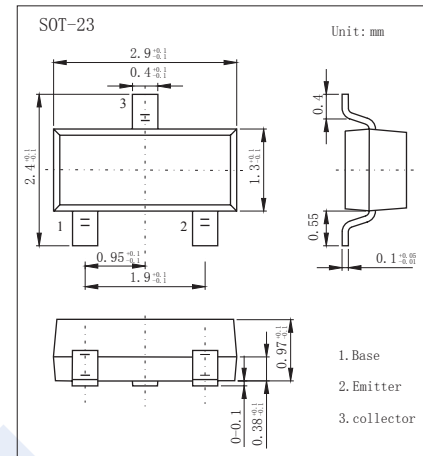


NPN Transistors

2SC3011

■ Features

- Collector Current Capability $I_C=30\text{mA}$
- Collector Emitter Voltage $V_{CE0}=7\text{V}$



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

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CB0}	20	V
Collector - Emitter Voltage	V_{CE0}	7	
Emitter - Base Voltage	V_{EB0}	3	
Collector Current - Continuous	I_C	30	mA
Emitter Current	I_E	10	
Collector Power Dissipation	P_C	150	mW
Junction Temperature	T_J	125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to 125	

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CB0}	$I_C = 100 \mu\text{A}, I_E = 0$	20			V
Collector- emitter breakdown voltage	V_{CE0}	$I_C = 1\text{mA}, I_B = 0$	7			
Emitter - base breakdown voltage	V_{EB0}	$I_E = 100 \mu\text{A}, I_C = 0$	3			
Collector-base cut-off current	I_{CBO}	$V_{CB} = 20\text{V}, I_E = 0$			1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 2\text{V}, I_C = 0$			1	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 10\text{mA}, I_B = 1\text{mA}$			0.4	V
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_C = 10\text{mA}, I_B = 1\text{mA}$			1.2	
DC current gain	h_{FE}	$V_{CE} = 5\text{V}, I_C = 10\text{mA}$	30			
Noise figure	NF	$V_{CE} = 5\text{V}, I_C = 5\text{mA}, f = 1\text{GHz}$		2.3		dB
Insertion gain	$ S_{21e} ^2$	$V_{CE} = 5\text{V}, I_C = 10\text{mA}, f = 1\text{GHz}$		12		
Collector output capacitance	C_{ob}	$V_{CB} = 5\text{V}, I_E = 0, f = 1\text{MHz}$			0.9	pF
Common emitter reverse transfer capacitance	C_{re}				0.5	
Input capacitance	C_{ib}	$V_{EB} = 0\text{V}, I_C = 0, f = 1\text{MHz}$		0.8		
Transition frequency	f_T	$V_{CE} = 5\text{V}, I_C = 10\text{mA}$		6.5		GHz

