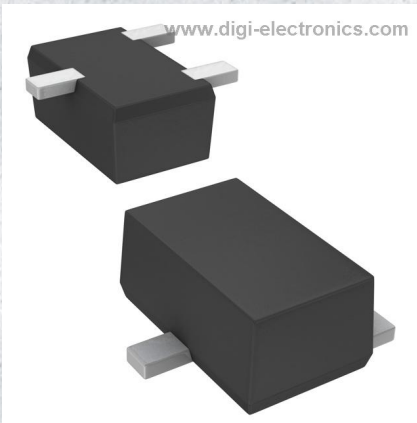


UNR921AG0L Datasheet



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

DiGi Electronics Part Number	UNR921AG0L-DG
Manufacturer	Panasonic Electronic Components
Manufacturer Product Number	UNR921AG0L
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-F3



Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

DiGi is a global authorized distributor of electronic components.

Purchase and inquiry

Manufacturer Product Number:

UNR921AG0L

Series:

-

Transistor Type:

NPN - Pre-Biased

Voltage - Collector Emitter Breakdown (Max):

50 V

Resistor - Emitter Base (R2):

100 kOhms

Vce Saturation (Max) @ Ib, Ic:

250mV @ 300µA, 10mA

Frequency - Transition:

150 MHz

Mounting Type:

Surface Mount

Supplier Device Package:

SSMini3-F3

Manufacturer:

Panasonic Electronic Components

Product Status:

Obsolete

Current - Collector (Ic) (Max):

100 mA

Resistor - Base (R1):

100 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

Moisture Sensitivity Level (MSL):

1 (Unlimited)

HTSUS:

8541.21.0075

ECCN:

EAR99

UNR921xG 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.

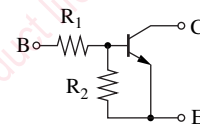
■ Resistance by Part Number

	Marking Symbol	(R ₁)	(R ₂)
• UNR9210G	8L	47 kΩ	—
• UNR9211G	8A	10 kΩ	10 kΩ
• UNR9212G	8B	22 kΩ	22 kΩ
• UNR9213G	8C	47 kΩ	47 kΩ
• UNR9214G	8D	10 kΩ	47 kΩ
• UNR9215G	8E	10 kΩ	—
• UNR9216G	8F	4.7 kΩ	—
• UNR9217G	8H	22 kΩ	—
• UNR9218G	8I	0.51 kΩ	5.1 kΩ
• UNR9219G	8K	1 kΩ	10 kΩ
• UNR921AG	8X	100 kΩ	100 kΩ
• UNR921BG	8Y	100 kΩ	—
• UNR921CG	8Z	—	47 kΩ
• UNR921DG	8M	47 kΩ	10 kΩ
• UNR921EG	8N	47 kΩ	22 kΩ
• UNR921FG	8O	4.7 kΩ	10 kΩ
• UNR921KG	8P	10 kΩ	4.7 kΩ
• UNR921LG	8Q	4.7 kΩ	4.7 kΩ
• UNR921MG	EL	2.2 kΩ	47 kΩ
• UNR921NG	EX	4.7 kΩ	47 kΩ
• UNR921TG	EZ	22 kΩ	47 kΩ
• UNR921VG	FD	2.2 kΩ	2.2 kΩ

■ Package

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

■ Internal Connection



■ Absolute Maximum Ratings T_a = 25°C

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V _{CBO}	50	V
Collector-emitter voltage (Base open)	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

■ 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	μA	
Collector-emitter cut-off current (Base open)		I_{CEO}	$V_{CE} = 50 \text{ V}, I_B = 0$			0.5	μA	
Emitter-base cut-off current (Collector open)	UNR9210G/9215G/9216G/9217G/921BG	I_{EBO}	$V_{EB} = 6 \text{ V}, I_C = 0$			0.01	mA	
	UNR9213G/921AG					0.1		
	UNR9212G/9214G/921DG/921EG/921MG/921NG/921TG					0.2		
	UNR9211G					0.5		
	UNR921FG/921KG					1.0		
	UNR9219G					1.5		
	UNR9218G/921CG/921LG/921VG					2.0		
Forward current transfer ratio	UNR921VG	h_{FE}	$V_{CE} = 10 \text{ V}, I_C = 5 \text{ mA}$	6		20	—	
	UNR9218G/921KG/921LG			20				
	UNR9219G/921DG/921FG			30				
	UNR9211G			35				
	UNR9212G/921EG			60				
	UNR9213G/9214G/921AG/921CG/921MG			80				
	UNR921NG/921TG			80	400			
	UNR9210G/9215G/9216G/9217G/921BG			160	460			
Collector-emitter saturation voltage		$V_{CE(sat)}$	$I_C = 10 \text{ mA}, I_B = 0.3 \text{ mA}$			0.25	V	
UNR921VG				$I_C = 10 \text{ mA}, I_B = 1.5 \text{ mA}$				
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	
UNR9213G/921BG/921KG				$V_{CC} = 5 \text{ V}, V_B = 3.5 \text{ V}, R_L = 1 \text{ k}\Omega$				
UNR921DG				$V_{CC} = 5 \text{ V}, V_B = 10 \text{ V}, R_L = 1 \text{ k}\Omega$				
UNR921EG				$V_{CC} = 5 \text{ V}, V_B = 6 \text{ V}, R_L = 1 \text{ k}\Omega$				
UNR921AG				$V_{CC} = 5 \text{ V}, V_B = 5 \text{ V}, R_L = 1 \text{ k}\Omega$				
Transition frequency		f_T	$V_{CB} = 10 \text{ V}, I_E = -2 \text{ mA}, f = 200 \text{ MHz}$		150		MHz	
Input resistance	UNR9218G	R_1		-30%	0.51	+30%	k Ω	
	UNR9219G				1			
	UNR921MG/921VG				2.2			
	UNR9216G/921FG/921LG/921NG				4.7			
	UNR9211G/9214G/9215G/921KG				10			
	UNR9212G/9217G/921TG				22			
	UNR9210G/9213G/921DG/921EG				47			
	UNR921AG/921BG				100			

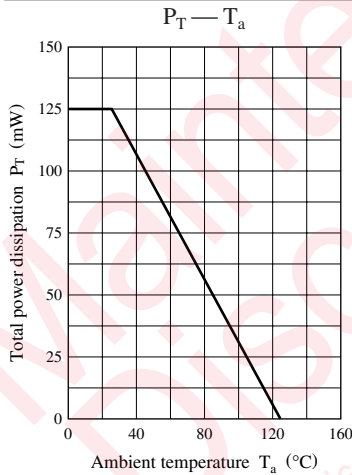
Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

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

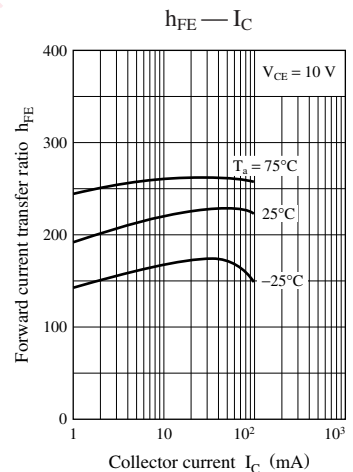
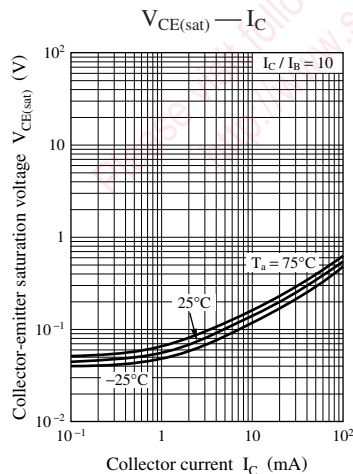
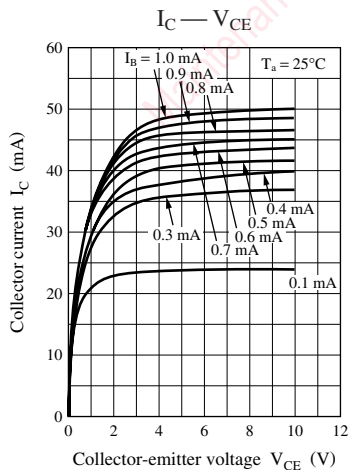
Parameter		Symbol	Conditions	Min	Typ	Max	Unit
Emitter-base resistance	UNR921CG	R_2		-30%	47	+30%	k Ω
Resistance ratio	UNR921MG	R_1/R_2			0.047		—
	UNR921NG				0.1		
	UNR9218G/9219G			0.08	0.10	0.12	
	UNR9214G			0.17	0.21	0.25	
	UNR921TG				0.47		
	UNR921FG			0.37	0.47	0.57	
	UNR921AG/921VG				1.0		
	UNR9211G/9212G/9213G/921LG			0.8	1.0	1.2	
	UNR921KG			1.70	2.13	2.60	
	UNR921EG			1.70	2.14	2.60	
UNR921DG		3.7	4.7	5.7			

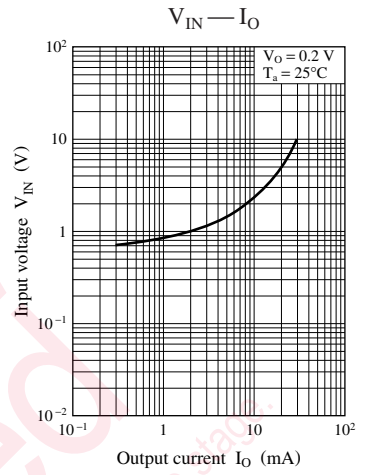
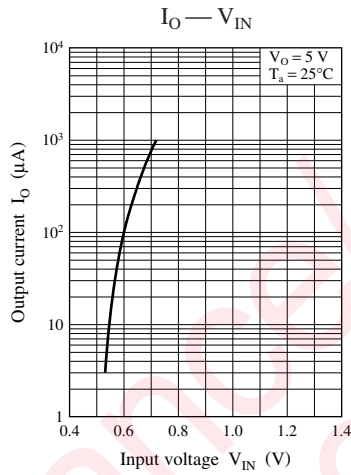
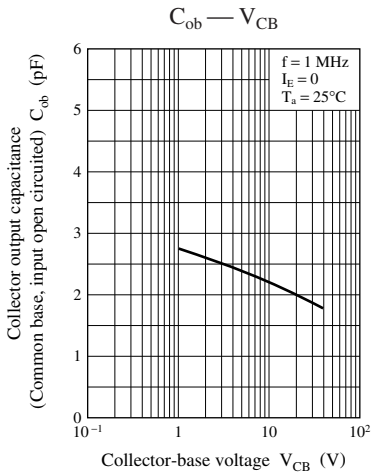
Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

