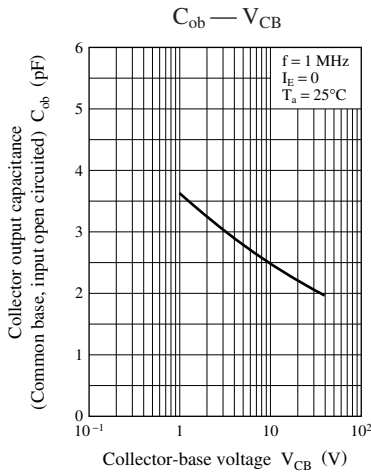


Characteristics charts of UNR921FJ

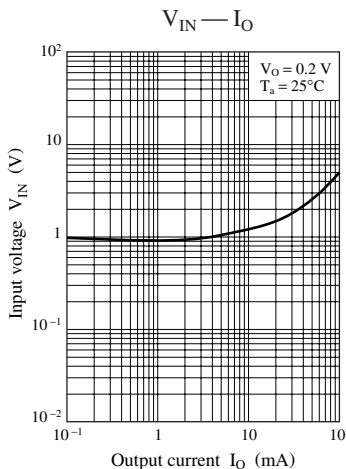
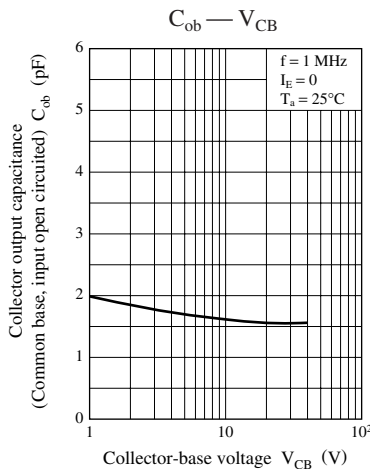
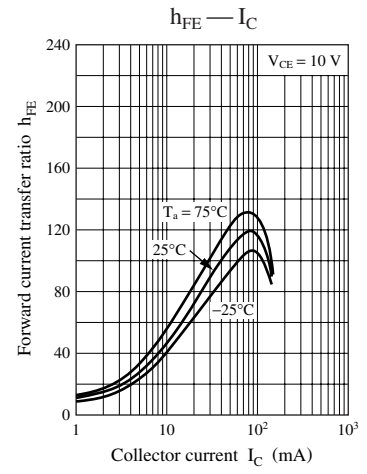
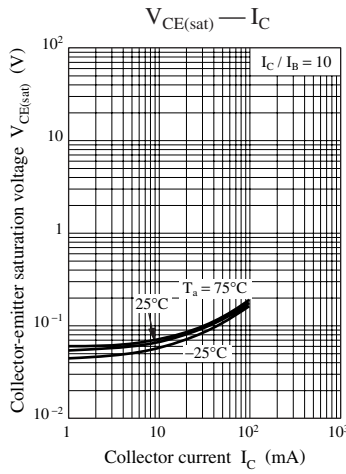
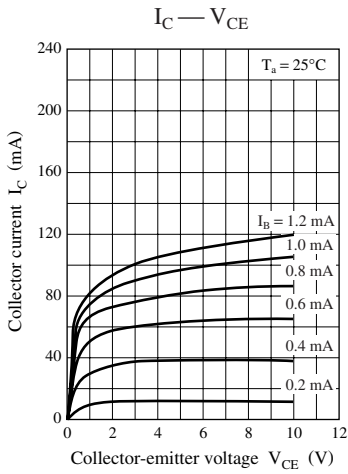


