



SANYO Semiconductors

DATA SHEET

2SA1391 / 2SC3382 — PNP / NPN Epitaxial Planar Silicon Transistors

Low Noise AF Amp Applications

Features

- Adoption of FBET process.
- AF amp.
- Low-noise use.

Specifications () : 2SA1391

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CBO}		(-)60	V
Collector-to-Emitter Voltage	V _{CEO}		(-)50	V
Emitter-to-Base Voltage	V _{EBO}		(-)6	V
Collector Current	I _C		(-)200	mA
Collector Current (Pulse)	I _{CP}		(-)400	mA
Collector Dissipation	P _C		400	mW
Junction Temperature	T _J		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I _{CBO}	V _{CB} =(-)40V, I _E =0A			(-)0.1	μA
Emitter Cutoff Current	I _{EBO}	V _{EB} =(-)5V, I _C =0A			(-)0.1	μA
DC Current Gain	h _{FE1}	V _{CE} =(-)6V, I _C =(-)1mA	100*		560*	
	h _{FE2}	V _{CE} =(-)6V, I _C =(-)0.1mA	70			

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* : The 2SA1391 / 2SC3382 are classified by 1mA h_{FE} as follows:

Rank	R	S	T	U
h _{FE}	100 to 200	140 to 280	200 to 400	280 to 560

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2SA1391 / 2SC3382

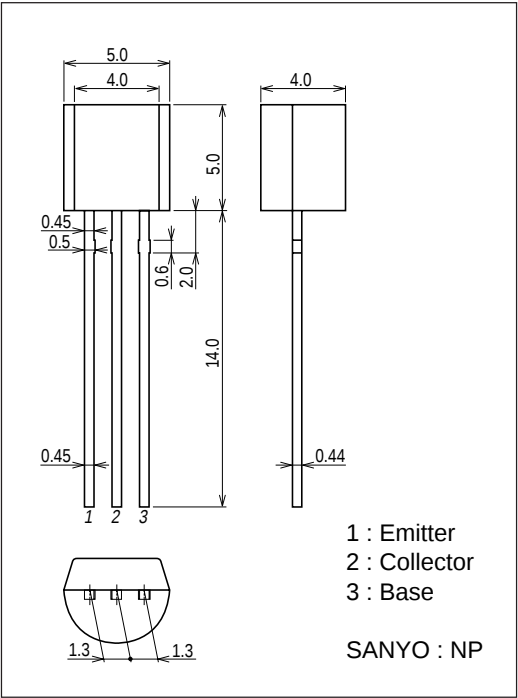
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gain-Bandwidth Product	f_T	$V_{CE}=(-)6V, I_C=(-)10mA$		(200)250		MHz
Output Capacitance	C_{ob}	$V_{CB}=(-)6V, f=1MHz$		(3.7)2.7		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)100mA, I_B=(-)10mA$			(-)0.3	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)100mA, I_B=(-)10mA$			(-)1.0	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu A, I_E=0A$	(-)60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	(-)50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)10\mu A, I_C=0A$	(-)6			V
Noise Level	$V_{NO(ave)}$	$V_{CC}=(-)30V, I_C=(-)1mA, R_g=56k\Omega, V_G=77dB/1kHz$			(35)40	mV
Noise Peak Level	$V_{NO(peak)}$	$V_{CC}=(-)30V, I_C=(-)1mA, R_g=56k\Omega, V_G=77dB/1kHz$			(200)280	mV