Common characteristics chart

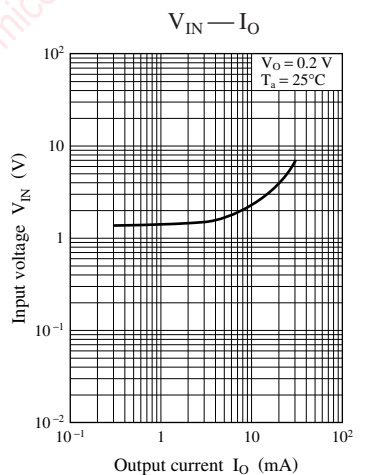
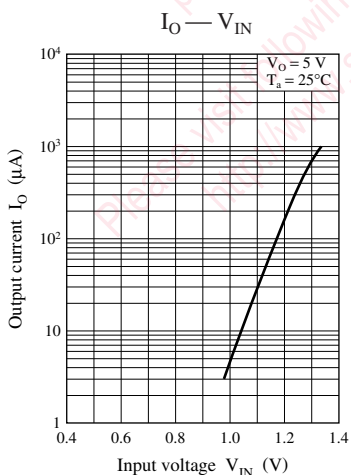
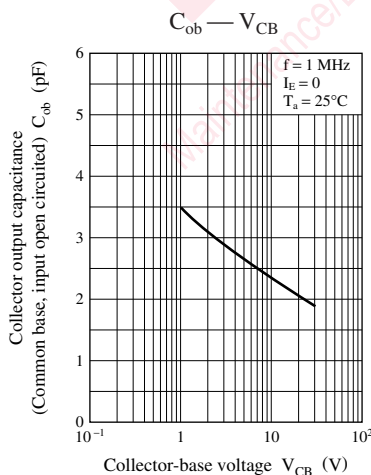
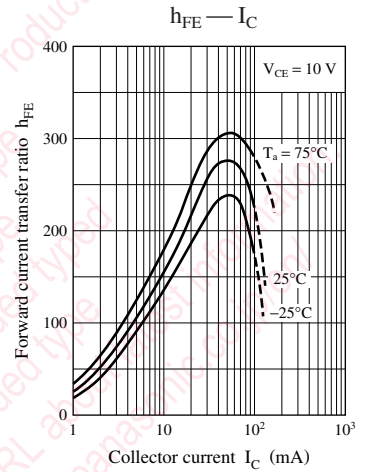
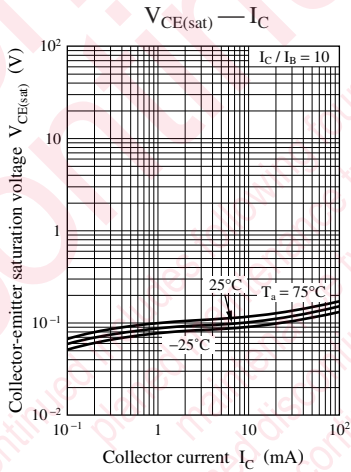
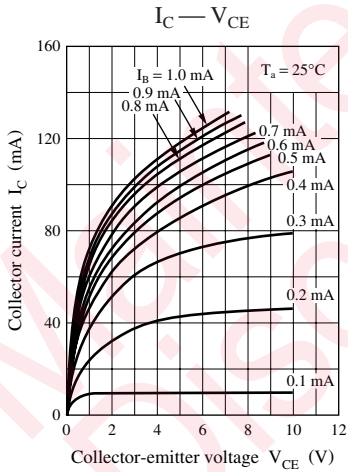


Characteristics charts of UNR9210G

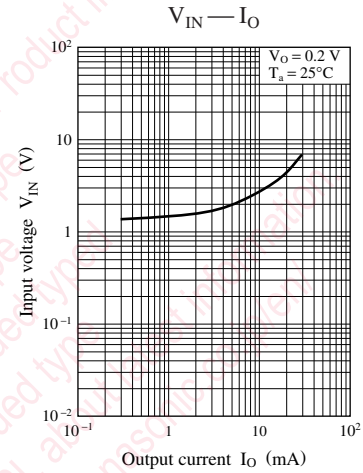
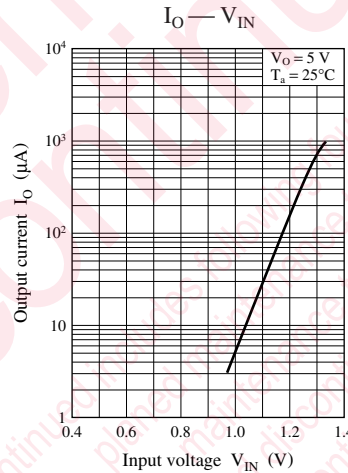
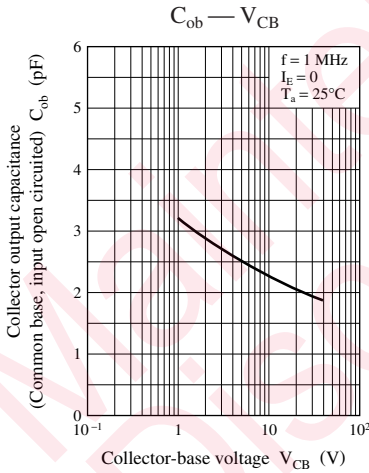
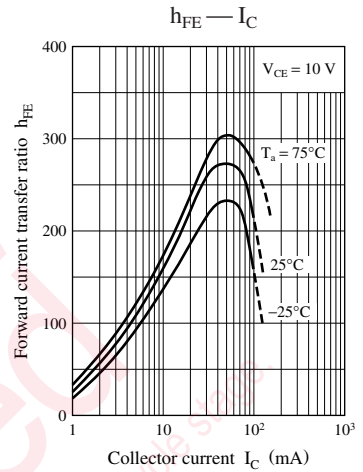
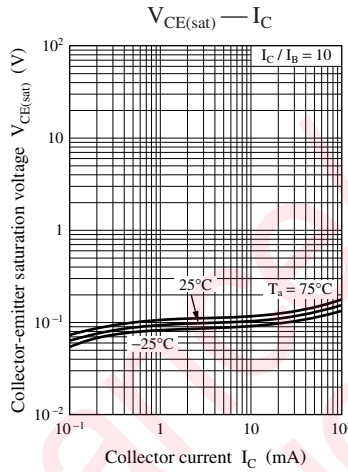
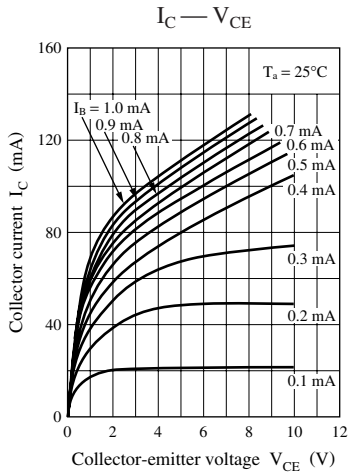




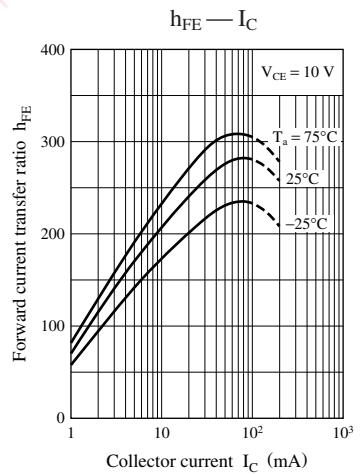
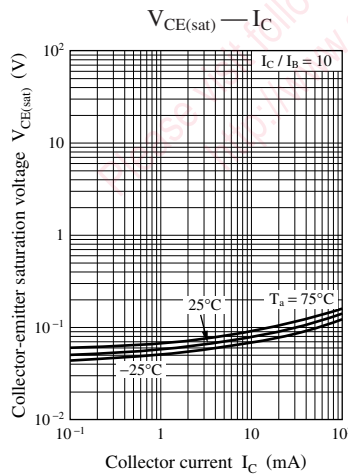
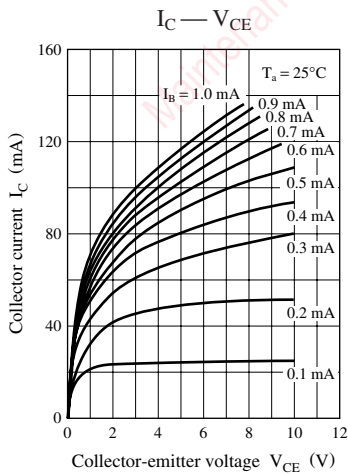
Characteristics charts of UNR9211G

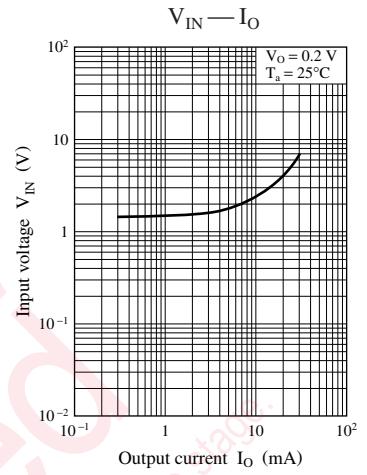
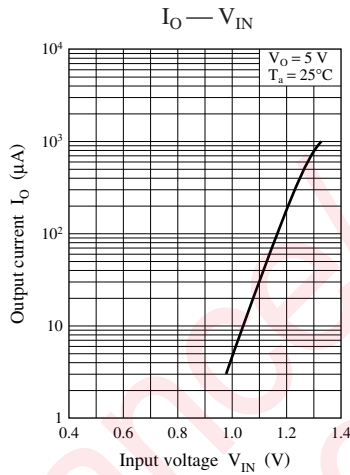
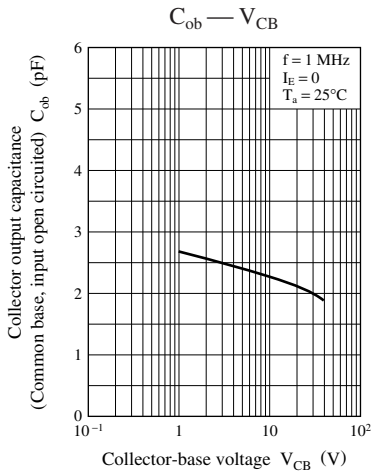


