

**2SC4399**

## High-Frequency General-Purpose Amplifier Applications

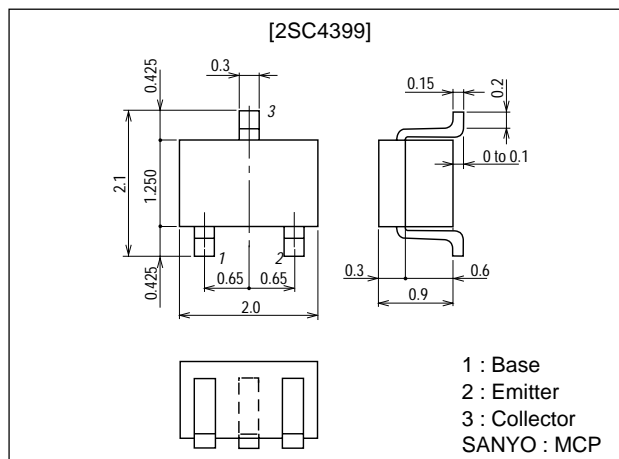
### Features

- High power gain : PG=25dB typ (f=100MHz).
- Ultrasmall-sized package permitting the 2SC4399-applied sets to be made small and slim.

### Package Dimensions

unit:mm

2059B



### Specifications

#### Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CB0}$		30	V
Collector-to-Emitter Voltage	$V_{CE0}$		20	V
Emitter-to-Base Voltage	$V_{EBO}$		5	V
Collector Current	$I_C$		30	mA
Collector Dissipation	$P_C$		150	mW
Junction Temperature	$T_J$		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	$I_{CBO}$	$V_{CB}=10V, I_E=0$			0.1	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=4V, I_C=0$			0.1	$\mu A$
DC Current Gain	$h_{FE}$	$V_{CE}=6V, I_C=1mA$	60*		270*	
Gain-Bandwidth Product	$f_T$	$V_{CE}=6V, I_C=1mA$	200	320		MHz
Reverse transfer Capacitance	$C_{re}$	$V_{CB}=6V, f=1MHz$		0.9	1.2	pF
Base-to-Collector Time Constant	$r_{bb}C_c$	$V_{CB}=6V, I_C=1mA, f=31.9MHz$		12	20	ps
Power Gain	PG	$V_{CB}=6V, I_C=1mA, f=100MHz$		25		dB
Noise Figure	NF	$V_{CB}=6V, I_C=1mA, f=100MHz$		3.0		dB

\* : The 2SC4399 is classified by 1mA  $h_{FE}$  as follows :  
Marking : F  
 $h_{FE}$  rank : 3, 4, 5