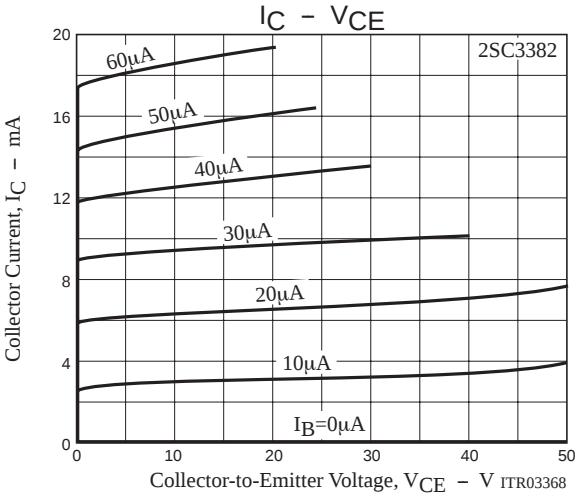
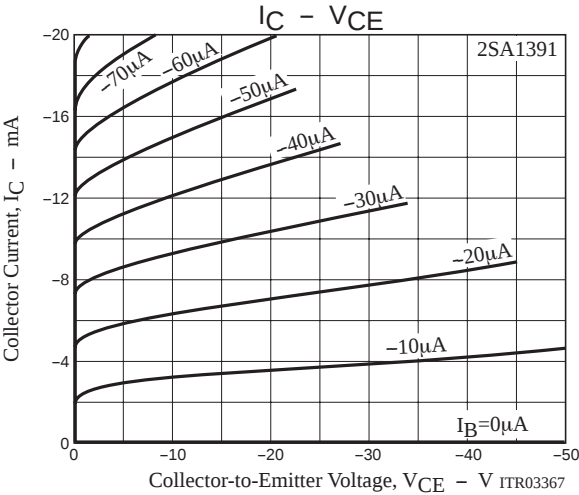
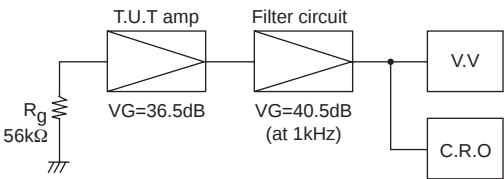
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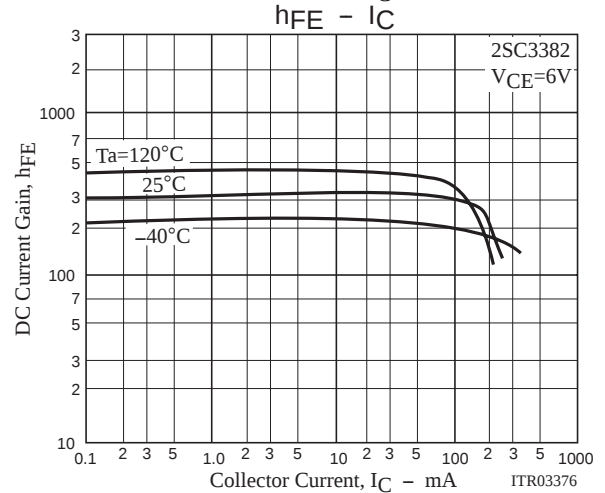
