

ST 2SC1923

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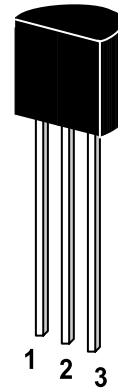
NPN Silicon Epitaxial Planar Transistor

for high frequency amplifier applications

FM, RF, MIX, IF amplifier applications.

The transistor is subdivided into three groups, R, O and Y, according to its DC current gain.

On special request, these transistors can be manufactured in different pin configurations.



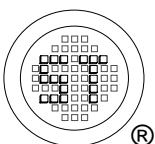
1. Emitter 2. Collector 3. Base

TO-92 Plastic Package

Weight approx. 0.19g

Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	40	V
Collector Emitter Voltage	V_{CEO}	20	V
Emitter Base Voltage	V_{EBO}	4	V
Collector Current	I_{C}	20	mA
Base Current	I_{B}	4	mA
Power Dissipation	P_{tot}	100	mW
Junction Temperature	T_{j}	125	$^\circ\text{C}$
Storage Temperature Range	T_{s}	-55 to +125	$^\circ\text{C}$



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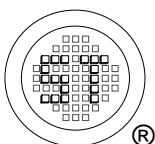
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Characteristics at $T_{amb}=25\text{ }^{\circ}\text{C}$

	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $V_{CE}=6\text{V}$, $I_C=1\text{mA}$					
Current Gain Group R	h_{FE}	40	-	80	-
O	h_{FE}	70	-	140	-
Y	h_{FE}	100	-	200	-
Collector Cutoff Current at $V_{CB}=18\text{V}$	I_{CBO}	-	-	0.5	μA
Emitter Cutoff Current at $V_{EB}=4\text{V}$	I_{EBO}	-	-	0.5	μA
Reverse Transfer Capacitance at $V_{CE}=6\text{V}$, $f=1\text{MHz}$	C_{re}	-	0.70	-	pF
Gain Bandwidth Product at $V_{CE}=6\text{V}$, $I_C=1\text{mA}$	f_T	-	550	-	MHz
Collector-Base Time Constant at $V_{CE}=6\text{V}$, $I_E=-1\text{mA}$, $f=30\text{MHz}$	$C_r, r_{bb'}$	-	-	30	ps
Noise Figure at $V_{CE}=6\text{V}$, $I_E=-1\text{mA}$, $f=100\text{MHz}$	NF	-	2.5	4	dB
Power Gain at $V_{CE}=6\text{V}$, $I_E=-1\text{mA}$, $f=100\text{MHz}$	G_{pe}	15	18	-	dB



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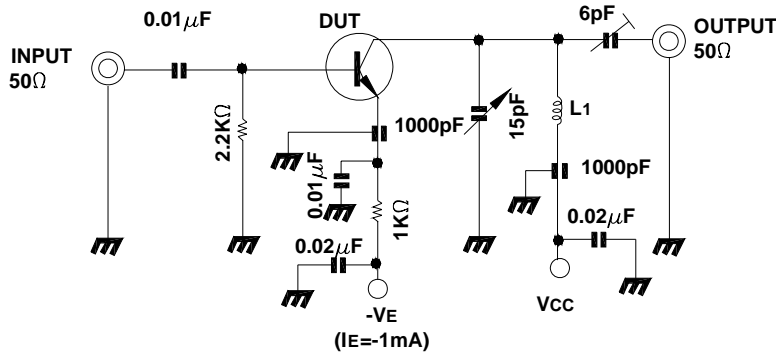


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L1:0.8mmφ SILVER PLATED COPPER WIRE, 4T,10ID,8 LENGTH

Fig. 1 NF, Gpe TEST CIRCUIT

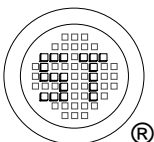
PARAMETER(Typ.)

