

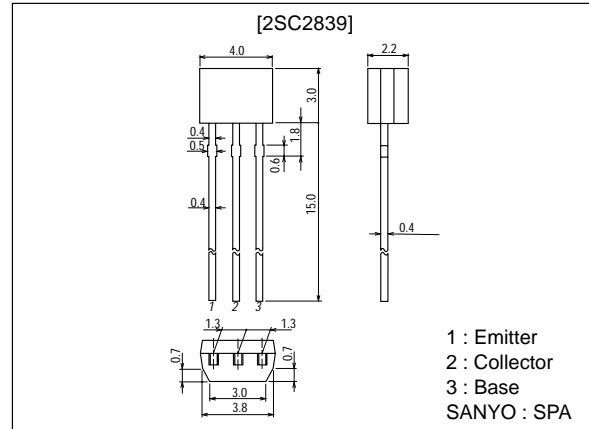
**2SC2839****HF Amplifier Applications****Features**

- Ultrasmall package enabling compactness and slimness of sets.
- High  $f_T$  and small  $c_{re}$  ( $f_T=320\text{MHz}$  typ,  $c_{re}=0.95\text{pF}$  typ).

**Package Dimensions**

unit:mm

2033A

**Specifications****Absolute Maximum Ratings** at  $T_a = 25^\circ\text{C}$ 

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CBO}$		30	V
Collector-to-Emitter Voltage	$V_{CEO}$		20	V
Emitter-to-Base Voltage	$V_{EBO}$		5	V
Collector Current	$I_C$		30	mA
Collector Dissipation	$P_C$		150	mW
Junction Temperature	$T_J$		125	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +125	$^\circ\text{C}$

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=10\text{V}$ , $I_E=0$			0.1	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=4\text{V}$ , $I_C=0$			0.1	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{CE}=6\text{V}$ , $I_C=1\text{mA}$	60*		320*	
Gain-Bandwidth Product	$f_T$	$V_{CE}=6\text{V}$ , $I_C=1\text{mA}$	200	320		MHz
Reverse Transfer Capacitance	$C_{re}$	$V_{CB}=6\text{V}$ , $f=1\text{MHz}$	0.7	0.95	1.3	pF
Base-to-Collector Time Constant	$r_{bb}C_C$	$V_{CE}=6\text{V}$ , $I_C=1\text{mA}$ , $f=31.9\text{MHz}$		12	20	ps
Noise Figure	NF	$V_{CE}=6\text{V}$ , $I_C=1\text{mA}$ , $f=100\text{MHz}$		3.0		dB
Power Gain	PG	$V_{CE}=6\text{V}$ , $I_C=1\text{mA}$ , $f=100\text{MHz}$		25		dB

\* : The 2SC2839 are classified as follows by  $h_{FE}$  at 1mA :

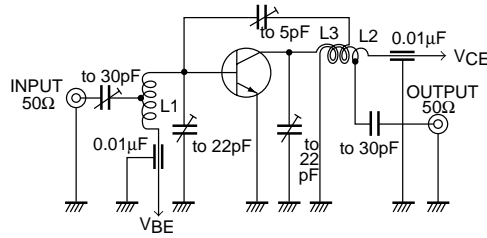
Rank	D	E	F
$h_{FE}$	60 to 120	100 to 200	160 to 320