UNR921xJ Series

Transistors with built-in Resistor



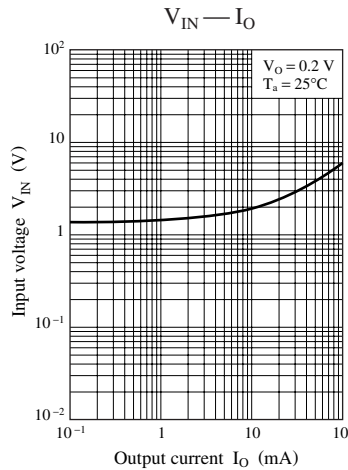
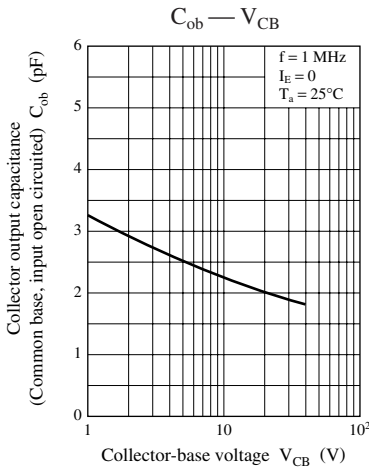
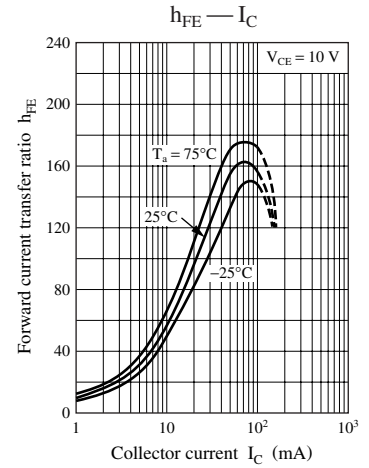
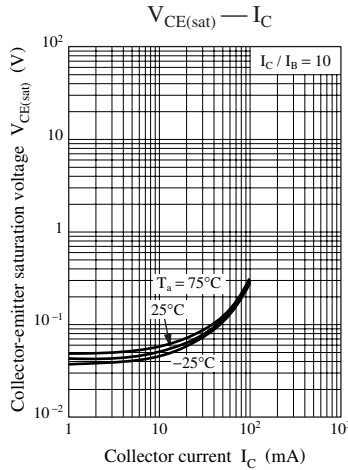
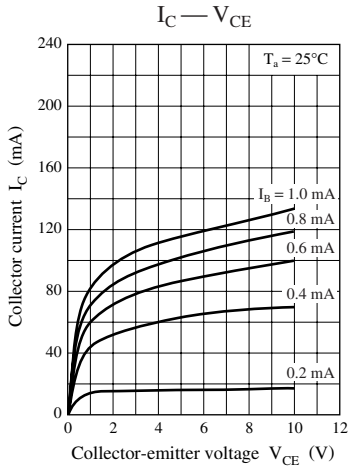
Characteristics charts of UNR921KJ



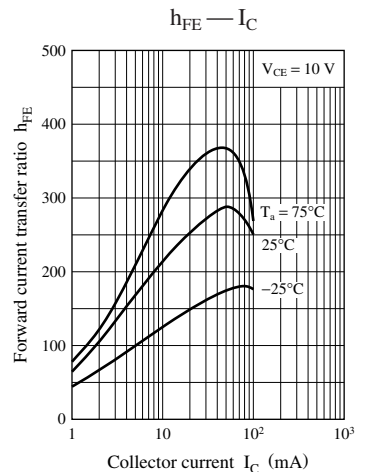
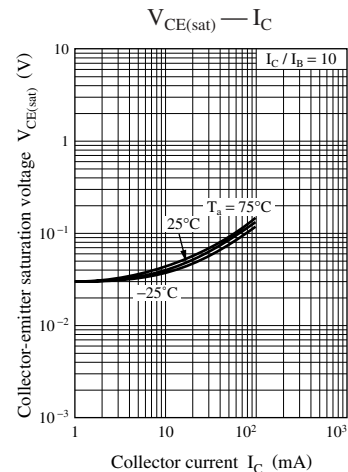
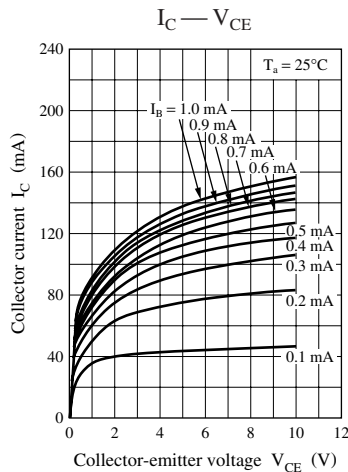
Transistors with built-in Resistor