(1) COMMON EMITTER ($V_{CE}=6V, I_E=-1mA, f=100MHz$)

CHARACTERISTIC	SYMBOL	TYP.	UNIT
Input Conductance	g_{ie}	2.9	mS
Input Capacitance	C_{ie}	10.2	pF
Reverse Transfer Admittance	$ y_{re} $	0.33	μS
Phase Angle of Reverse Transfer Admittance	$-Y_{re}$	90	$^{\circ}$
Forward Transfer Admittance	$ y_{fe} $	40	mS
Phase Angle of Forward Transfer Admittance	$-Y_{fe}$	20	$^{\circ}$
Output Conductance	g_{oe}	45	μS
Output Capacitance	C_{oe}	1.1	pF

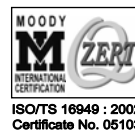
(2) COMMON BASE ($V_{CE}=6V, I_E=-1mA, f=100MHz$)

CHARACTERISTIC	SYMBOL	TYP.	UNIT
Input Conductance	g_{ib}	34	mS
Input Capacitance	$-C_{ib}$	10	pF
Reverse Transfer Admittance	$ y_{rb} $	0.27	μS
Phase Angle of Reverse Transfer Admittance	$-Y_{rb}$	105	$^{\circ}$
Forward Transfer Admittance	$ y_{fb} $	34	mS
Phase Angle of Forward Transfer Admittance	Y_{fb}	165	$^{\circ}$
Output Conductance	g_{ob}	45	μS
Output Capacitance	C_{ob}	1.1	pF



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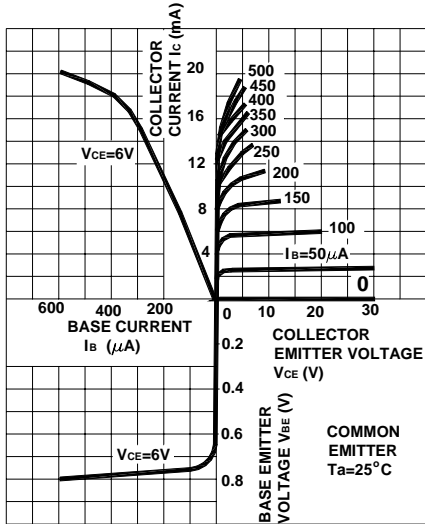
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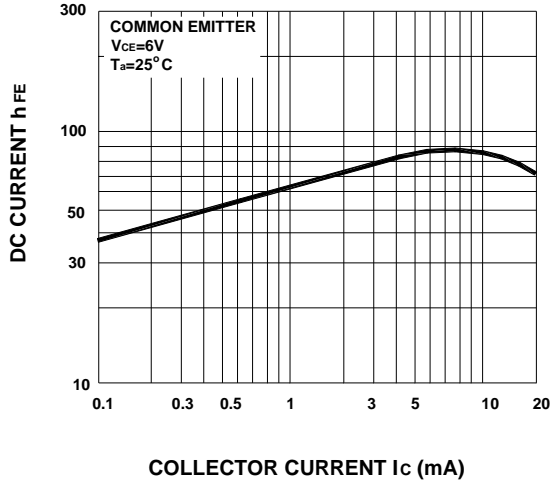
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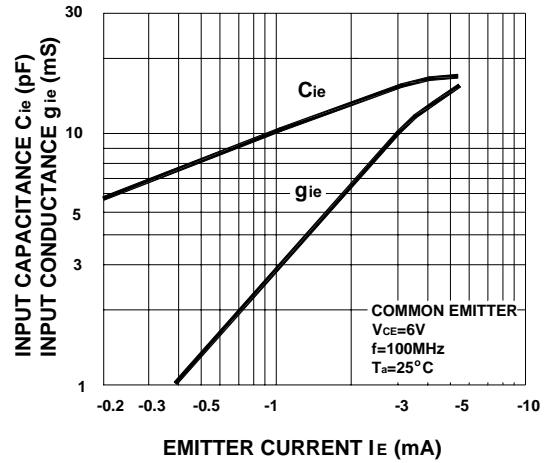
STATIC CHARACTERISTICS