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# 2SC2839

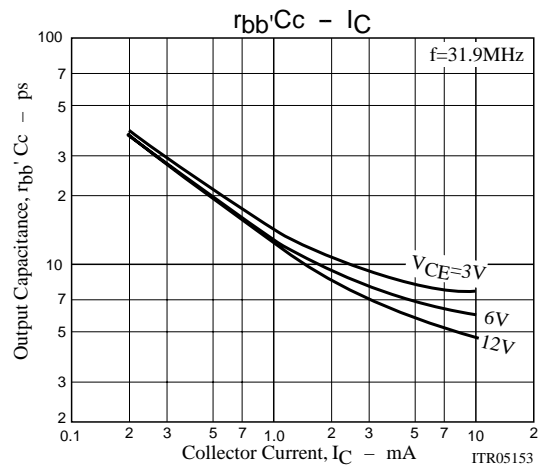
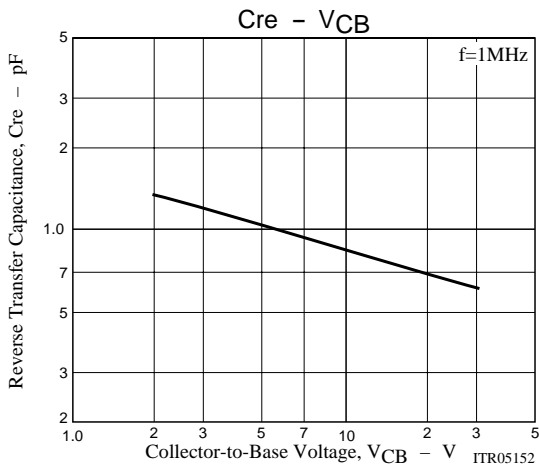
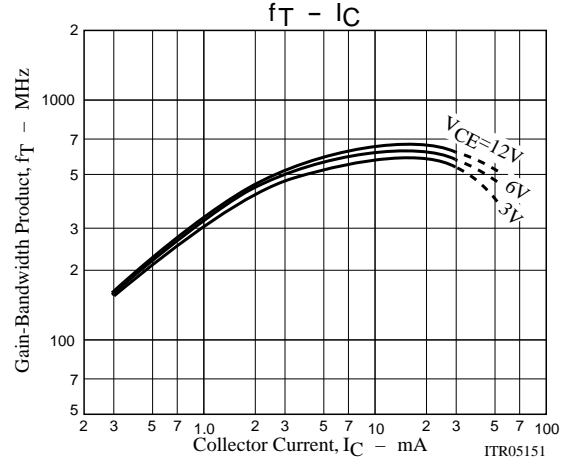
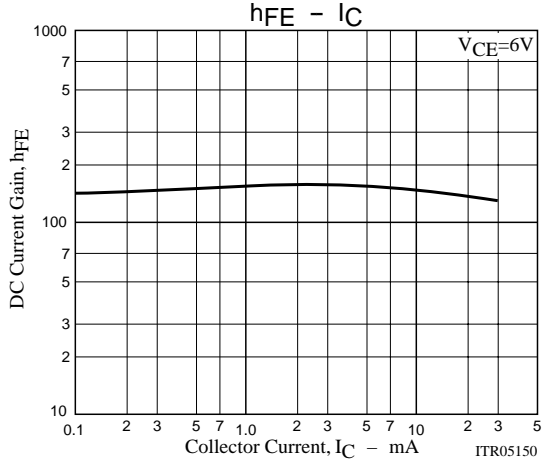
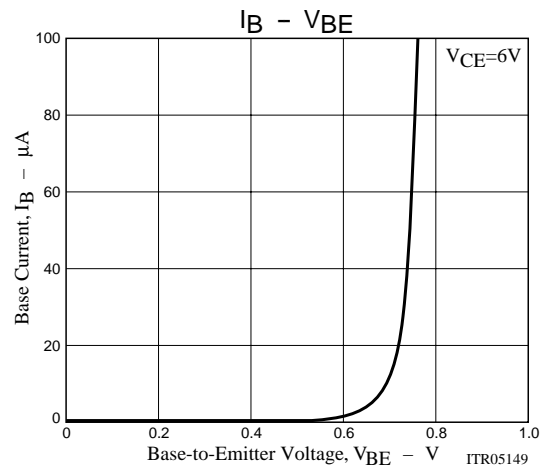
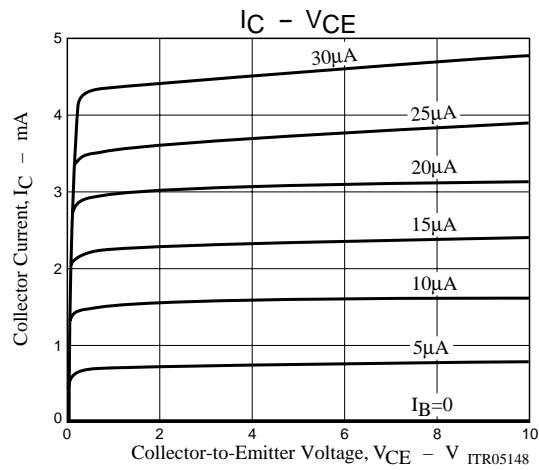
## NF, PG Test Circuit