Characteristics charts of UNR9212G

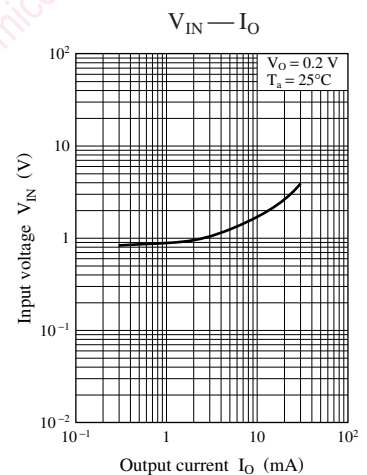
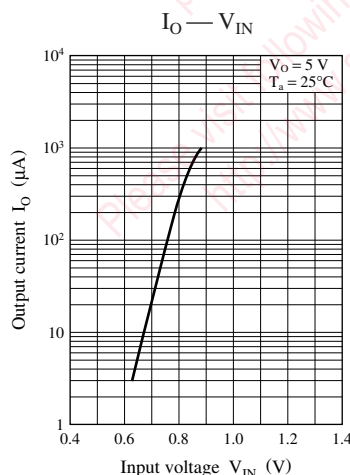
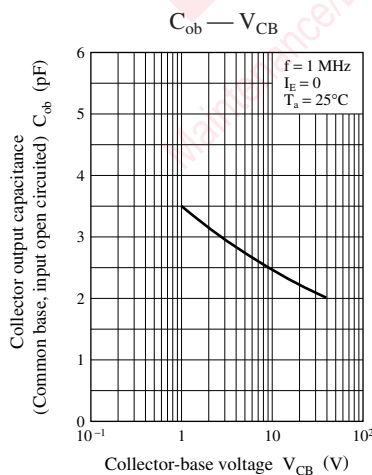
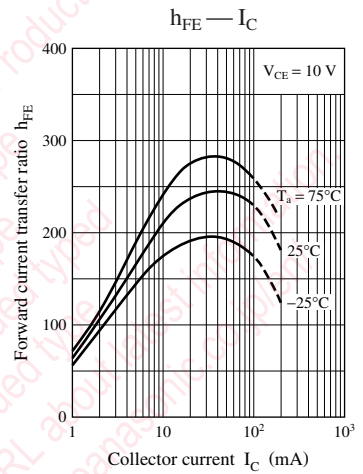
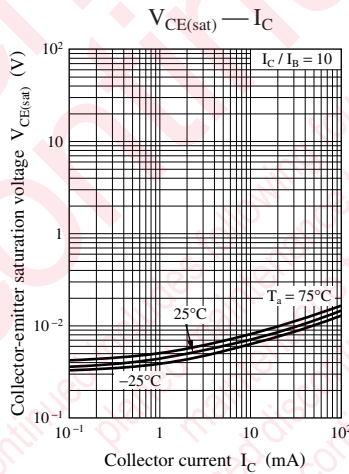
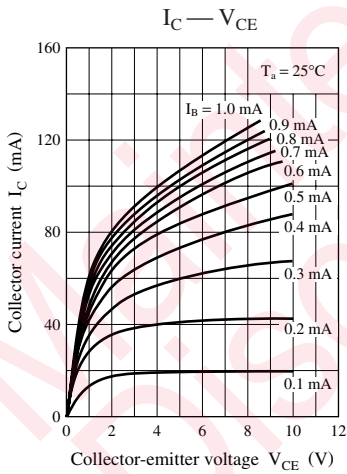


Characteristics charts of UNR9213G

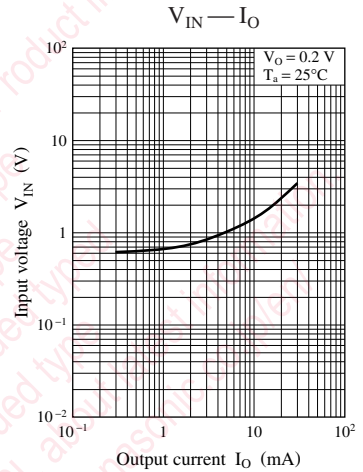
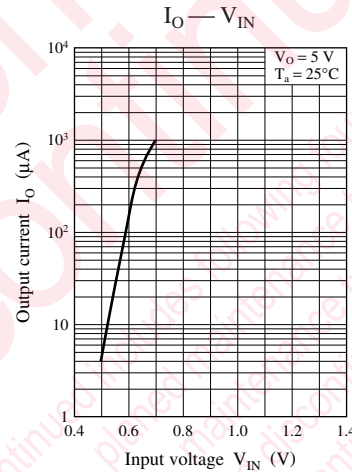
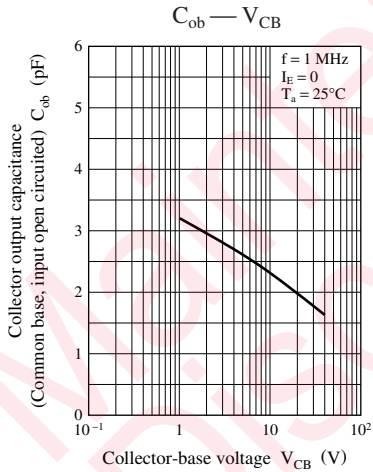
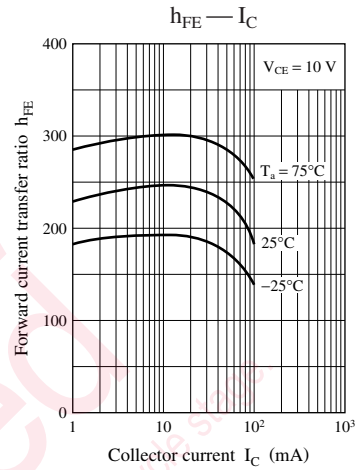
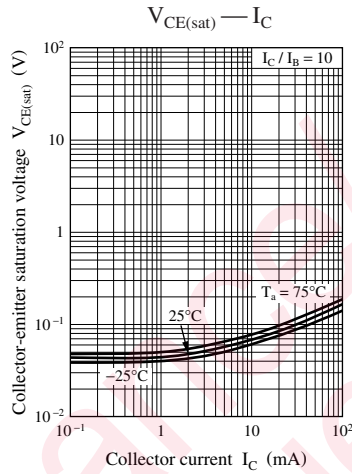
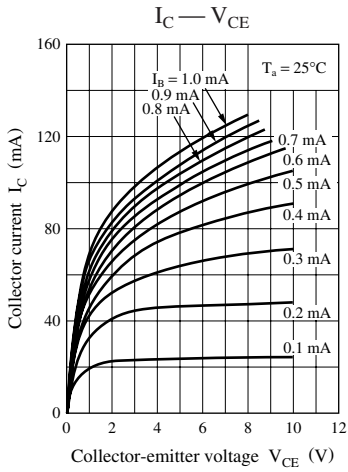




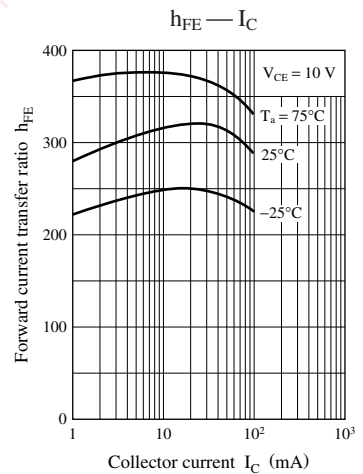
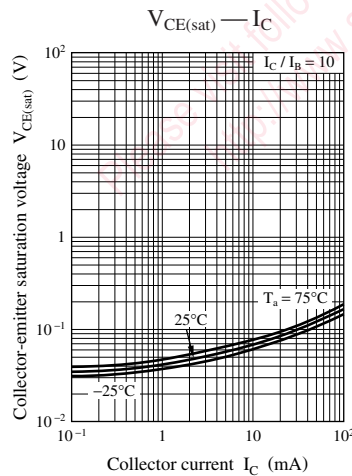
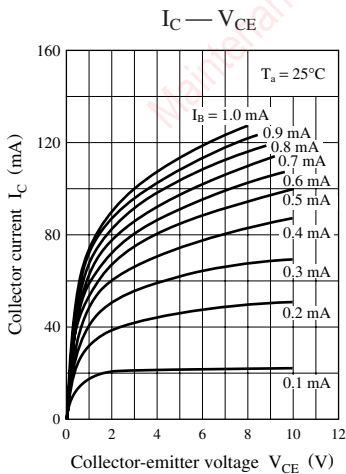
Characteristics charts of UNR9214G

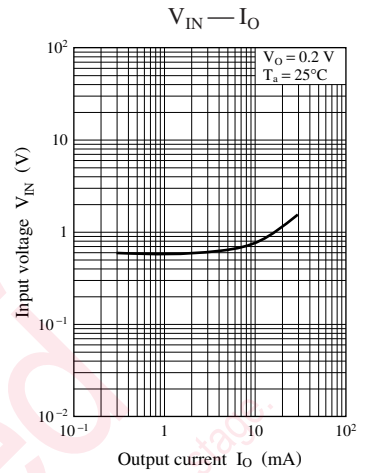
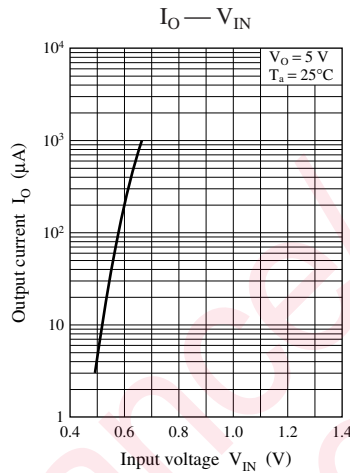
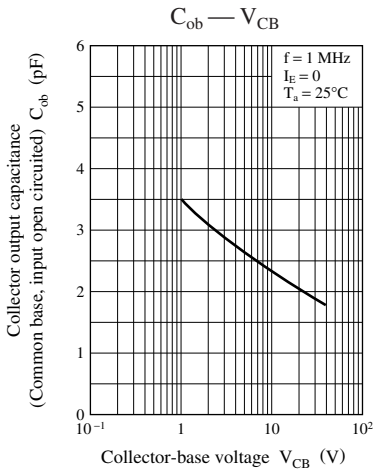