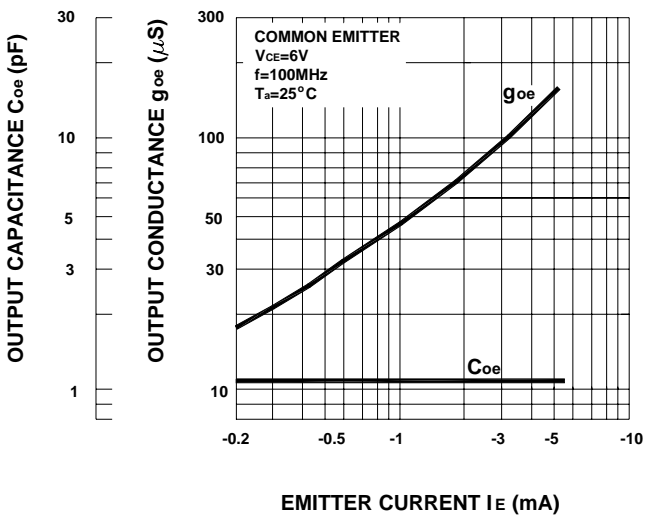
hFE-Ic



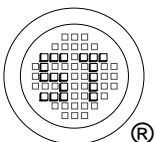
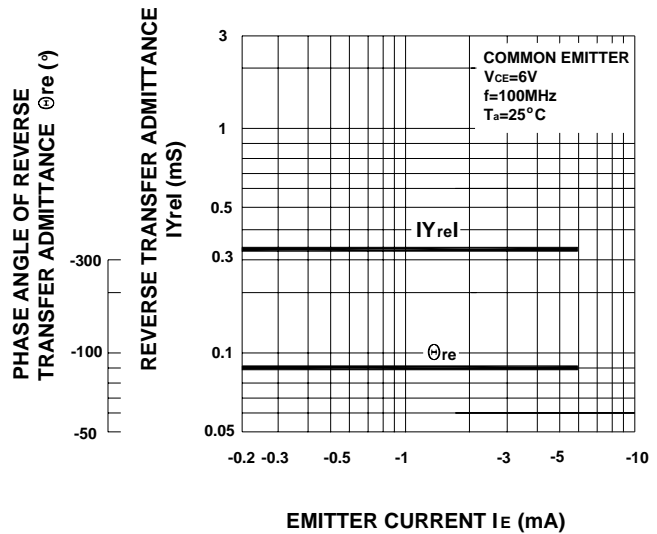
Cie,gie-IE