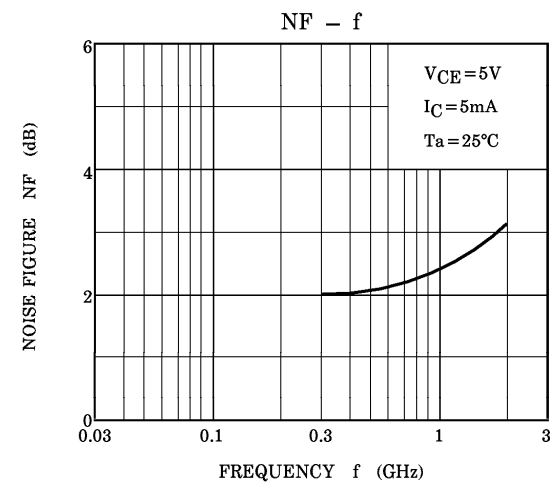
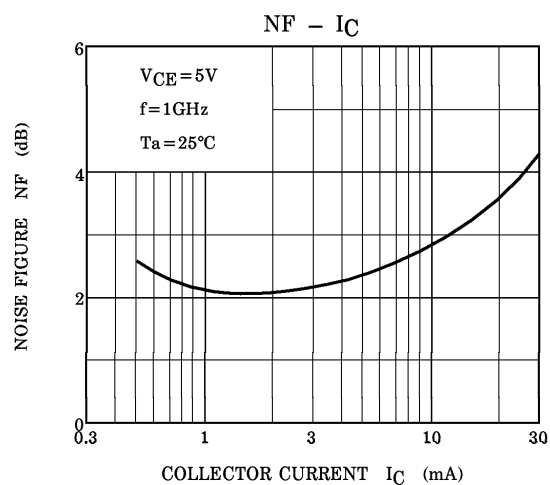
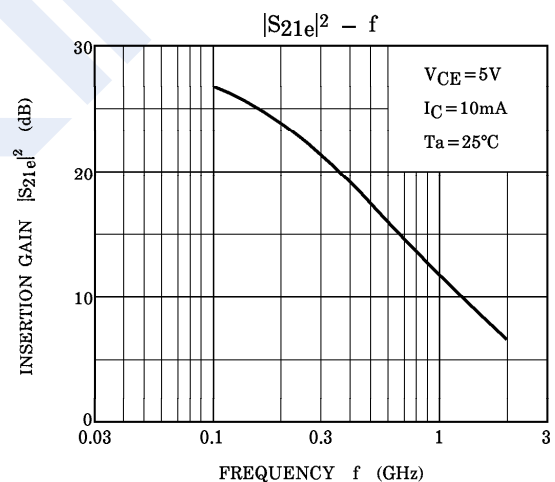
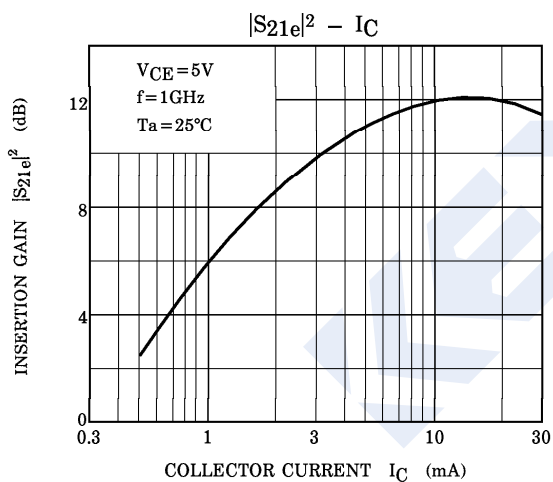
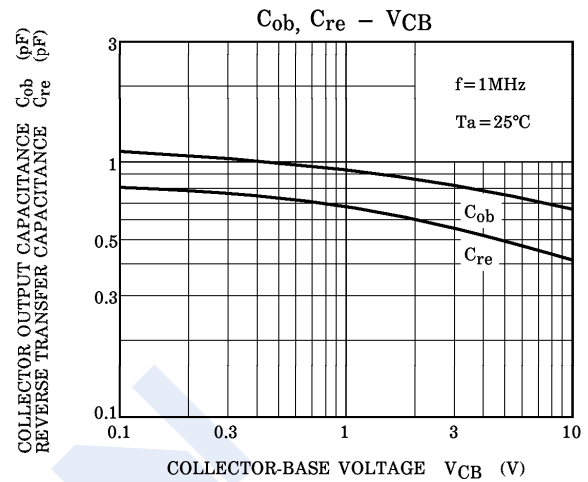
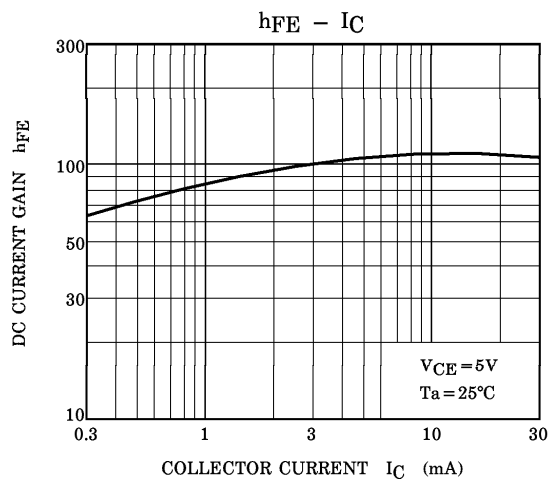
■ Marking