UNR921xJ Series

Characteristics charts of UNR921LJ

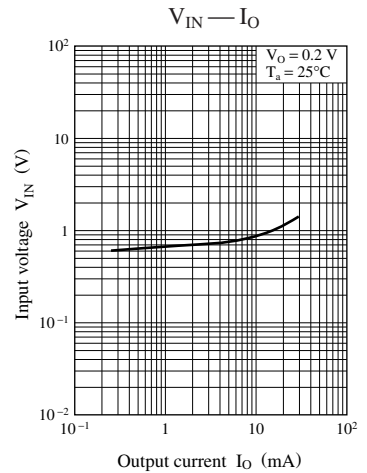
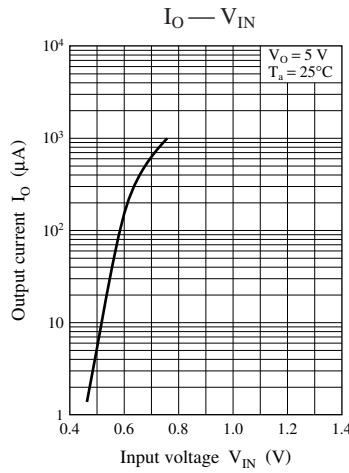
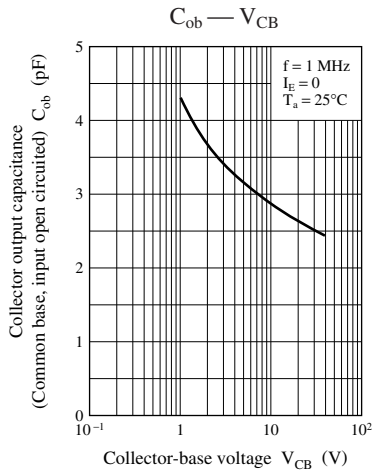


Characteristics charts of UNR921MJ

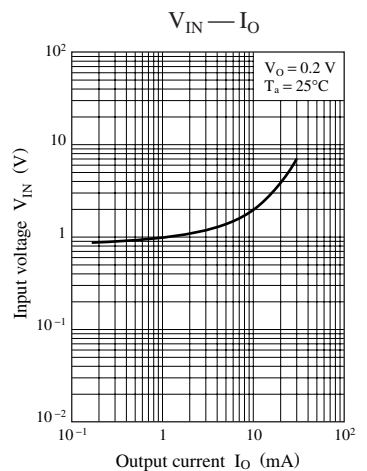
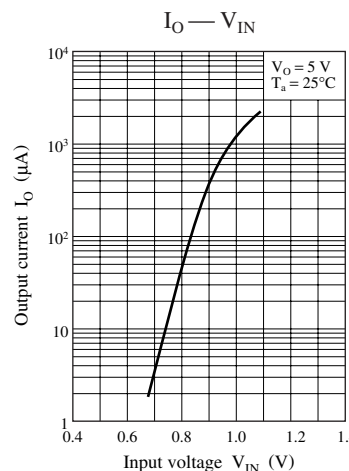
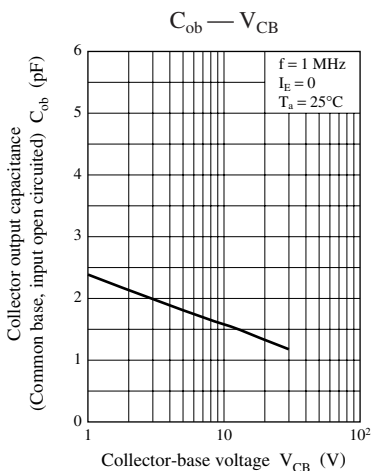
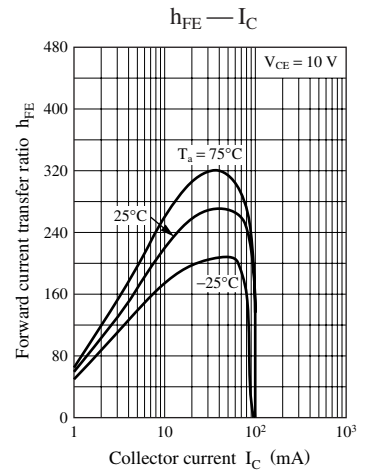
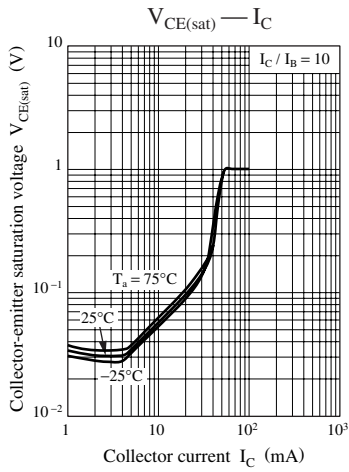
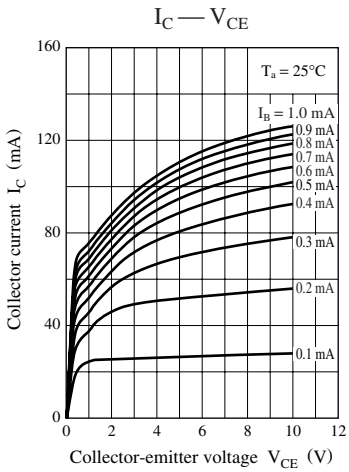