Coe,goe-IE



IYrel,Θre-IE



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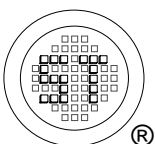
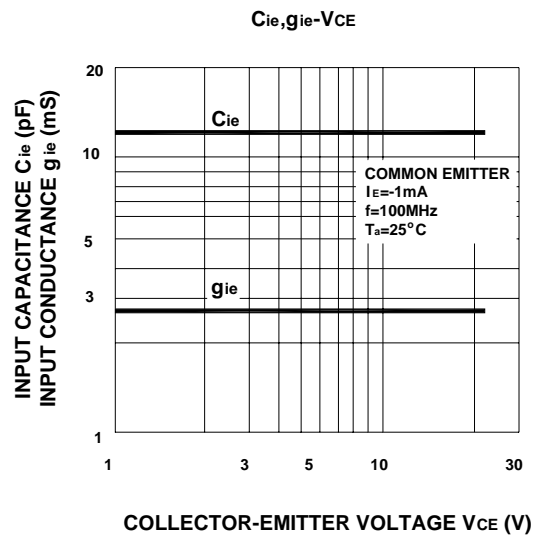
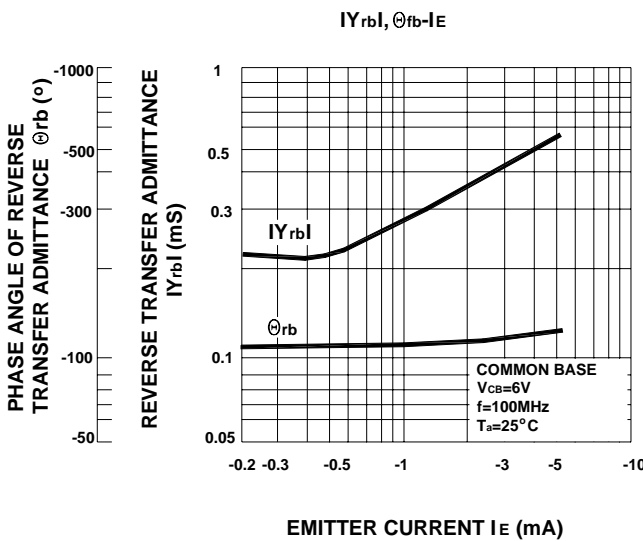
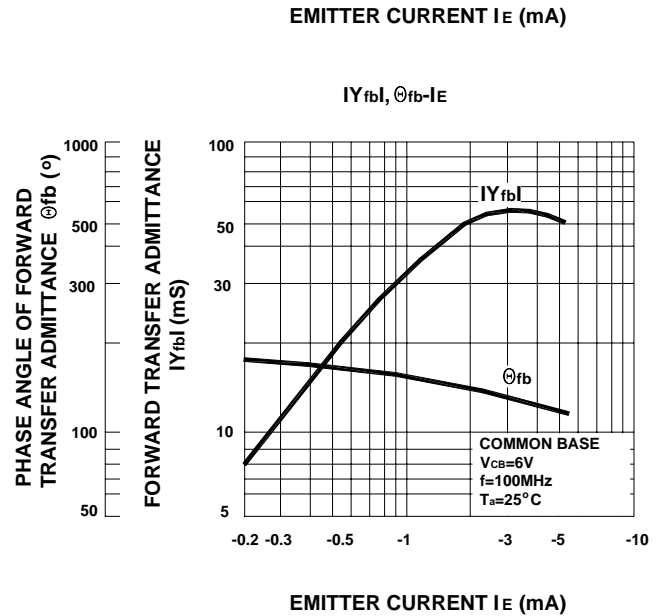
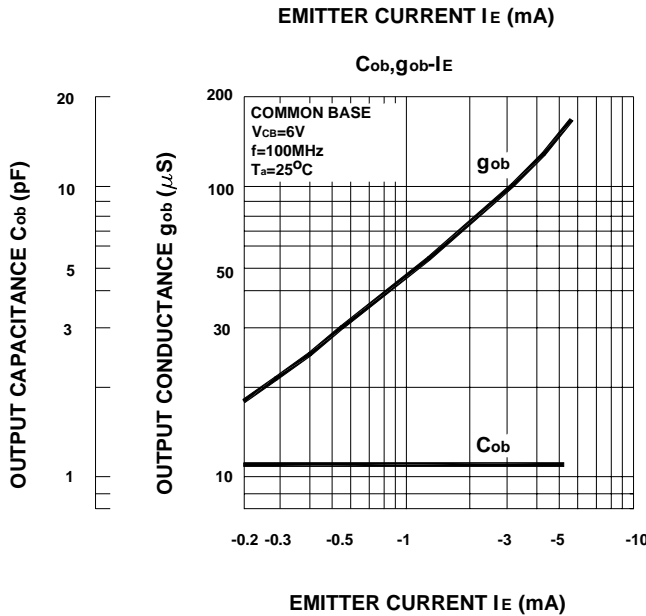