Characteristics charts of UNR9215G

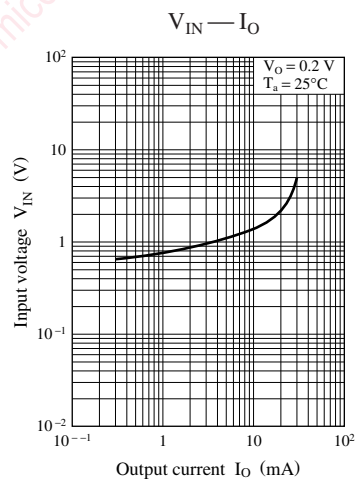
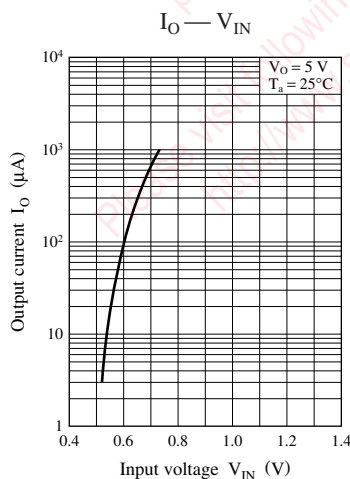
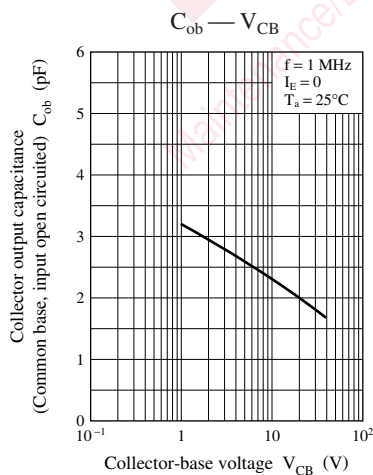
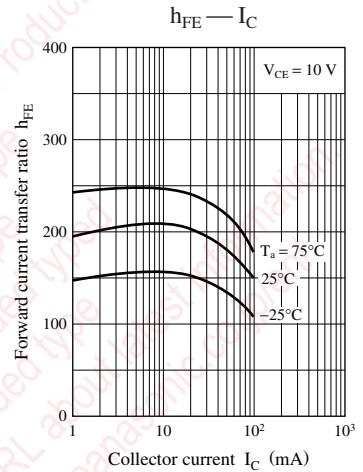
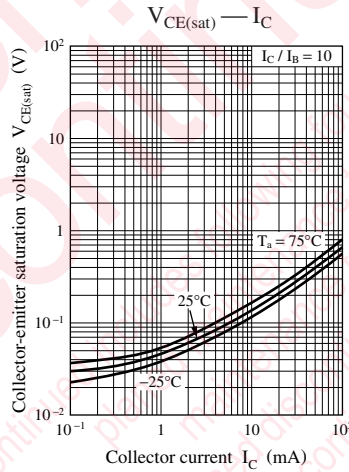
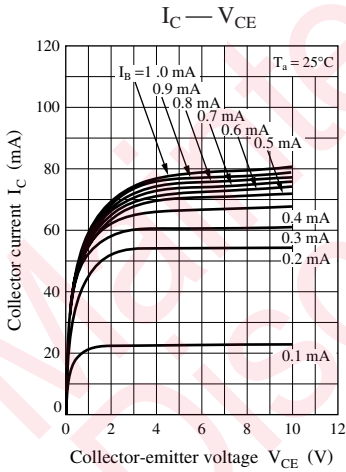


Characteristics charts of UNR9216G

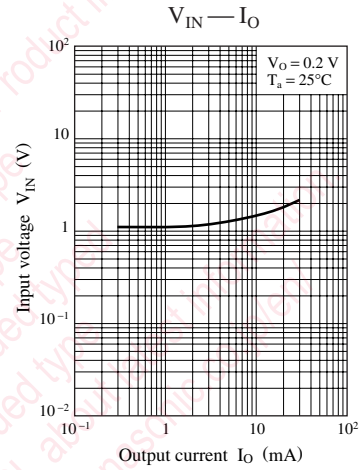
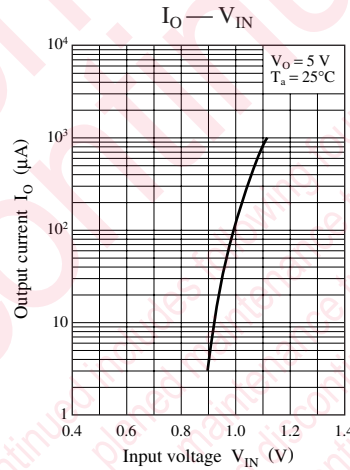
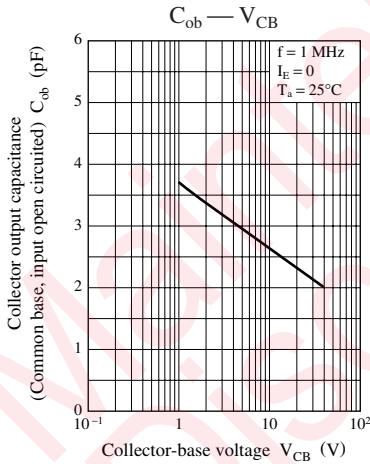
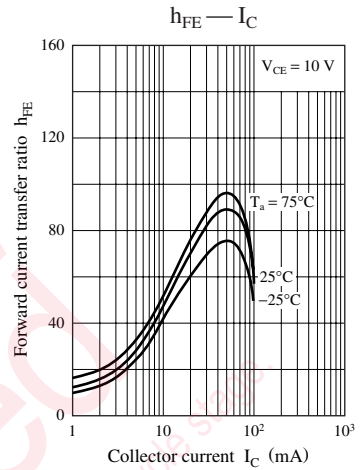
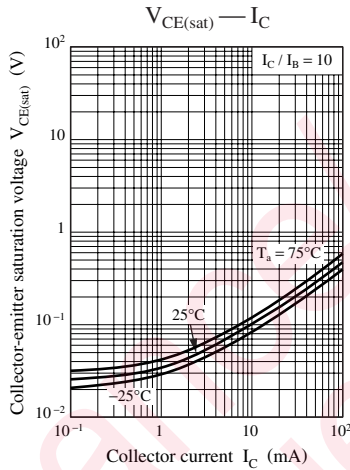
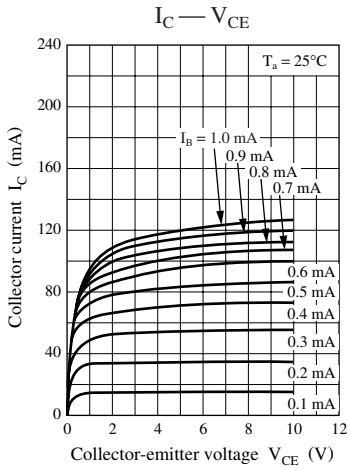




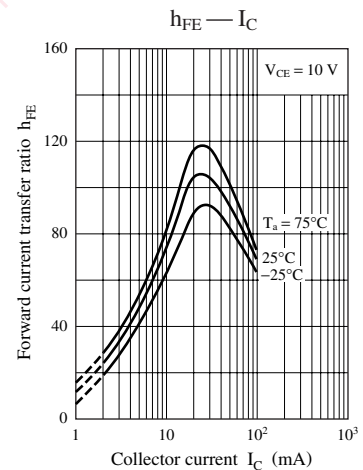
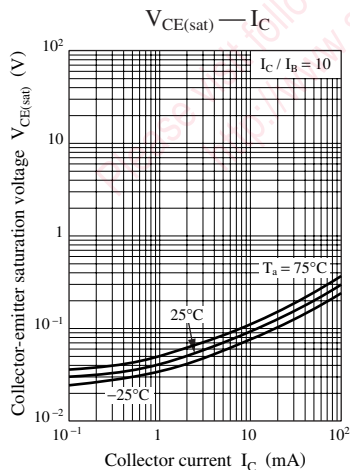
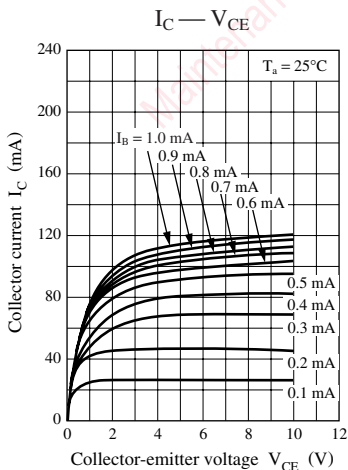
Characteristics charts of UNR9217G

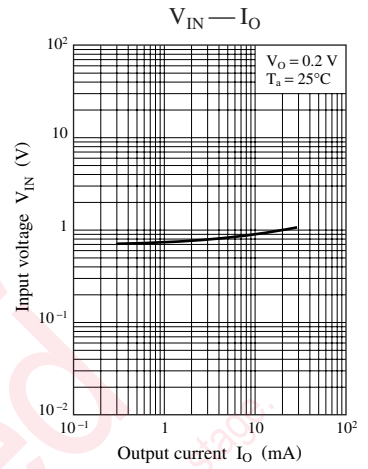
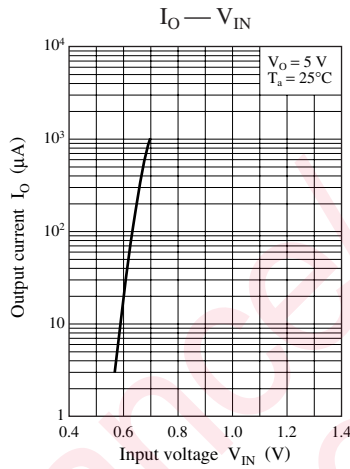
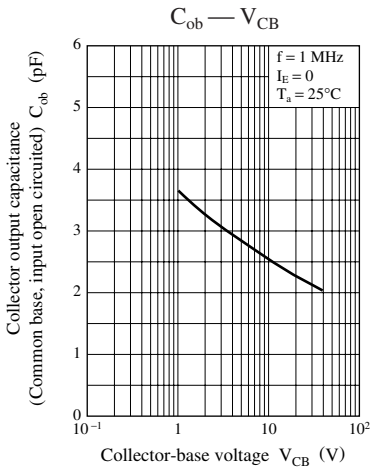


