

NPN Transistors

2SC3098

■ Features

- Collector Current Capability $I_C=50\text{mA}$
- Collector Emitter Voltage $V_{CE0}=20\text{V}$

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

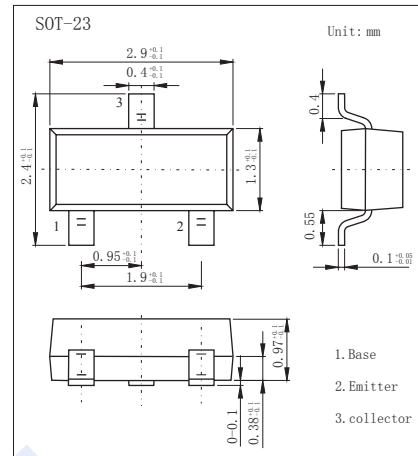
Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	30	V
Collector - Emitter Voltage	V_{CEO}	20	
Emitter - Base Voltage	V_{EBO}	3	
Collector Current - Continuous	I_C	50	mA
Base Current	I_B	25	
Collector Power Dissipation	P_C	150	mW
Junction Temperature	T_J	125	$^\circ\text{C}$
Storage Temperature 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_{CBO}	$I_C = 100 \mu\text{A}, I_E = 0$	30			V
Collector- emitter breakdown voltage	V_{CEO}	$I_C = 1\text{mA}, I_B = 0$	20			
Emitter - base breakdown voltage	V_{EBO}	$I_E = 100 \mu\text{A}, I_C = 0$	3			
Collector-base cut-off current	I_{CBO}	$V_{CB} = 30\text{V}, I_E = 0$			1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 3\text{V}, I_C = 0$			1	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 10\text{mA}, I_B = 1\text{mA}$			0.3	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}	$V_{CE} = 10\text{V}, I_C = 10\text{mA}$	30		300	
Insertion Gain	$ S_{21e} ^2$	$V_{CE} = 10\text{V}, I_E = -10\text{mA}, f = 500\text{MHz}$		14.5		dB
		$V_{CE} = 10\text{V}, I_E = -10\text{mA}, f = 1\text{GHz}$		9		
Noise figure	NF	$V_{CE} = 10\text{V}, I_E = -5\text{mA}, f = 500\text{MHz}$		2.5		
		$V_{CE} = 10\text{V}, I_E = -5\text{mA}, f = 1\text{GHz}$		3		
Collector output capacitance	C_{ob}	$V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$		1.15		pF
Reverse transfer capacitance	C_{re}			0.75		
Transition frequency	f_T	$V_{CE} = 10\text{V}, I_C = 10\text{mA}$		3.5		GHz