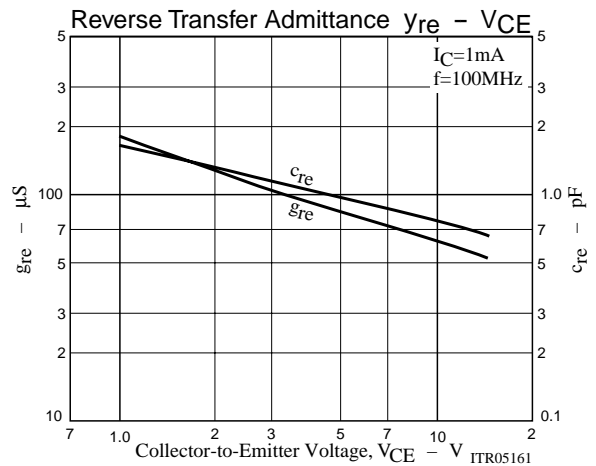
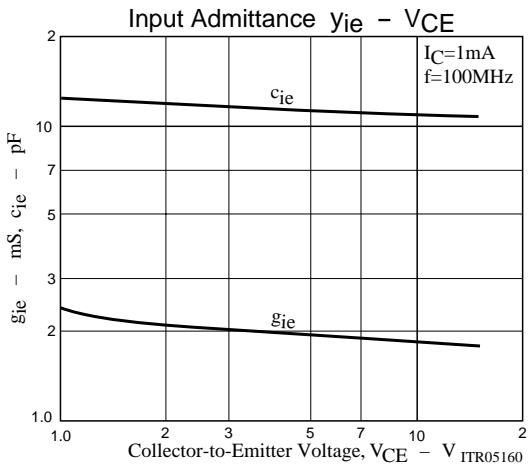
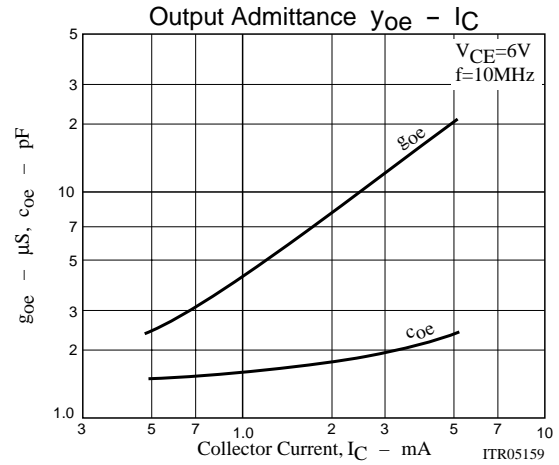
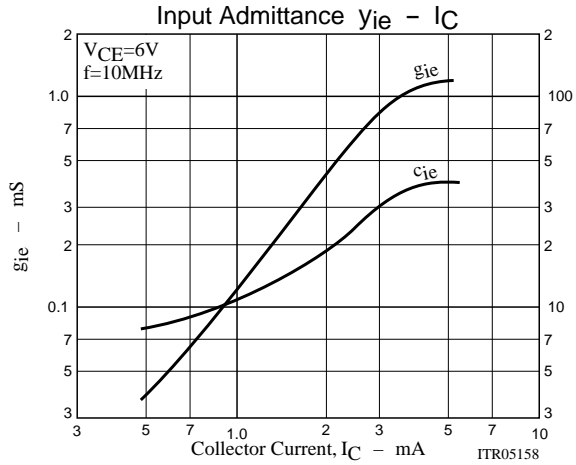
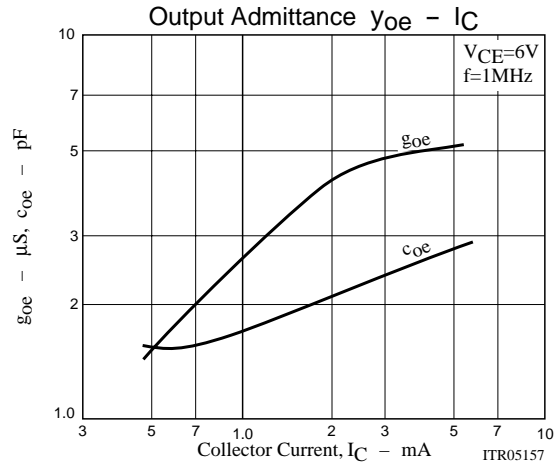