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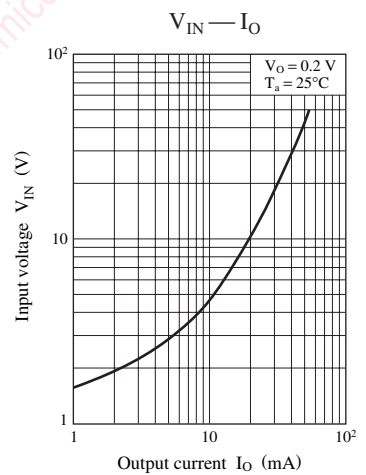
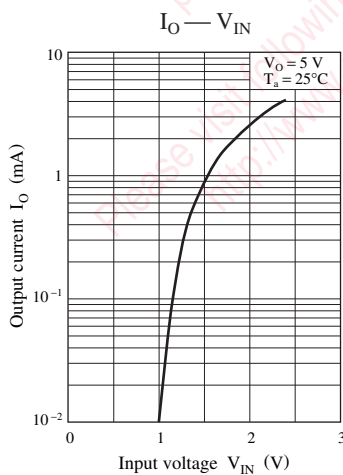
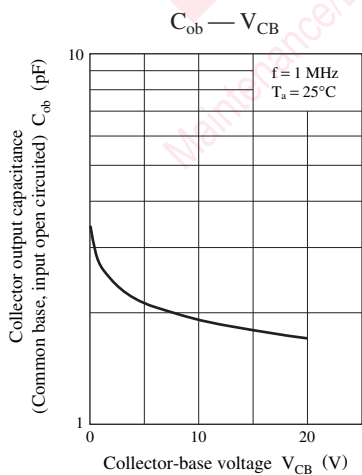
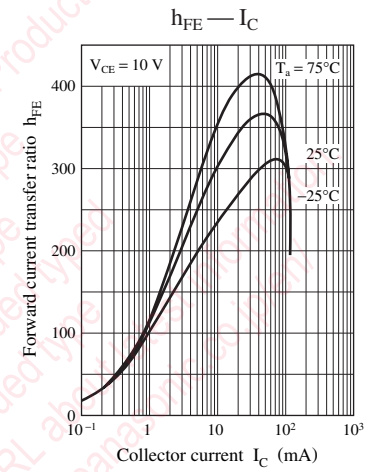
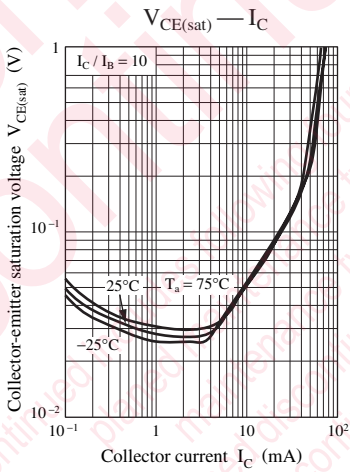
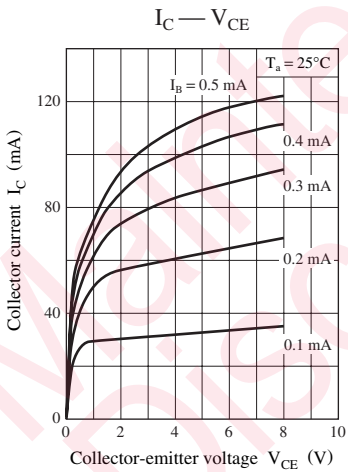


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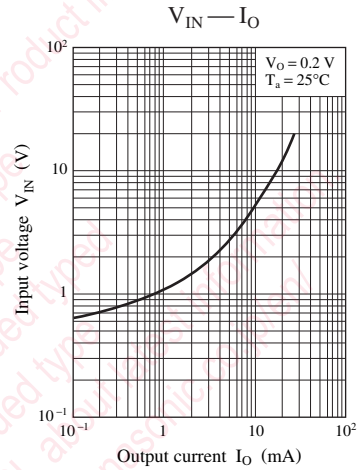
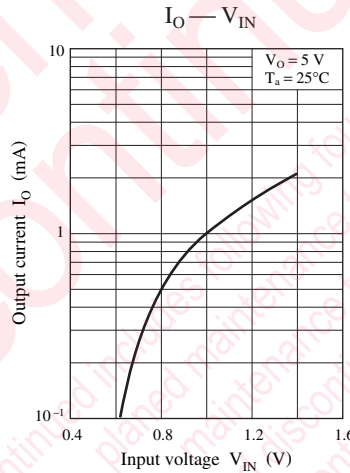
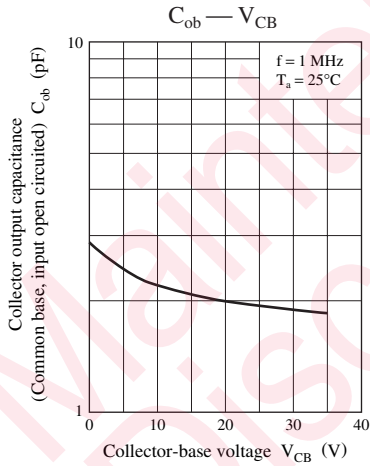
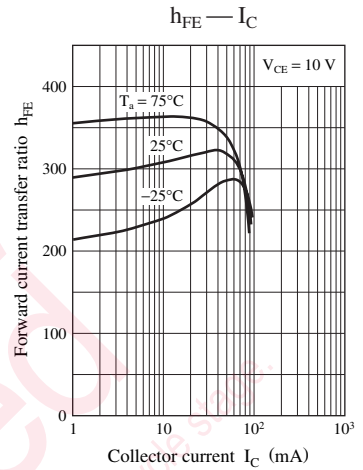
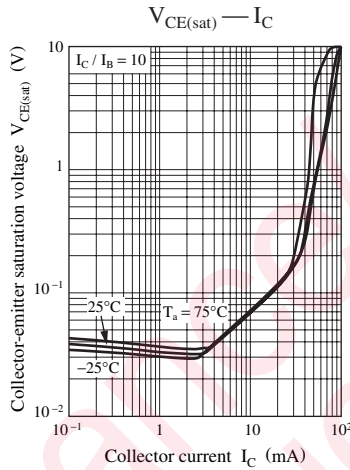
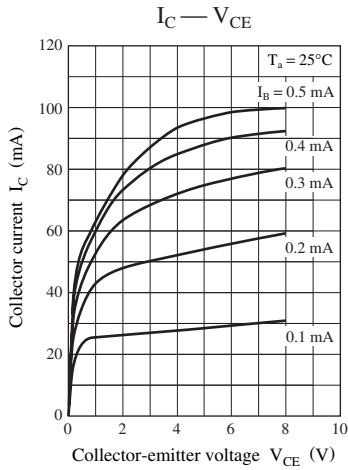




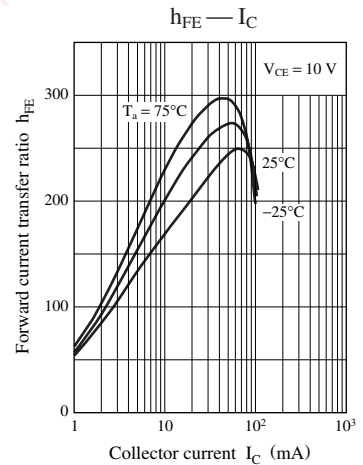
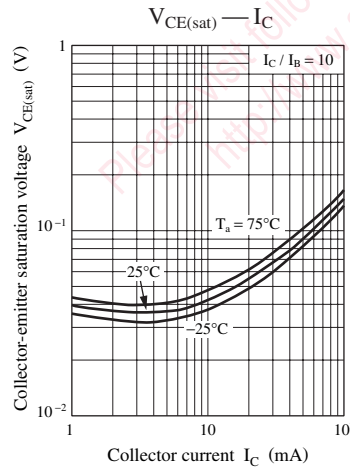
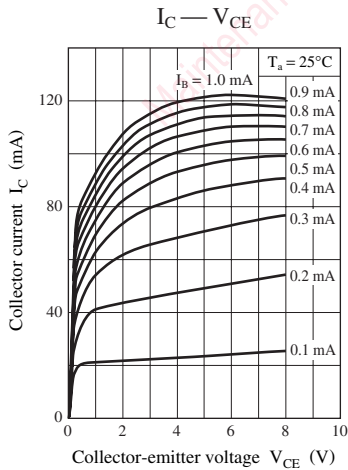
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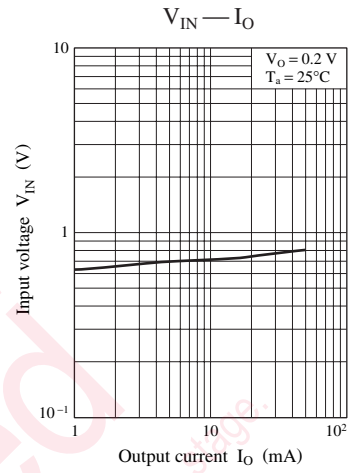
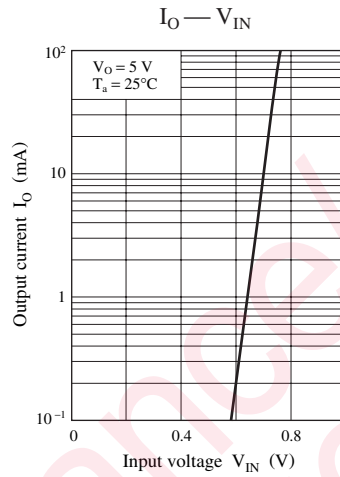
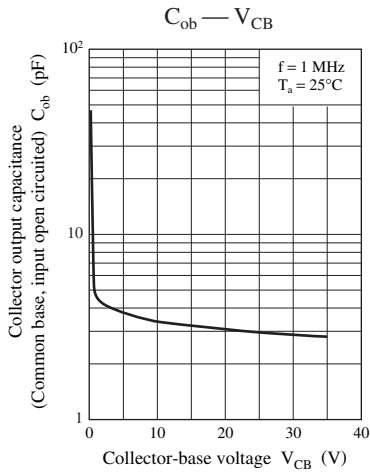