Rank	3	4	5
$h_{FE}$	60 to 120	90 to 180	135 to 270

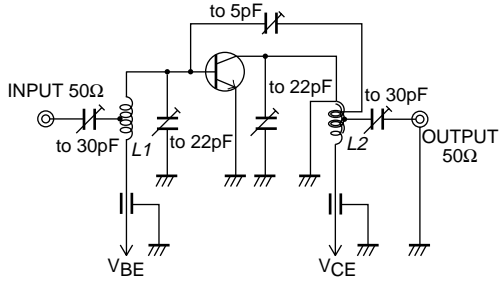
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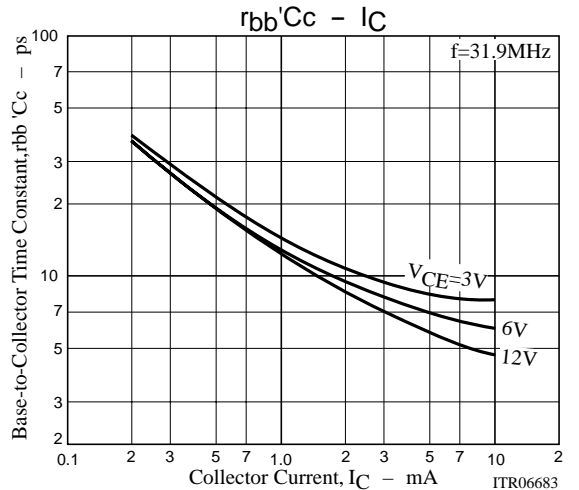
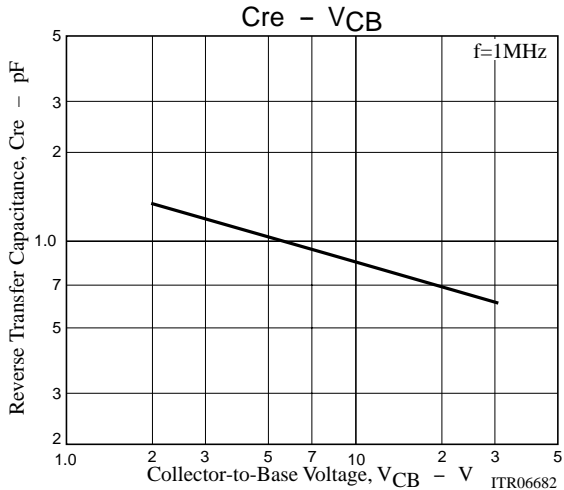
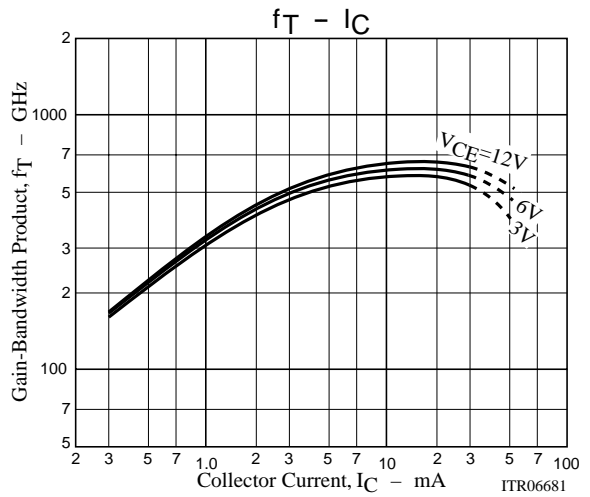