Marking	MA
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NPN Transistors

2SC3011

■ Typical Characteristics

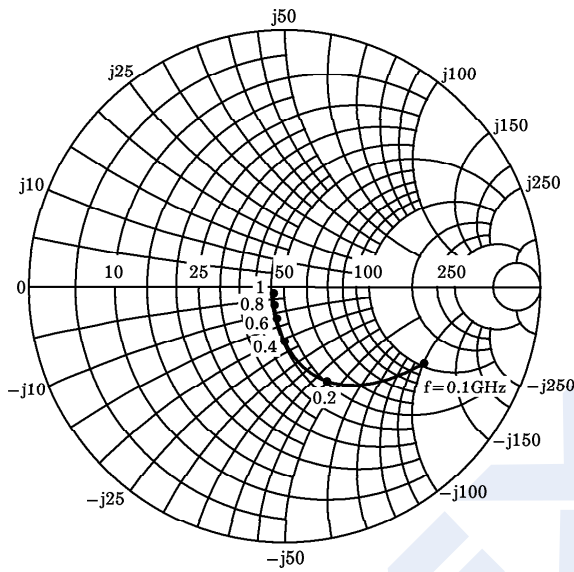


NPN Transistors

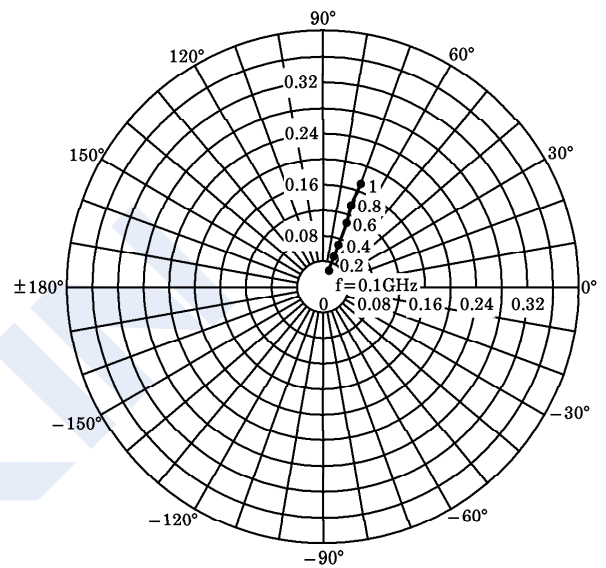
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■ Typical Characteristics

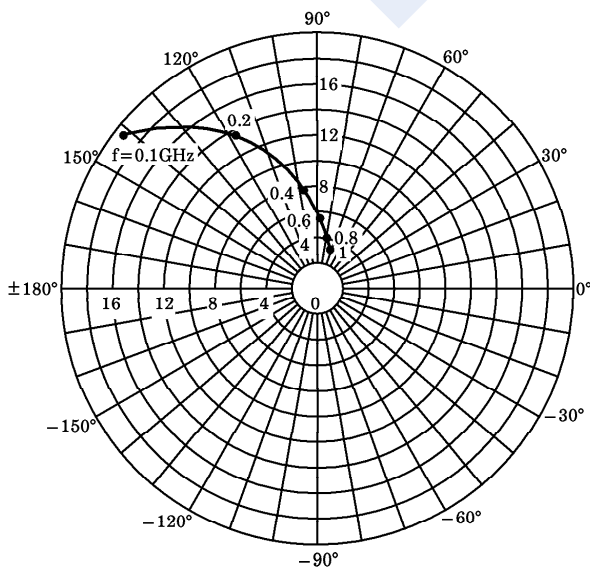
S_{11e}
 V_{CE} = 5V
 I_C = 10mA
 T_a = 25°C
 (UNIT : Ω)



S_{12e}
 V_{CE} = 5V
 I_C = 10mA
 T_a = 25°C



S_{21e}
 V_{CE} = 5V
 I_C = 10mA
 T_a = 25°C



S_{22e}
 V_{CE} = 5V
 I_C = 10mA
 T_a = 25°C
 (UNIT : Ω)