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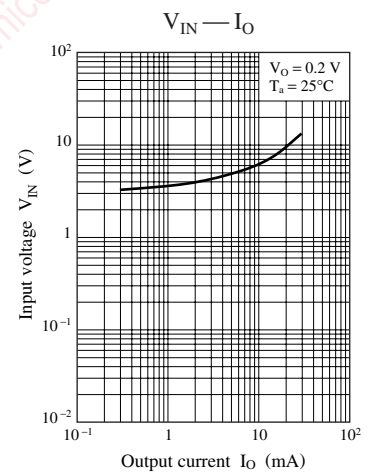
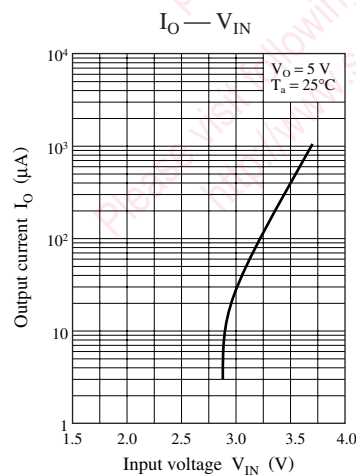
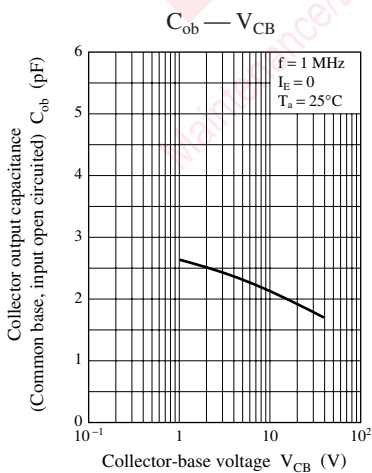
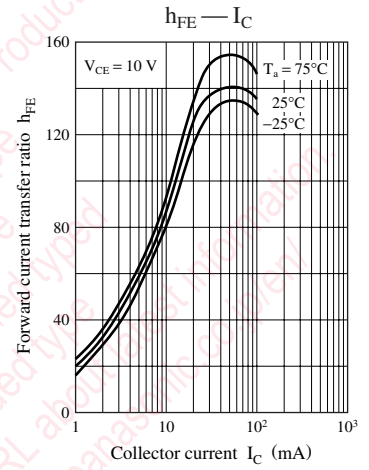
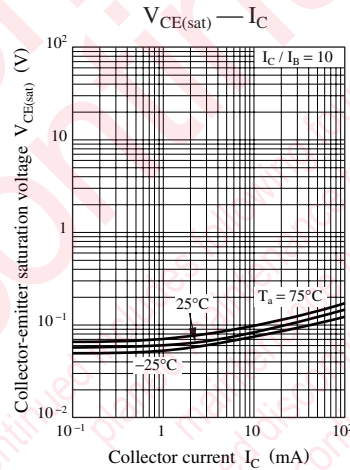
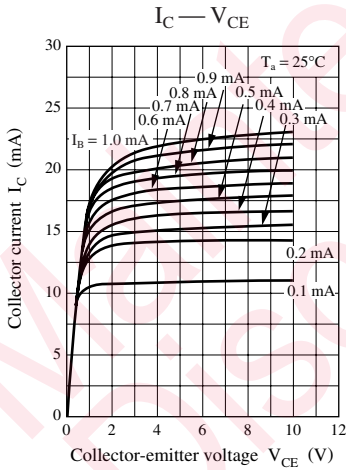


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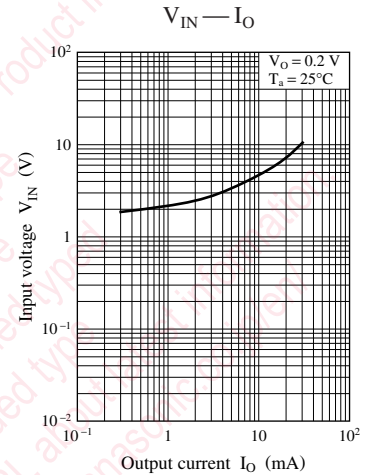
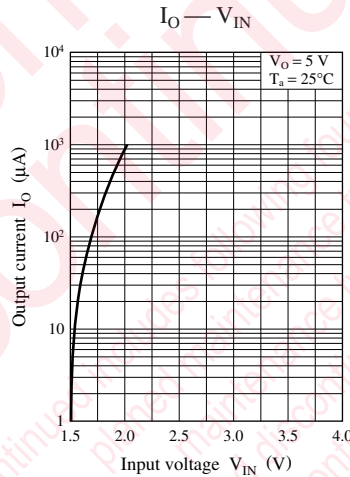
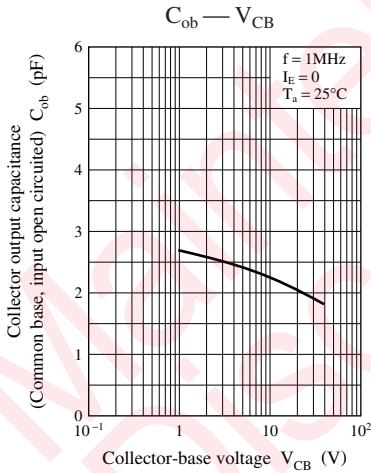
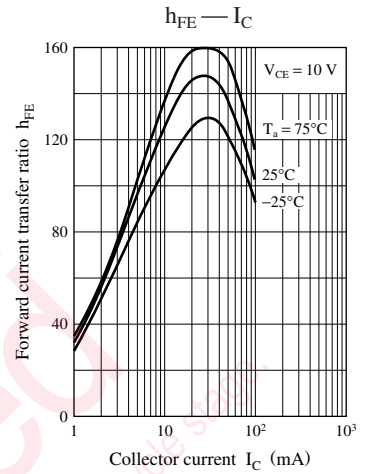
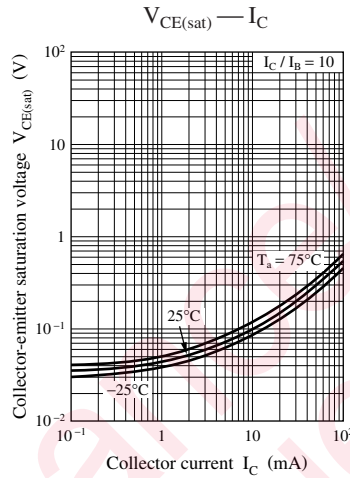
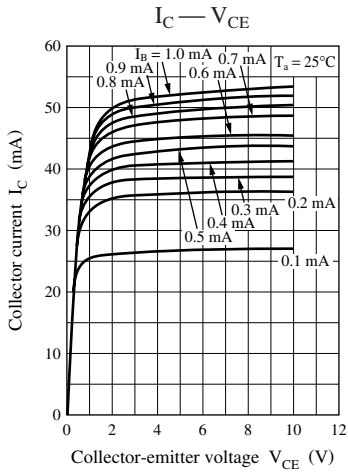




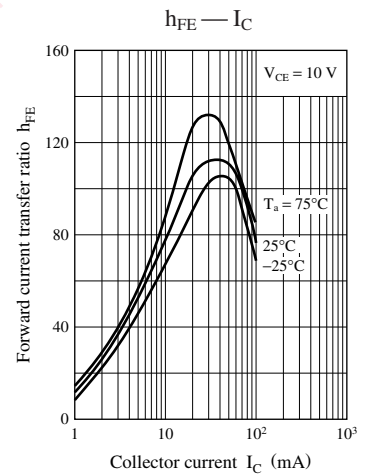
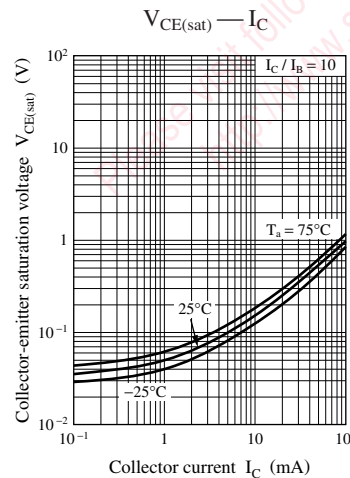
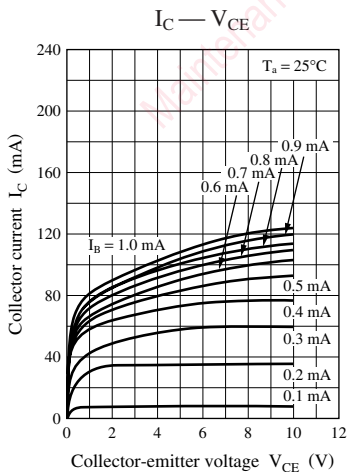
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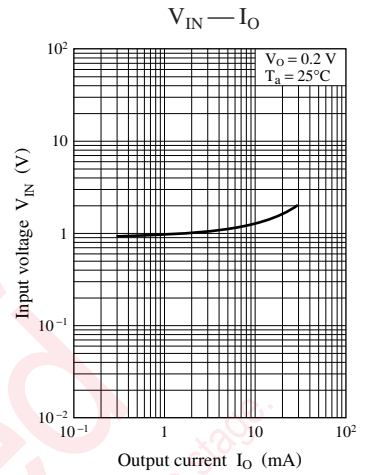
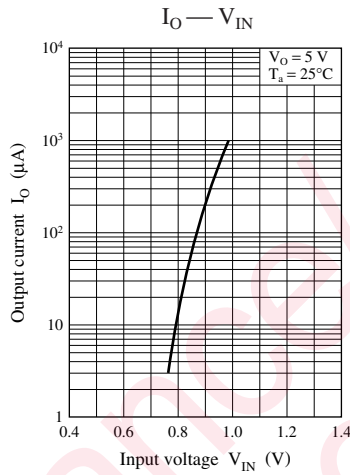
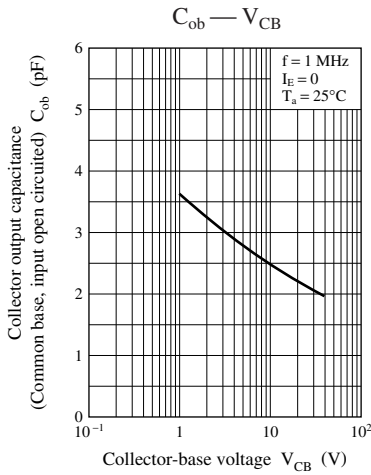