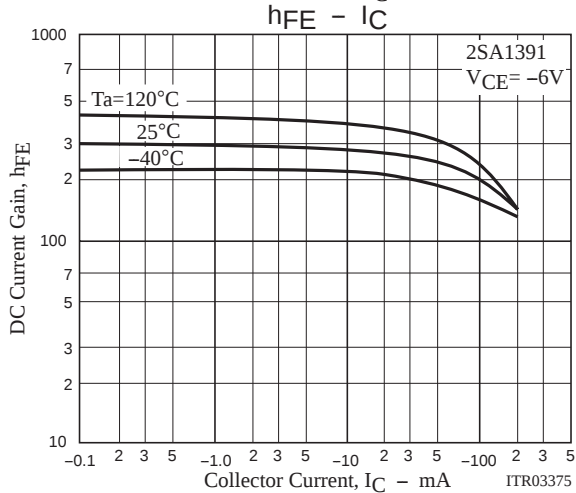
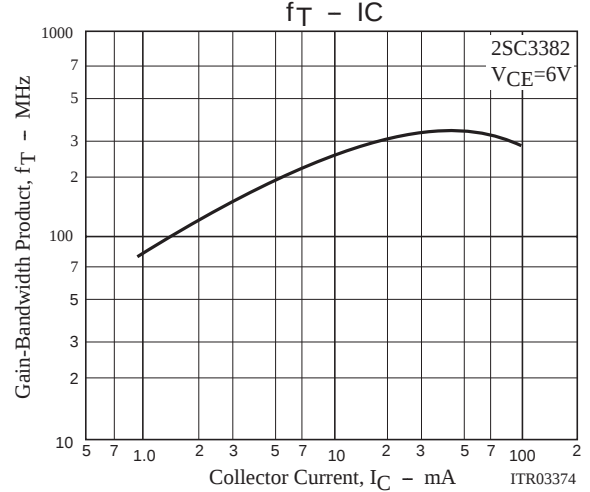
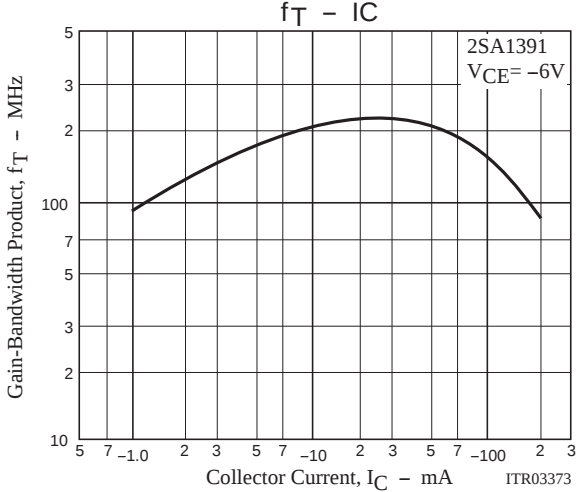
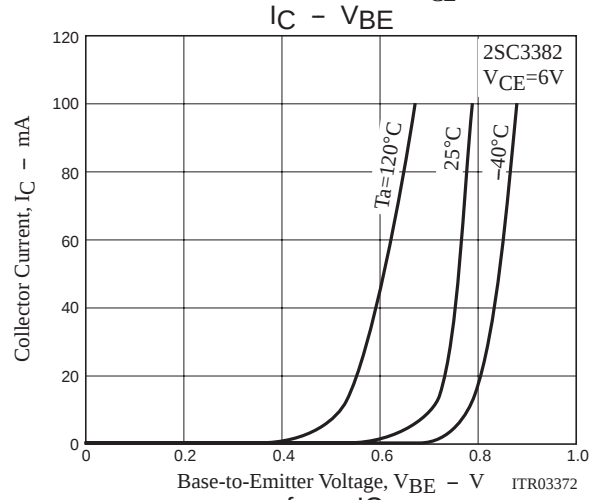
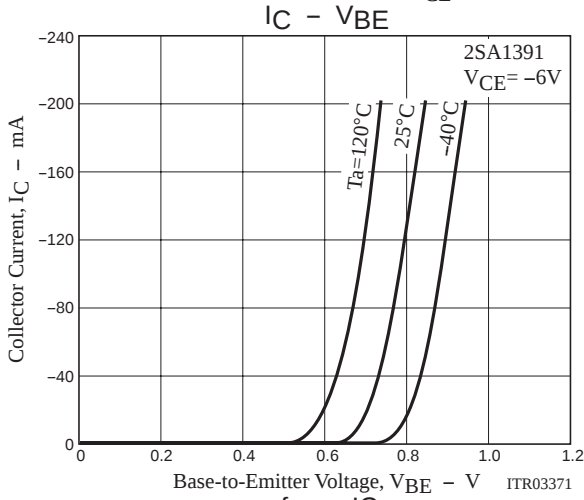
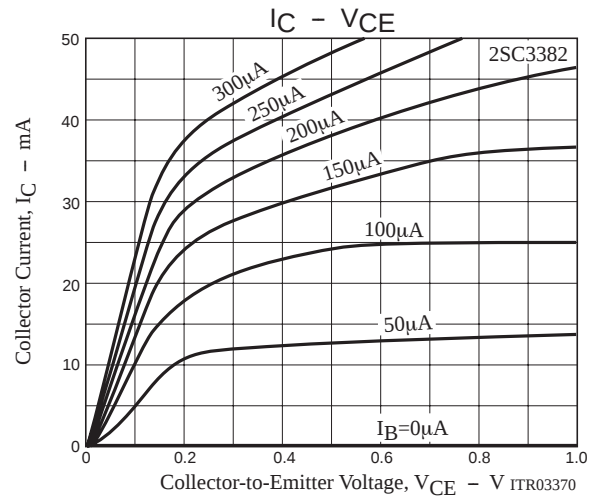