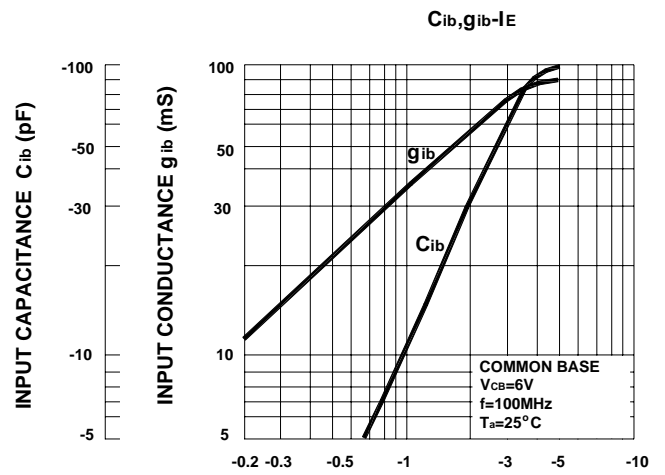
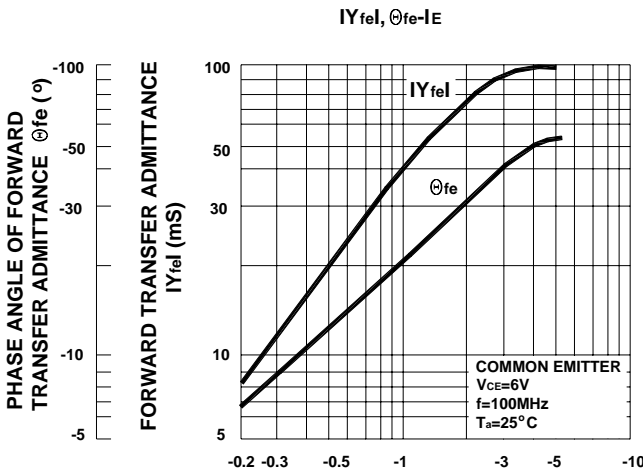
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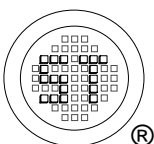
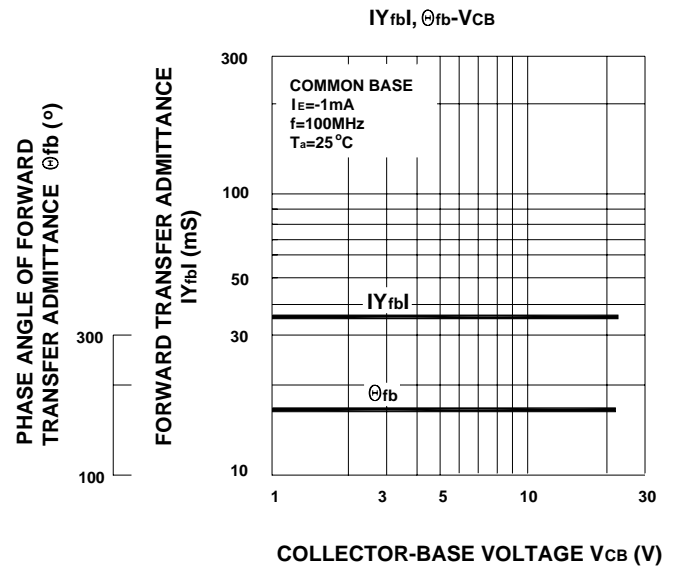
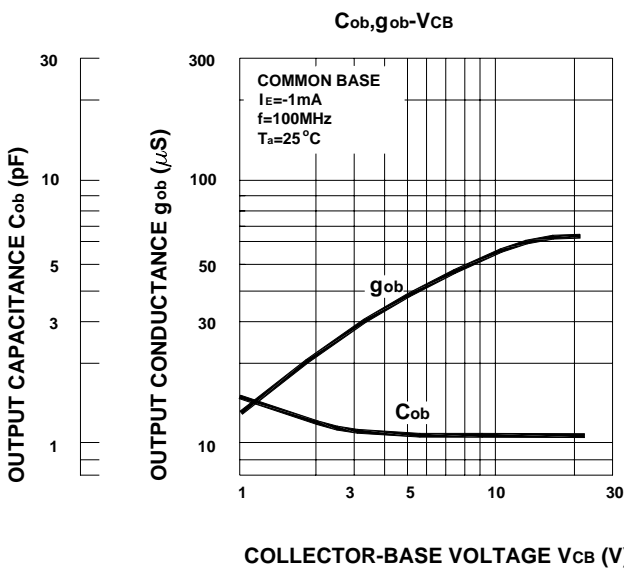