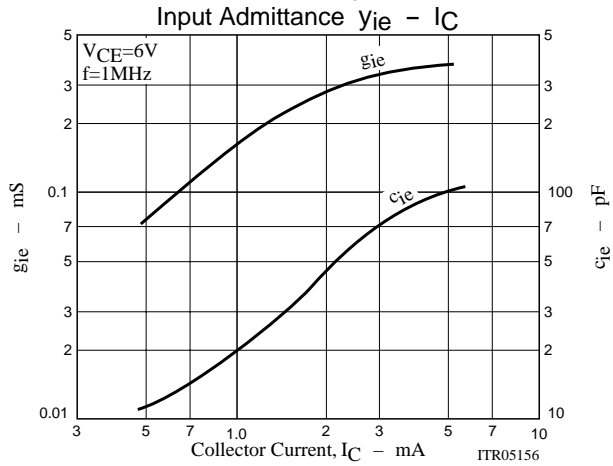
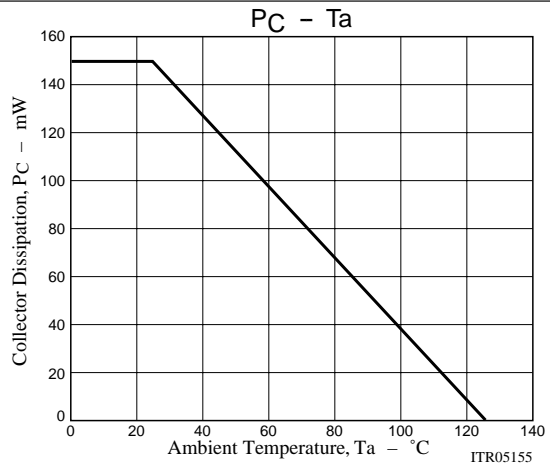
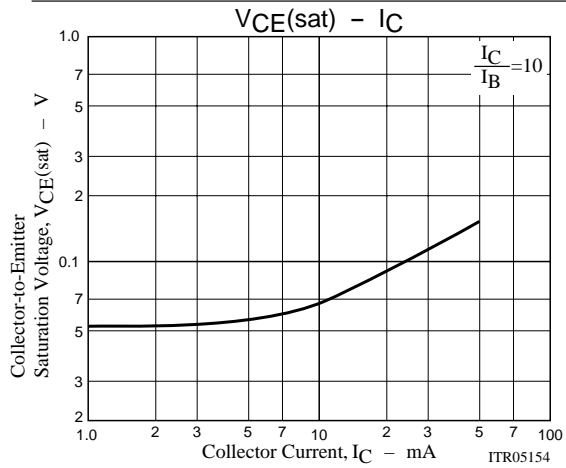
L1 : 1mmø plated wire, 10mmø 5T tap, 2T from V<sub>BE</sub> side.