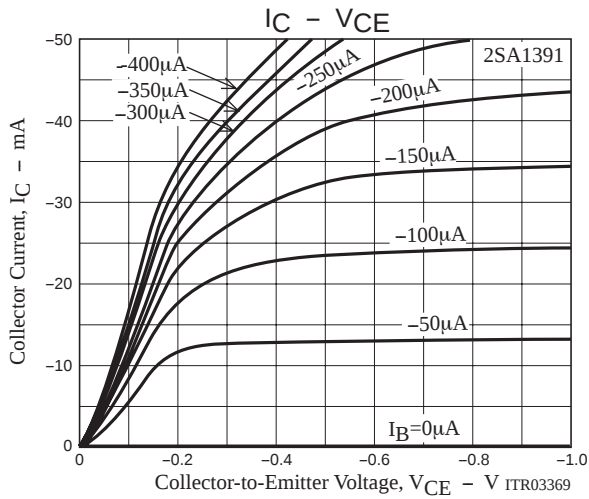
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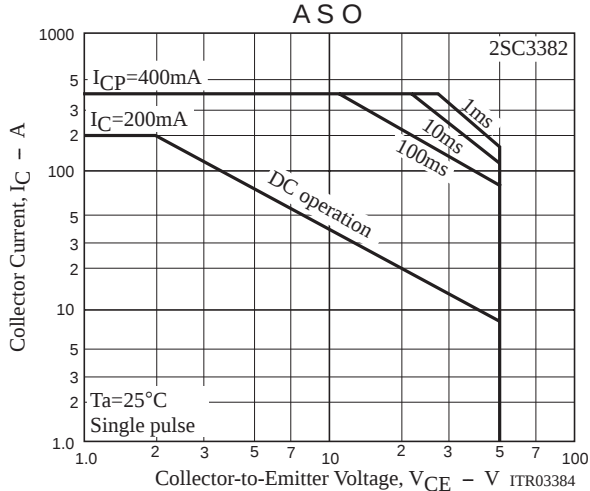
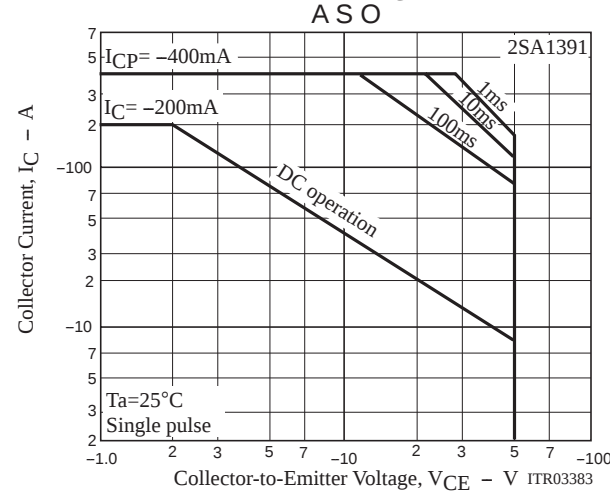
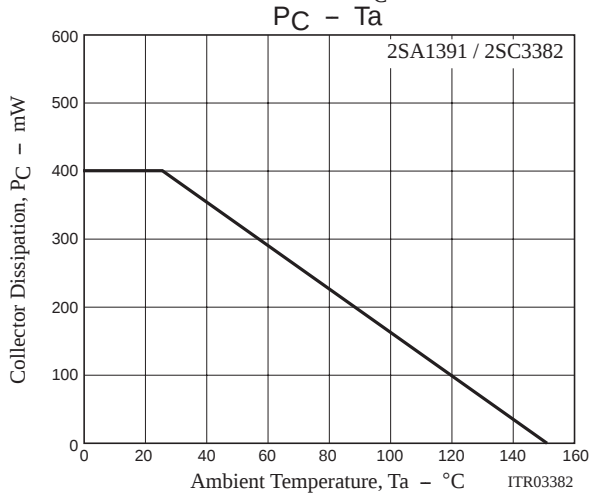