UNR921xJ Series

Transistors with built-in Resistor



Characteristics charts of UNR921NJ

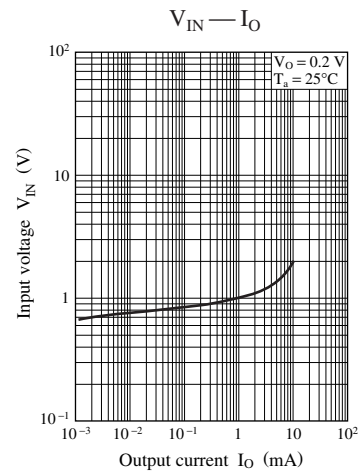
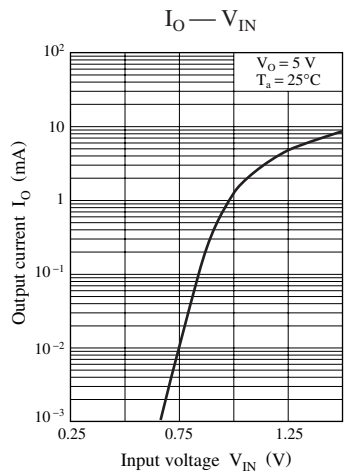
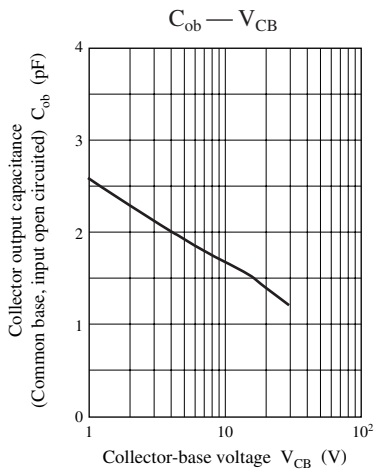
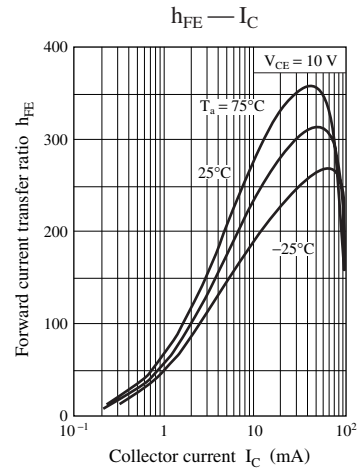
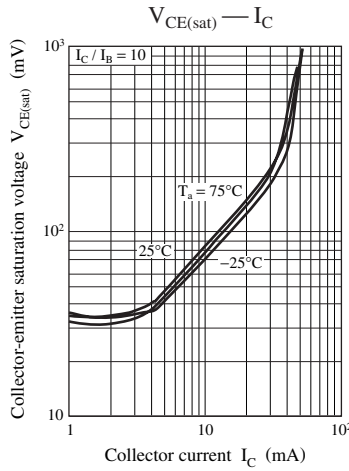
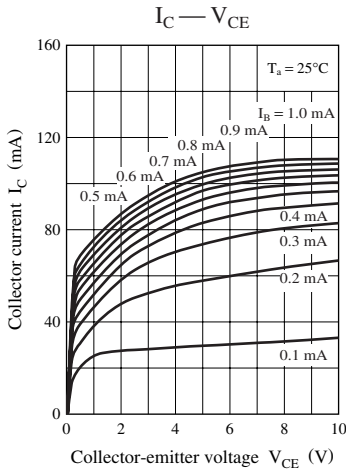