■ Marking

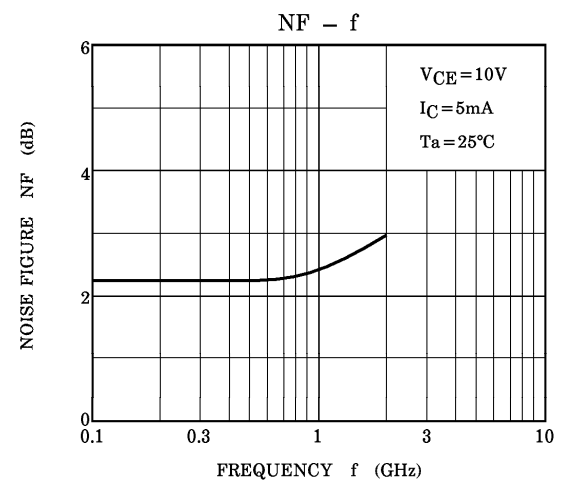
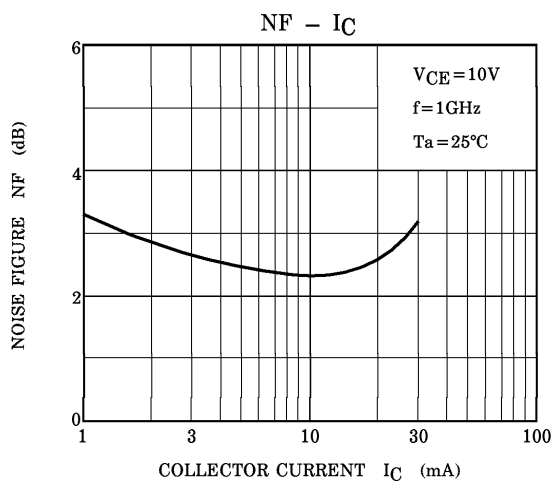
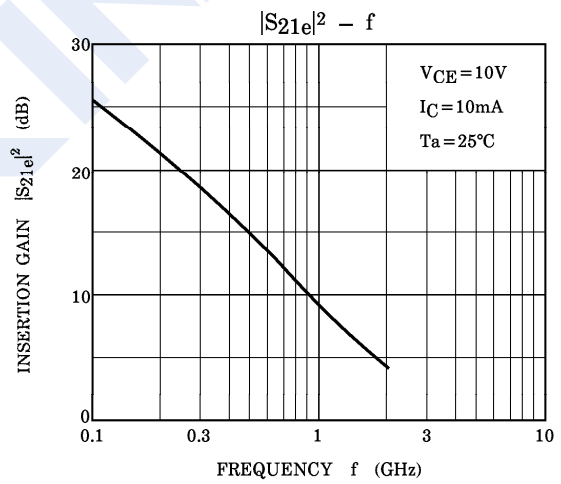
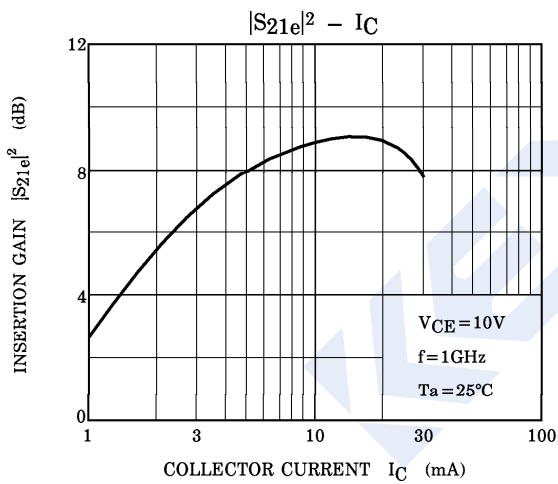
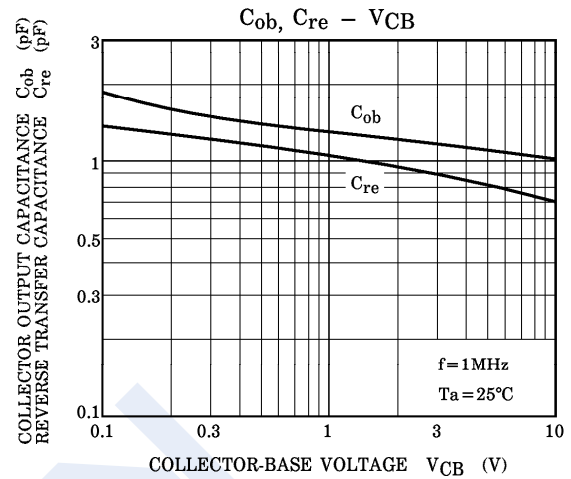
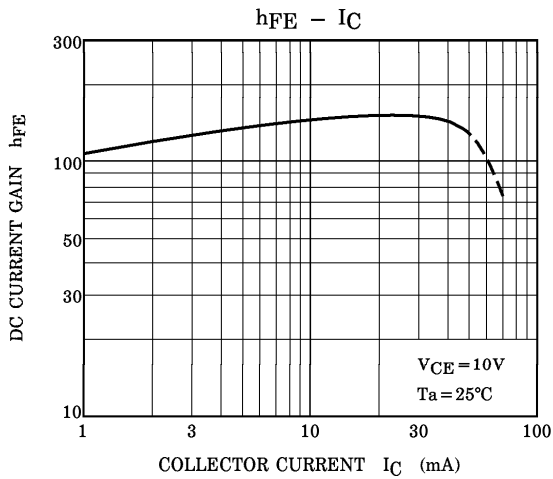
Marking	MB
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■ Typical Characteristics