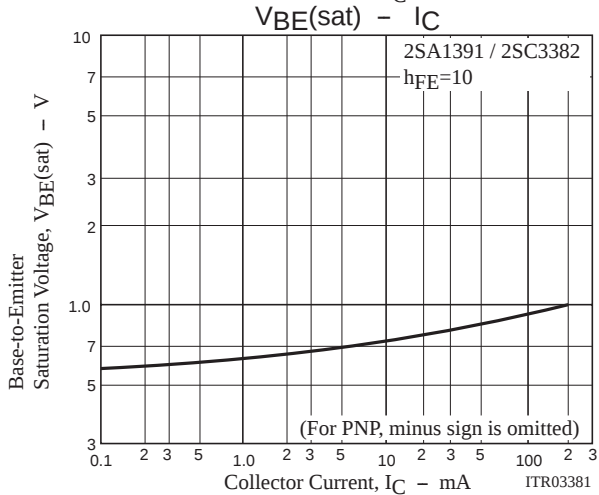
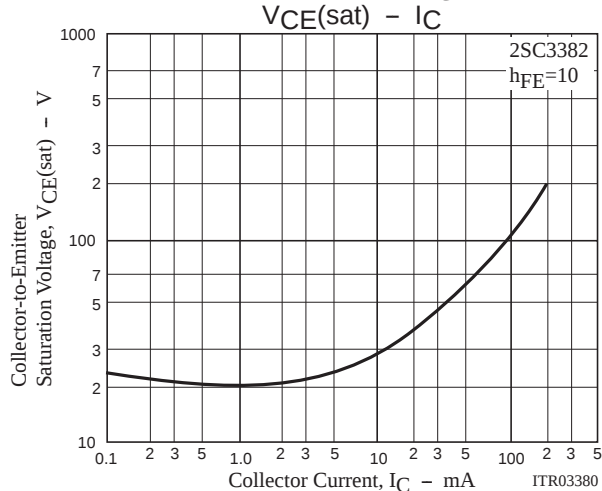
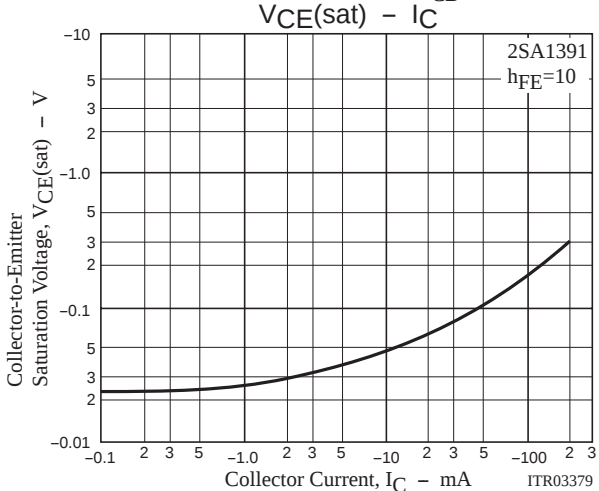
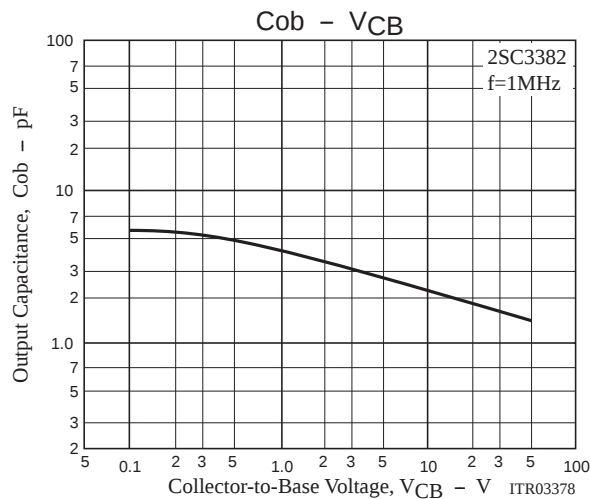
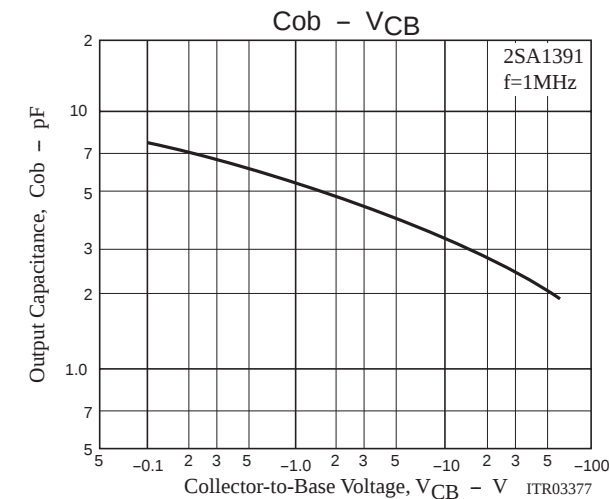