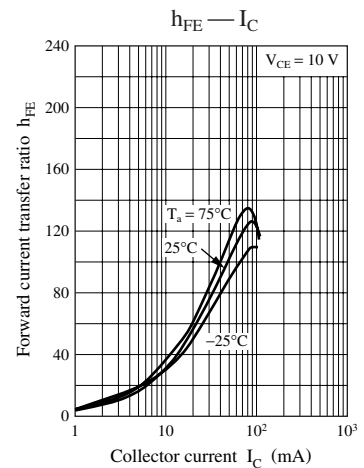
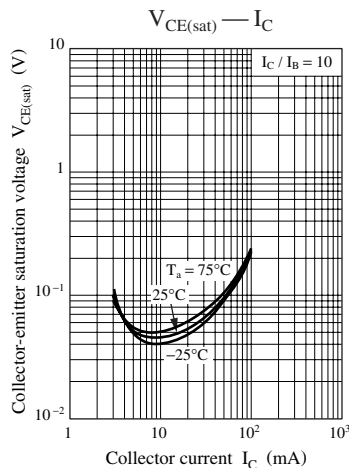
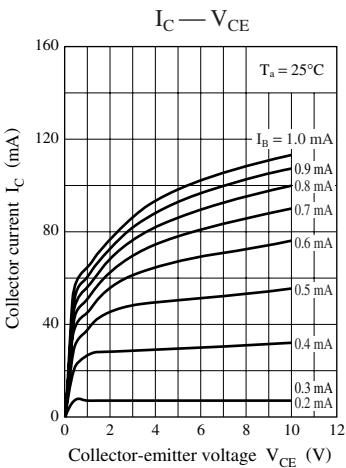
Transistors with built-in Resistor

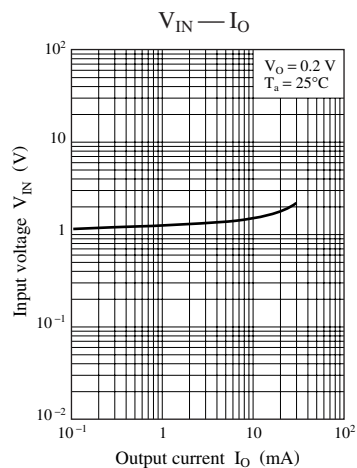
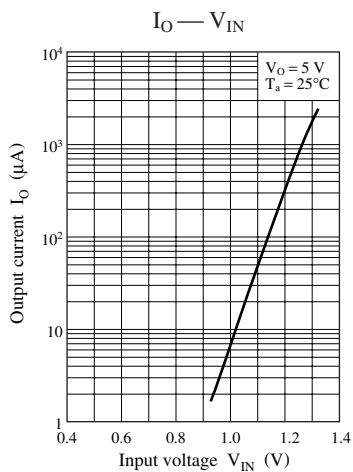
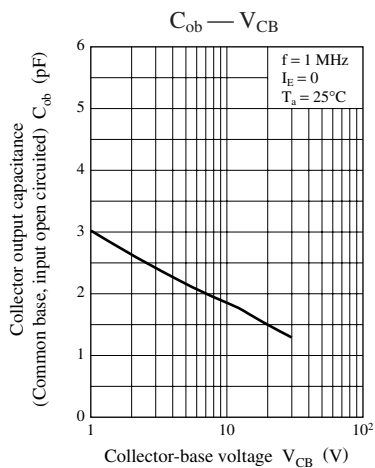
UNR921xJ Series

Characteristics charts of UNR921TJ



Characteristics charts of UNR921VJ





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