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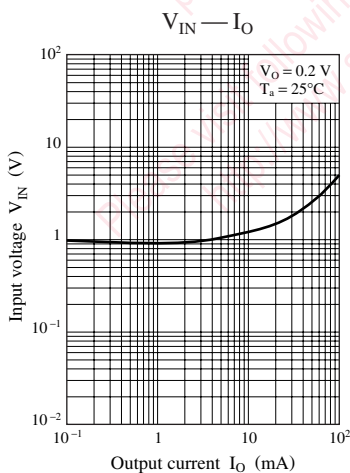
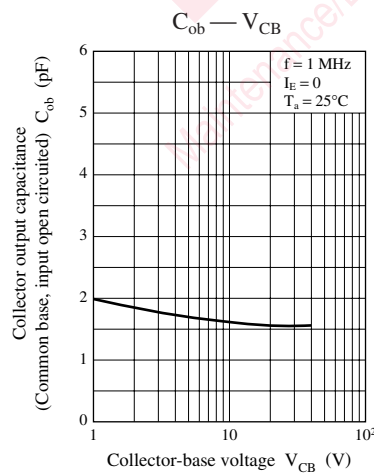
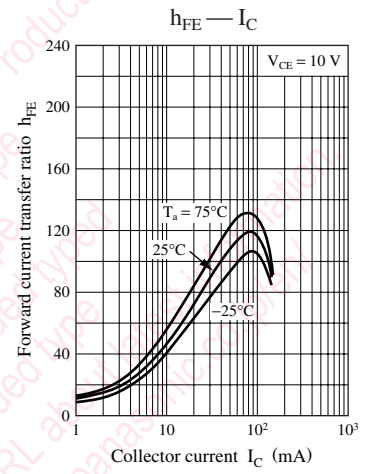
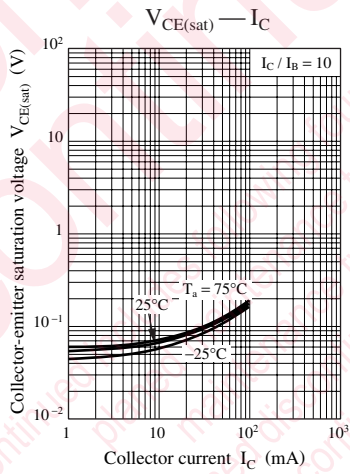
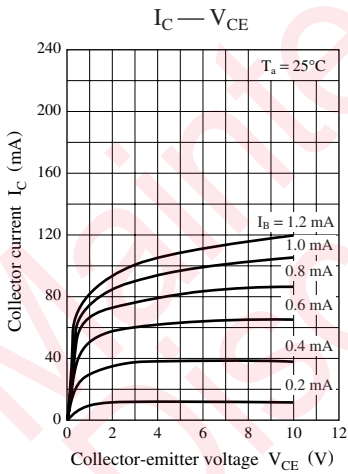


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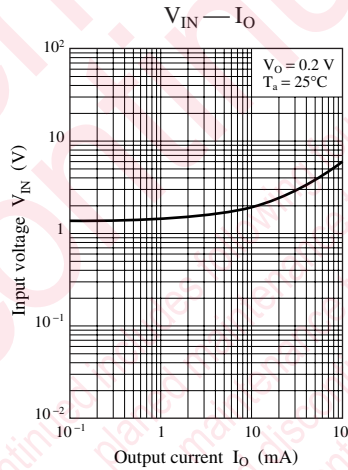
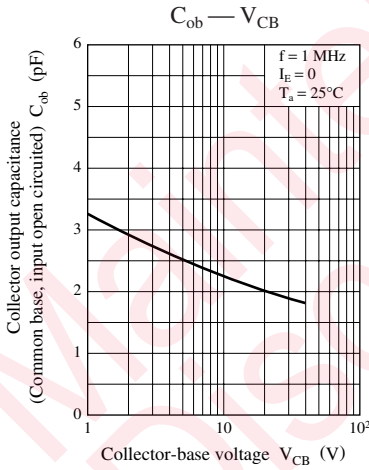
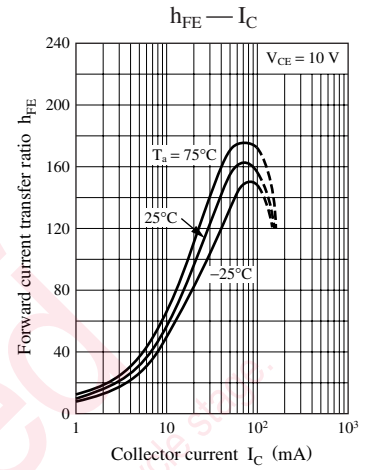
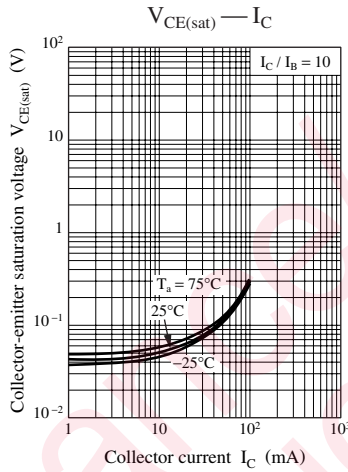
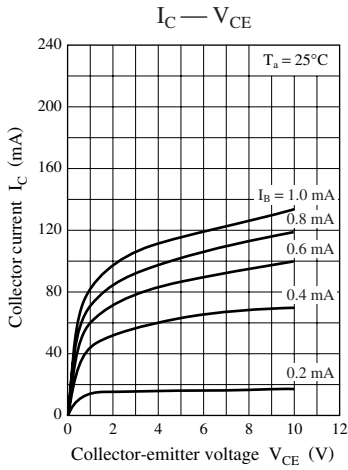




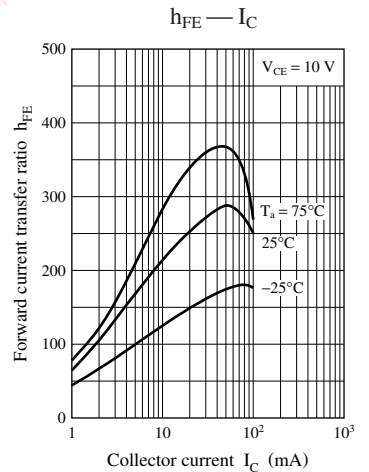
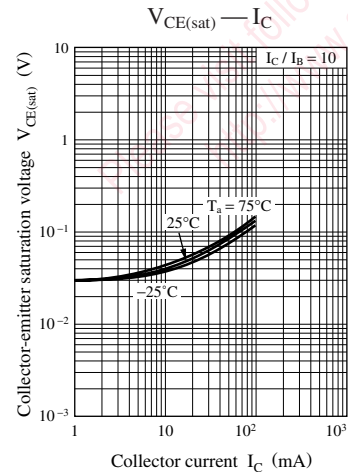
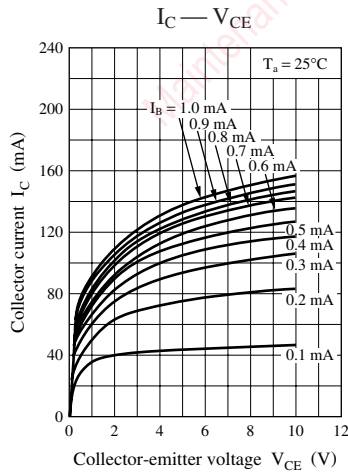
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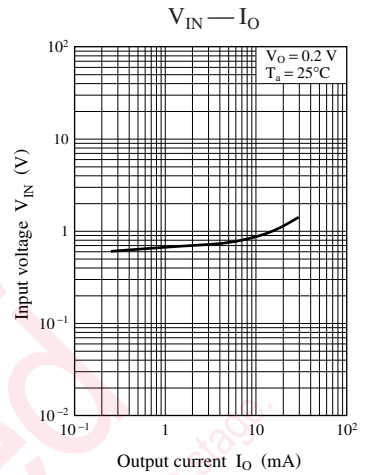
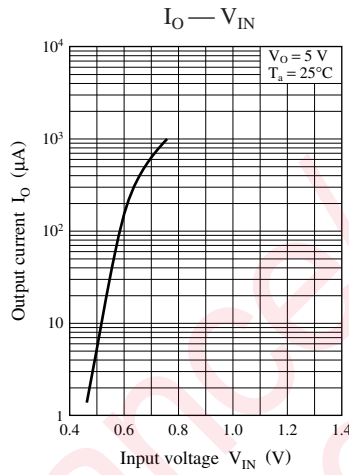
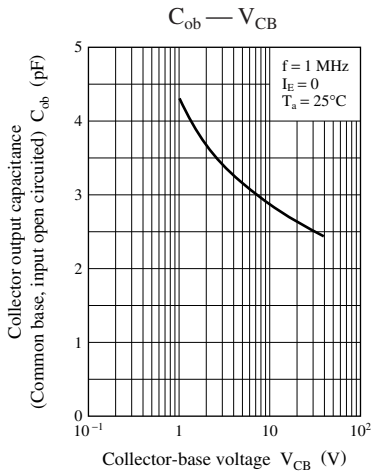


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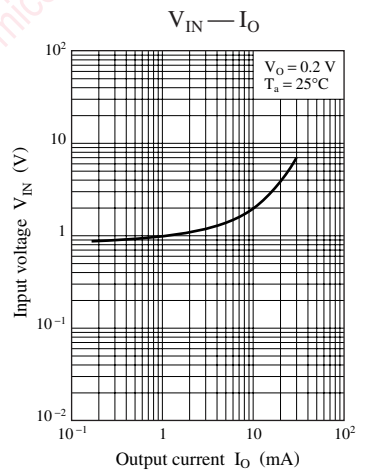
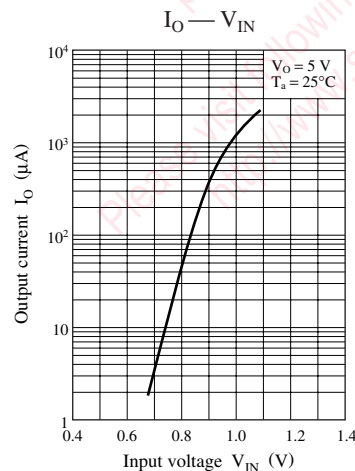
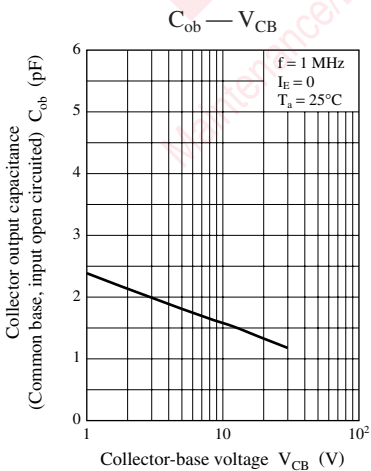
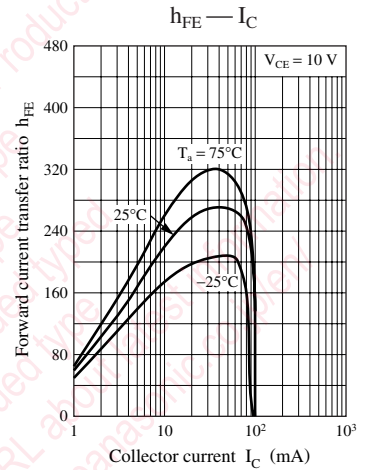
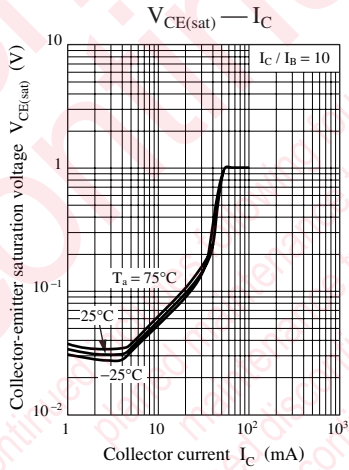
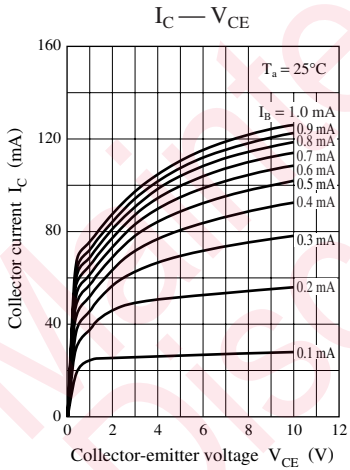