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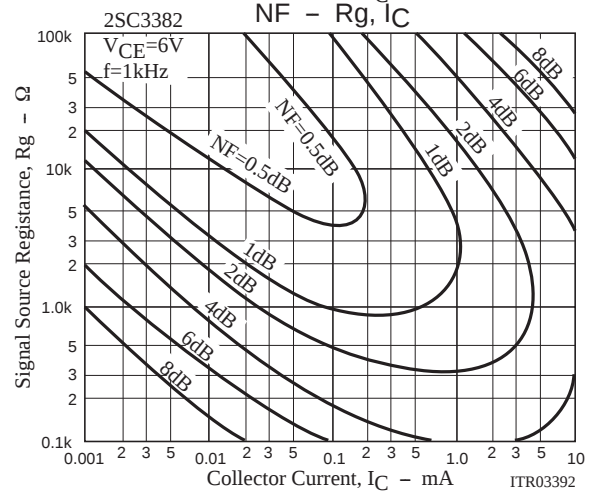
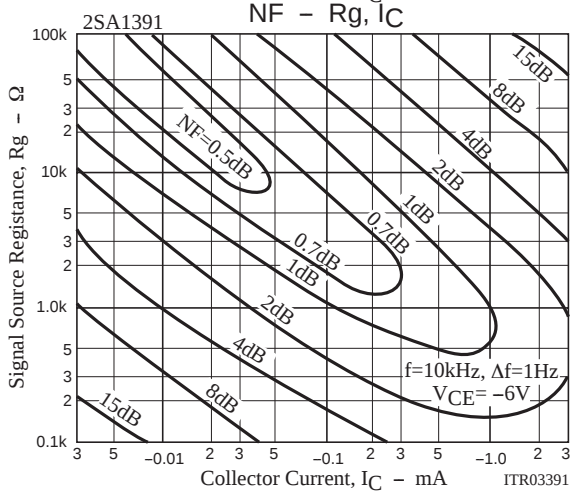
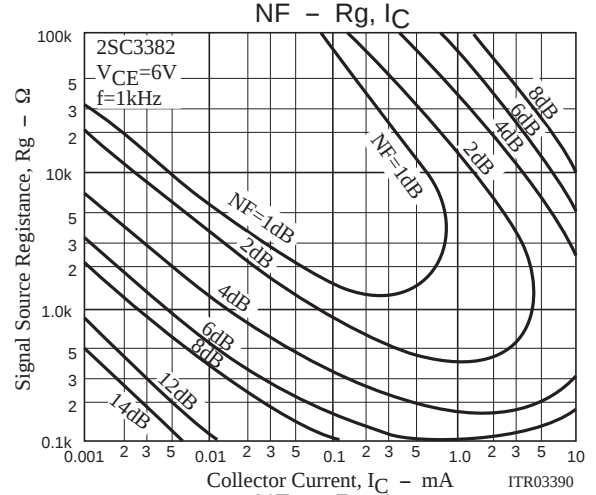
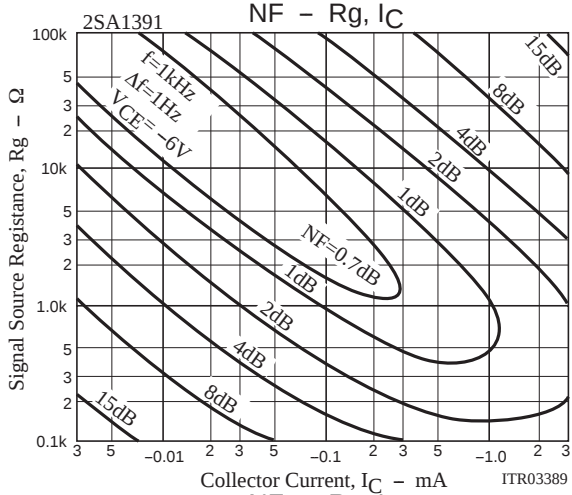
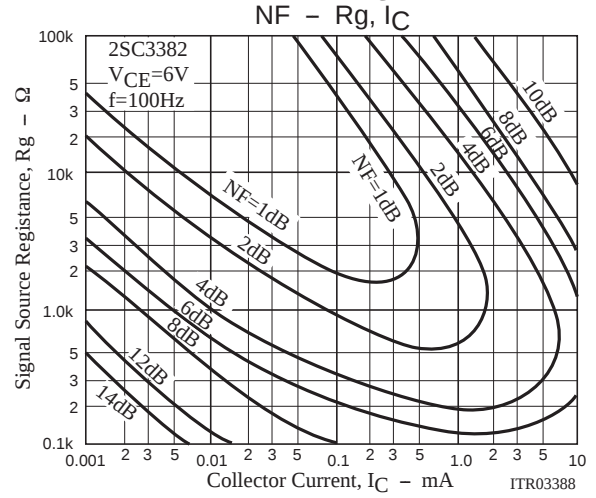