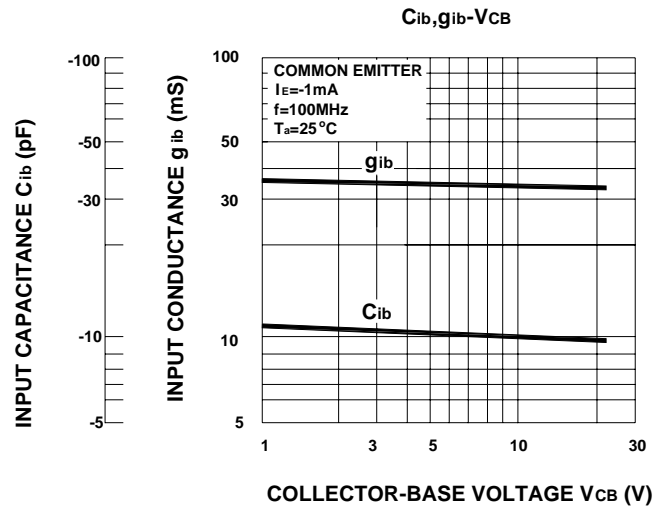
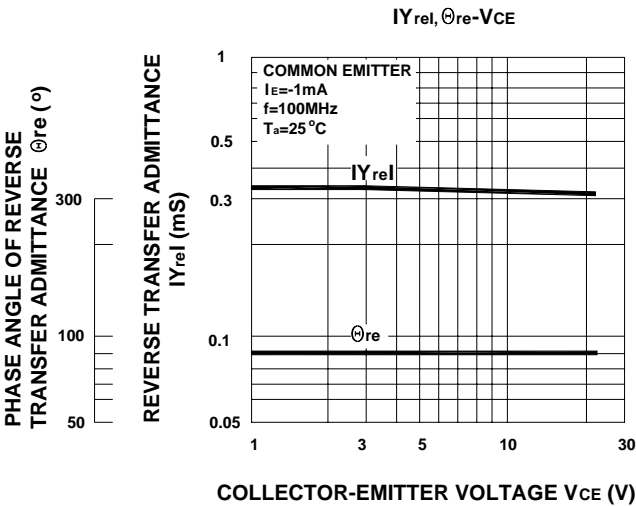
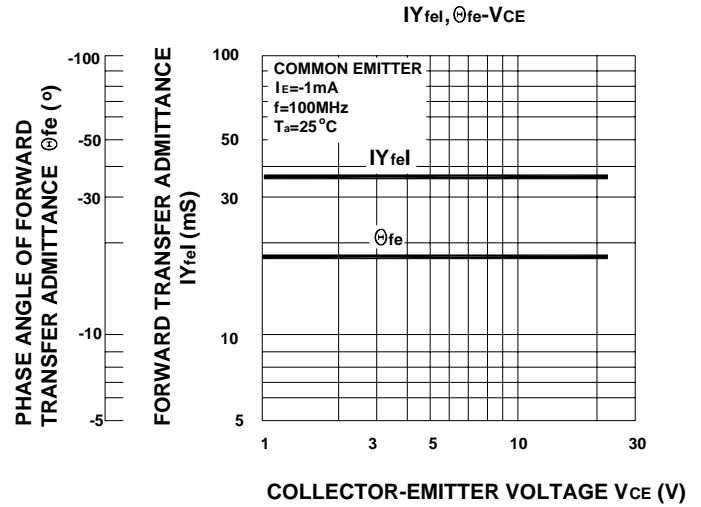
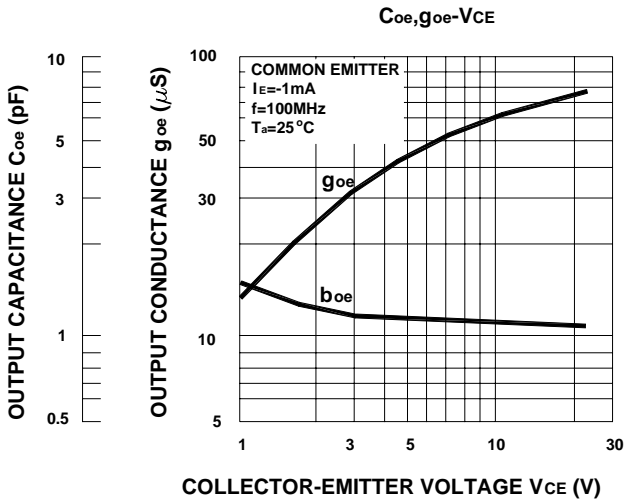
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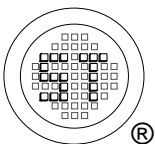
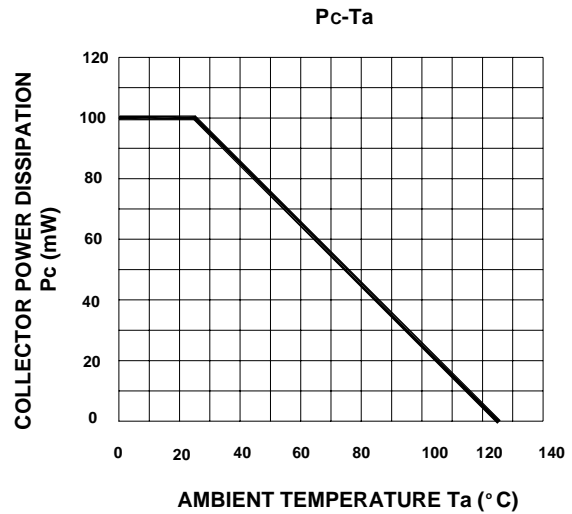