L2 : 1mmø plated wire, 10mmø 7T tap, 1T from V<sub>CE</sub> side.

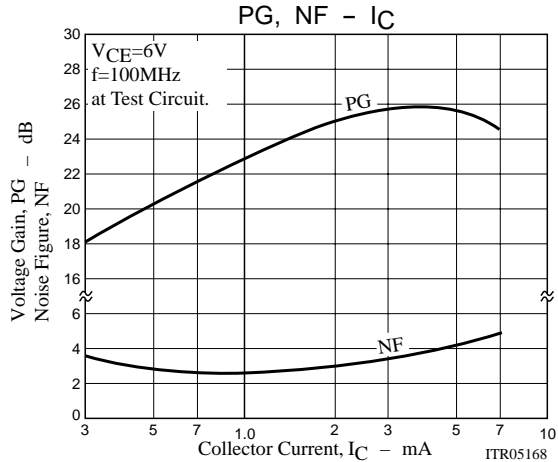
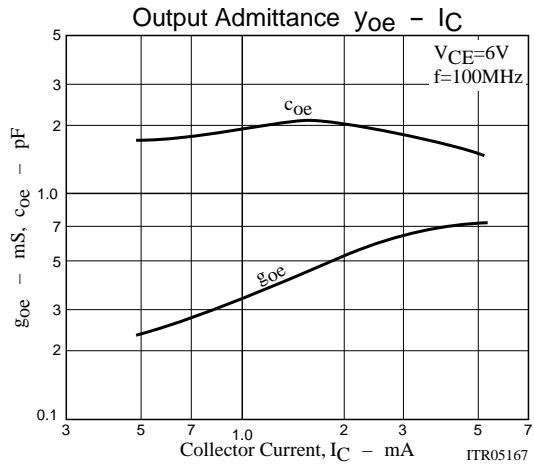
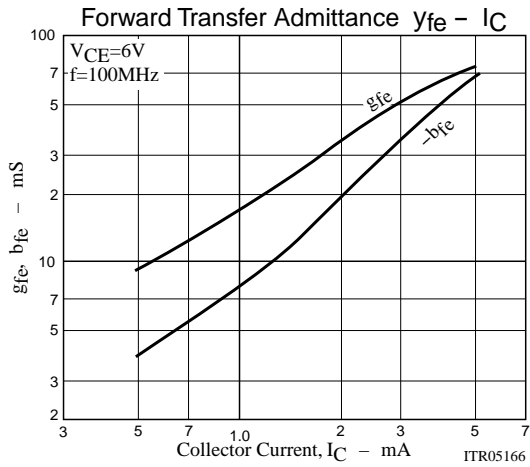
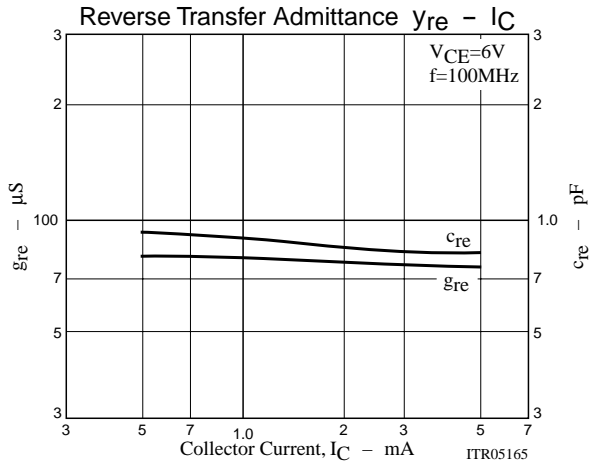
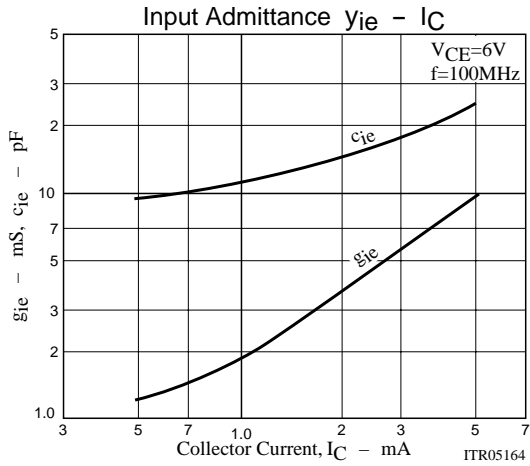
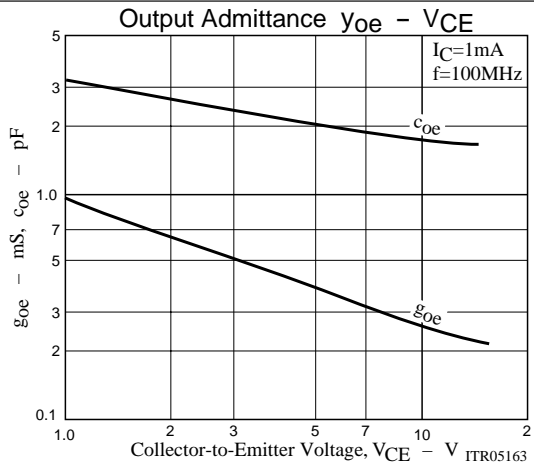
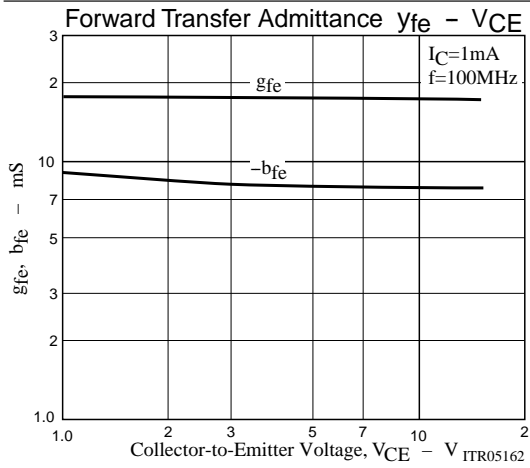
L3 : 1mmø enameled wire, 10mmø 3T .



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