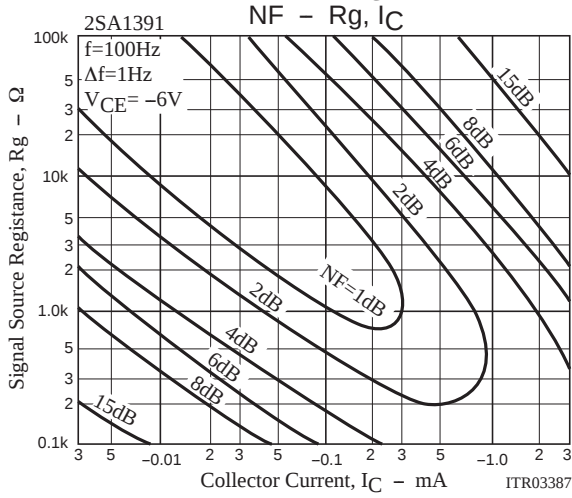
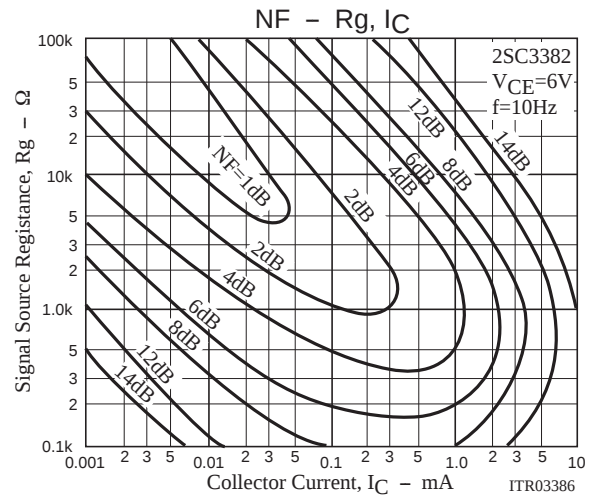
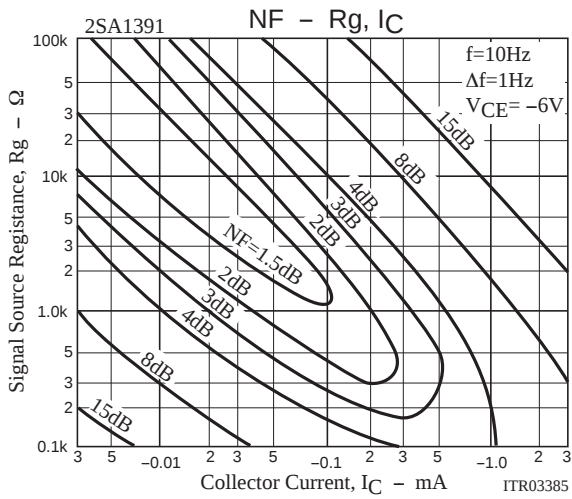
Noise Test Circuit







2SA1391 / 2SC3382



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