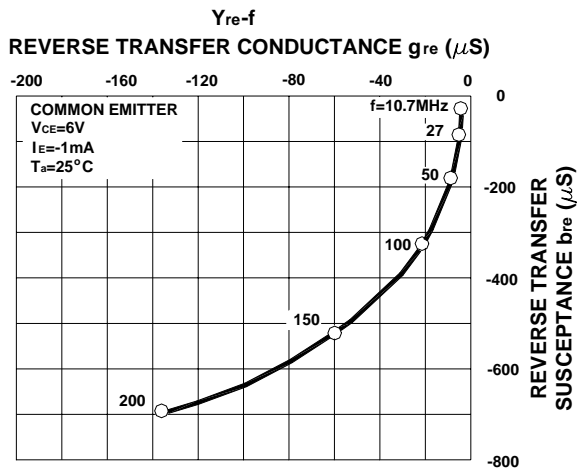
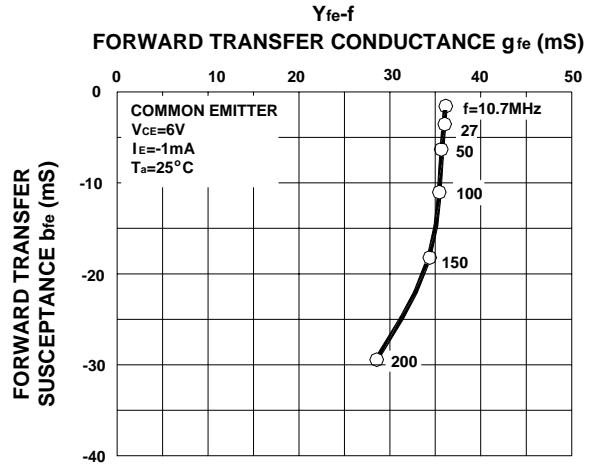
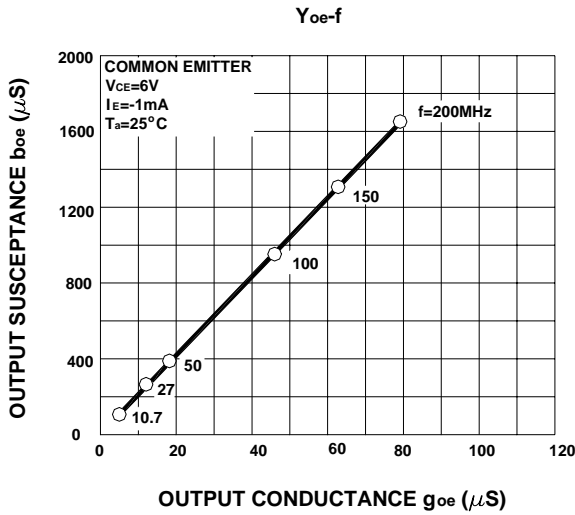
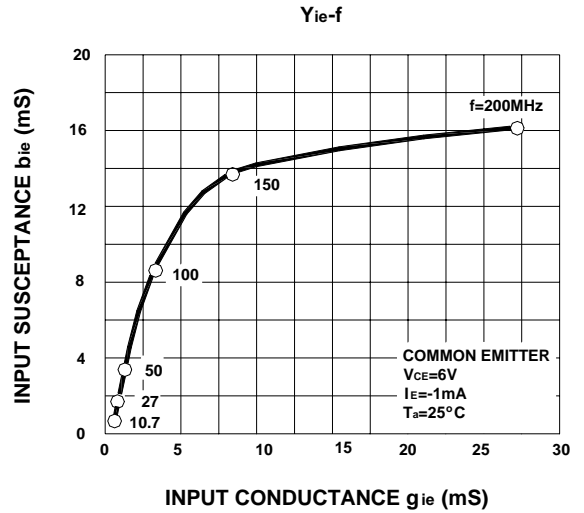
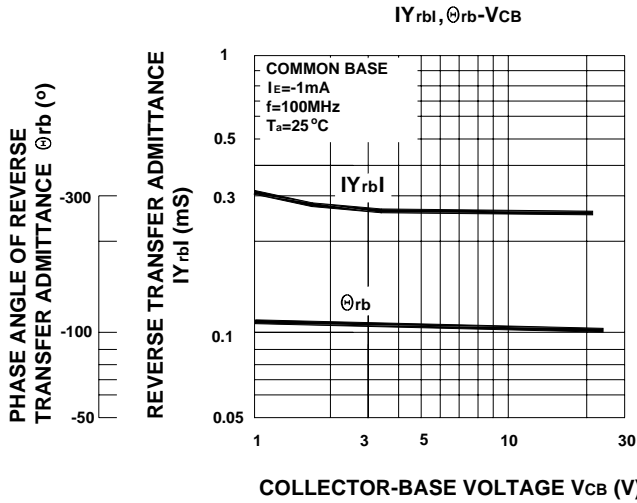
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