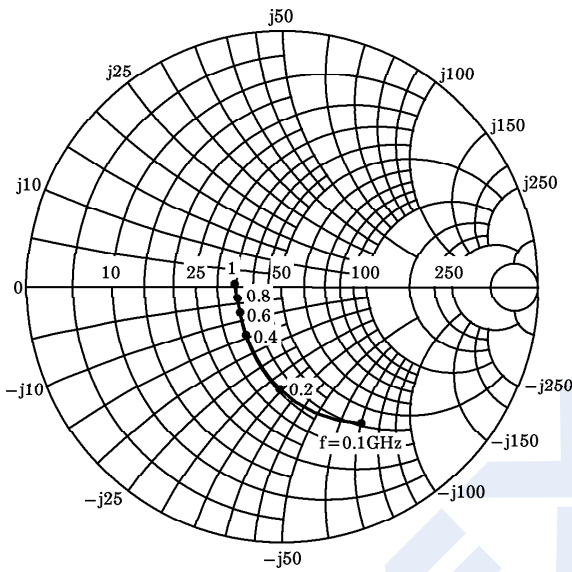


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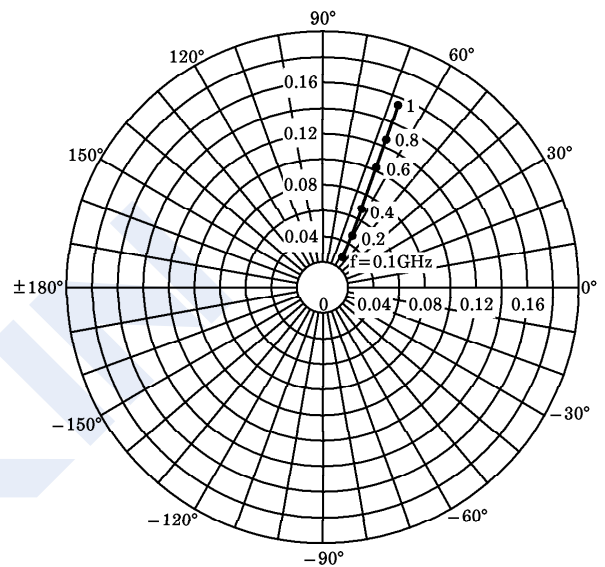
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■ Typical Characteristics

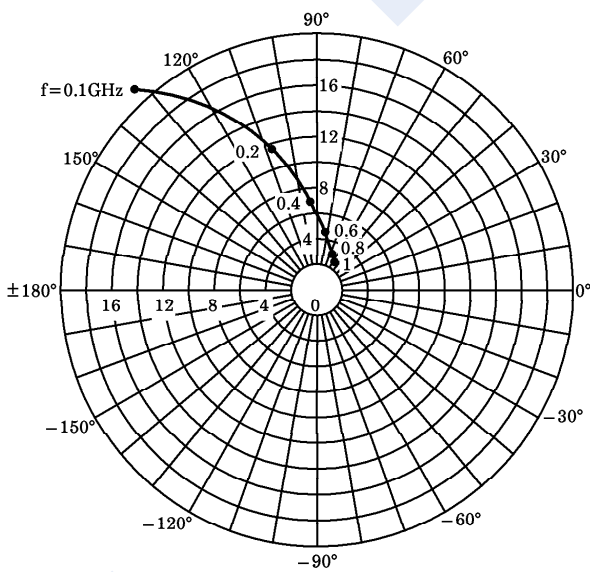
S_{11e}
 $V_{CE} = 10V$
 $I_C = 10mA$
 $T_a = 25^\circ C$
 (UNIT : Ω)



S_{12e}
 $V_{CE} = 10V$
 $I_C = 10mA$
 $T_a = 25^\circ C$



S_{21e}
 $V_{CE} = 10V$
 $I_C = 10mA$
 $T_a = 25^\circ C$



S_{22e}
 $V_{CE} = 10V$
 $I_C = 10mA$
 $T_a = 25^\circ C$
 (UNIT : Ω)