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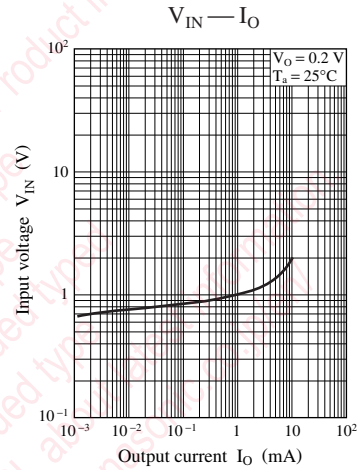
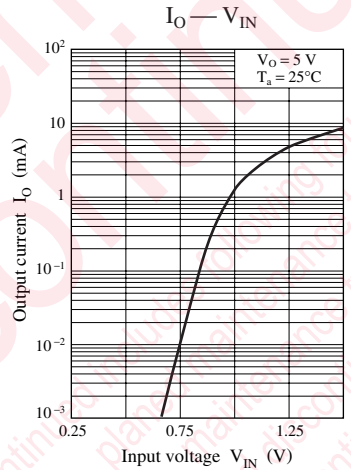
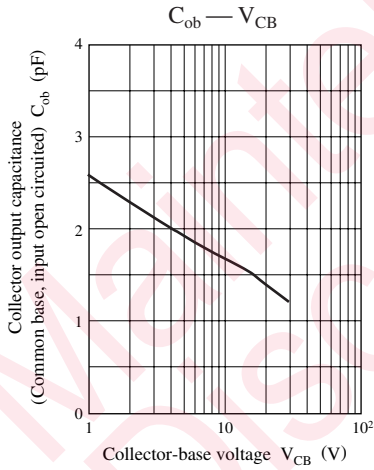
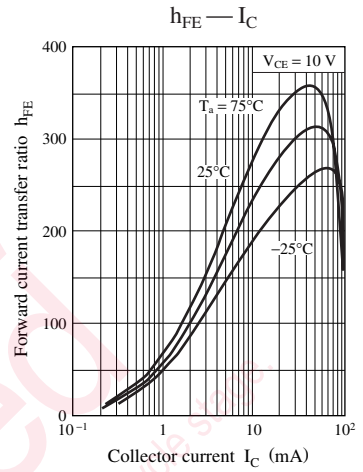
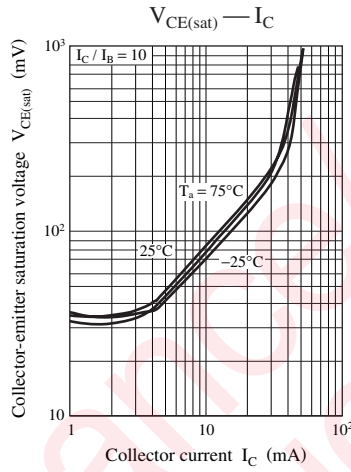
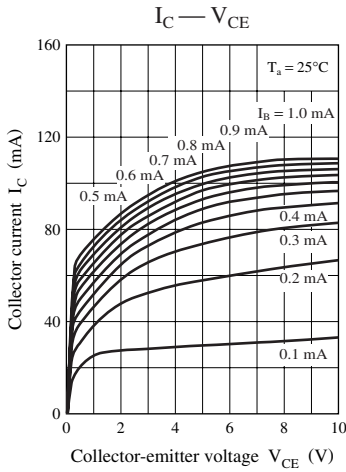




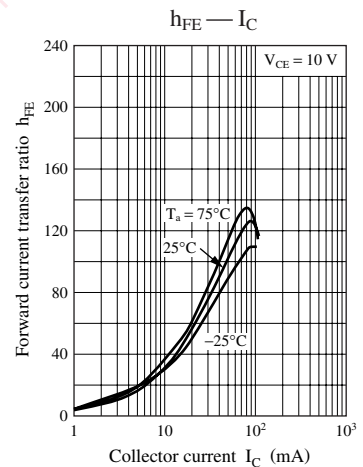
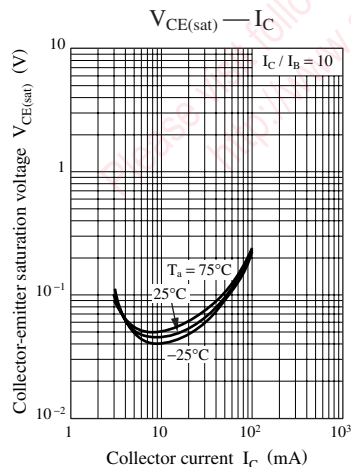
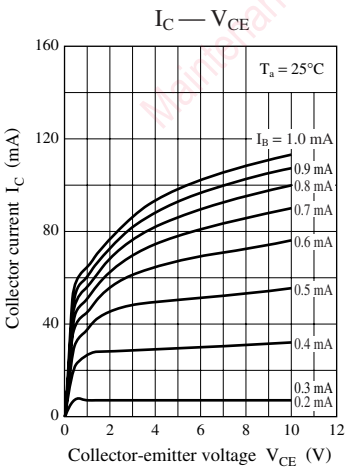
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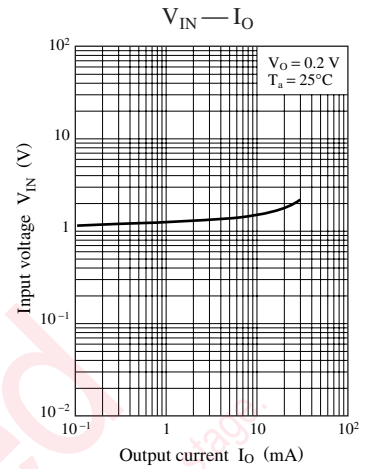
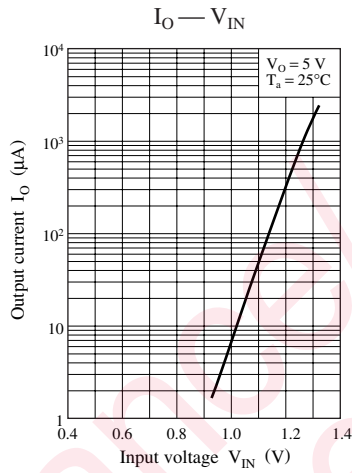
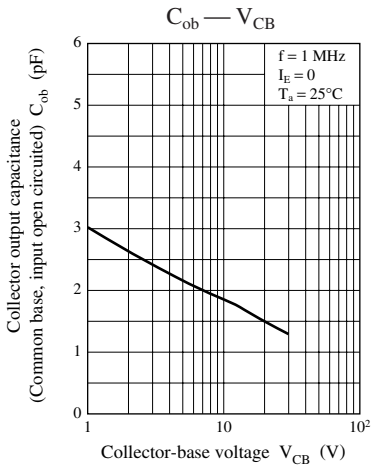


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Characteristics charts of UNR921VG

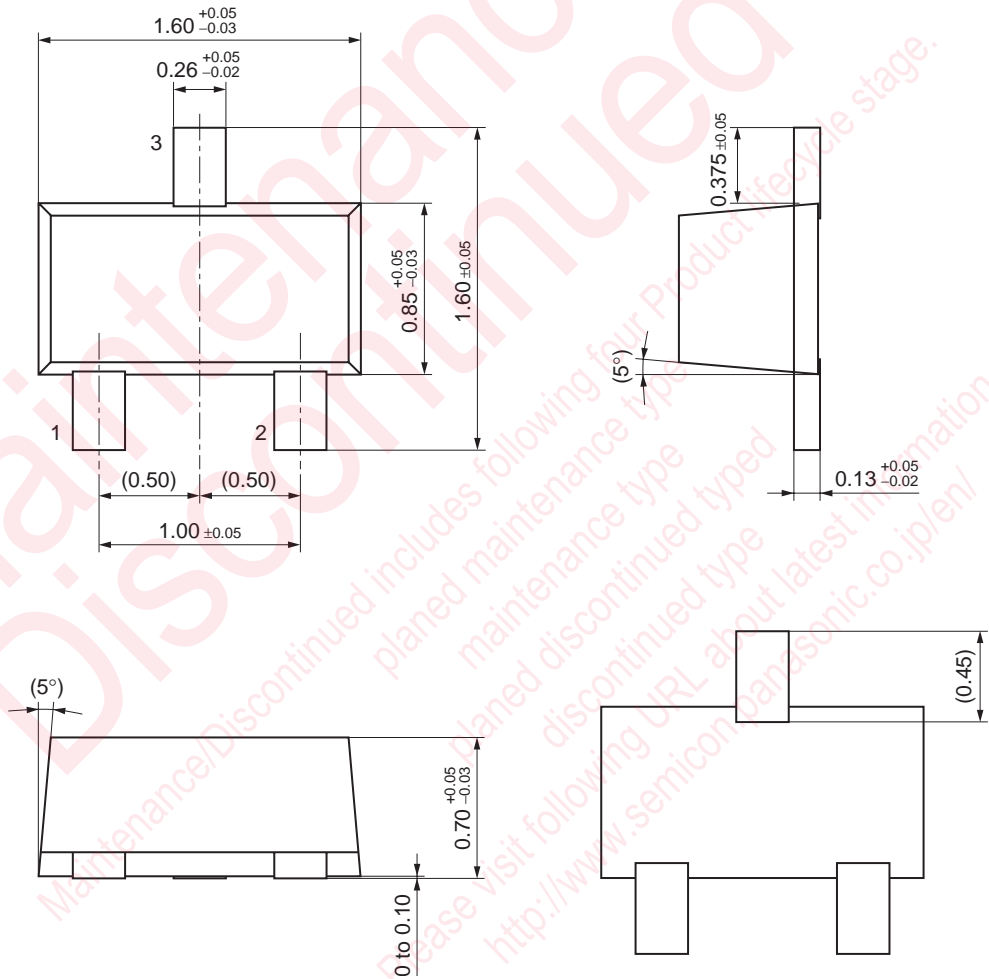




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