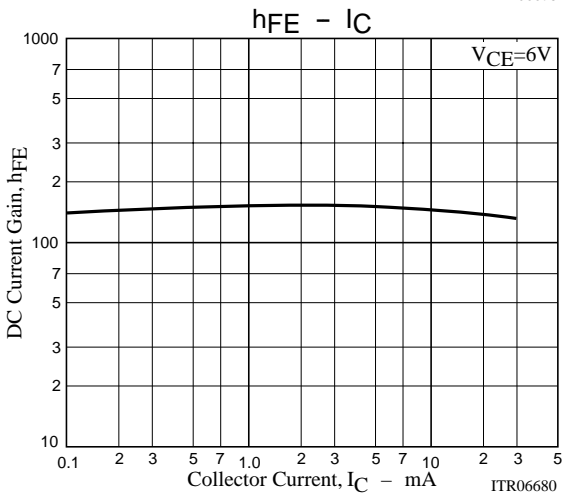
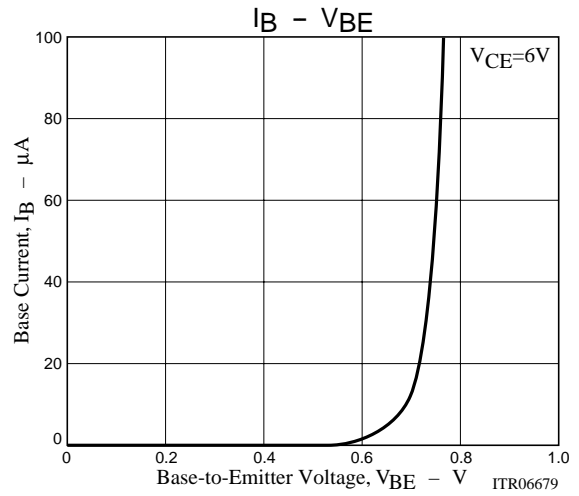
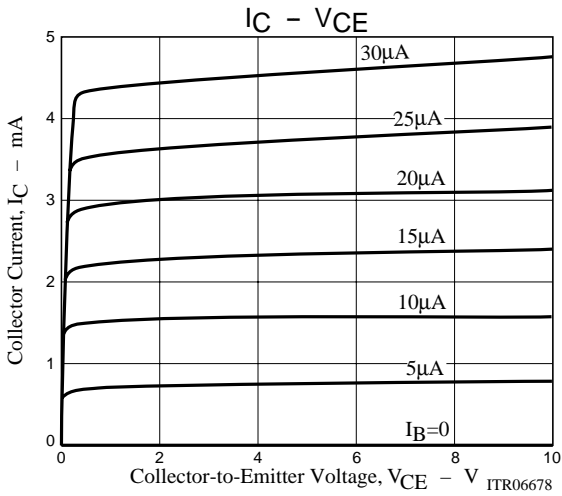
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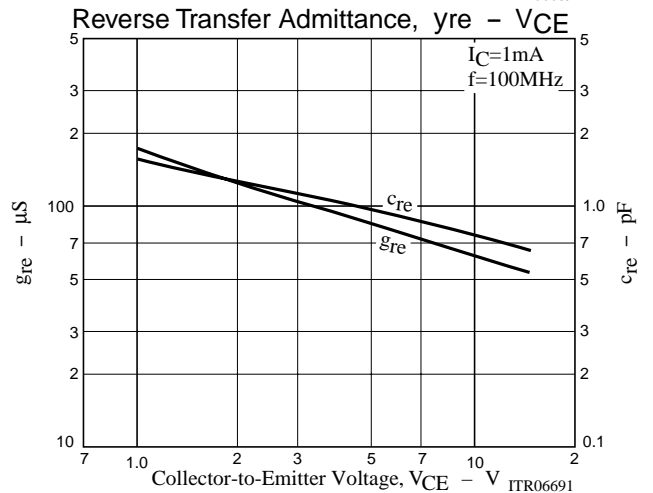
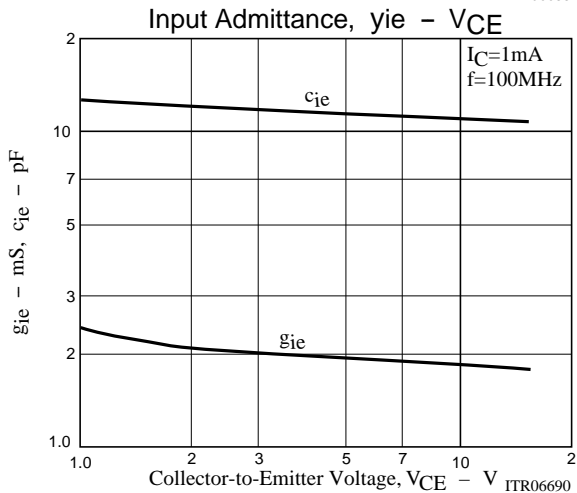
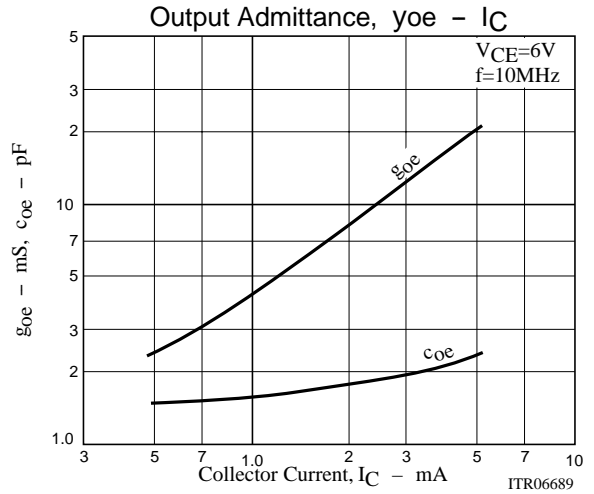
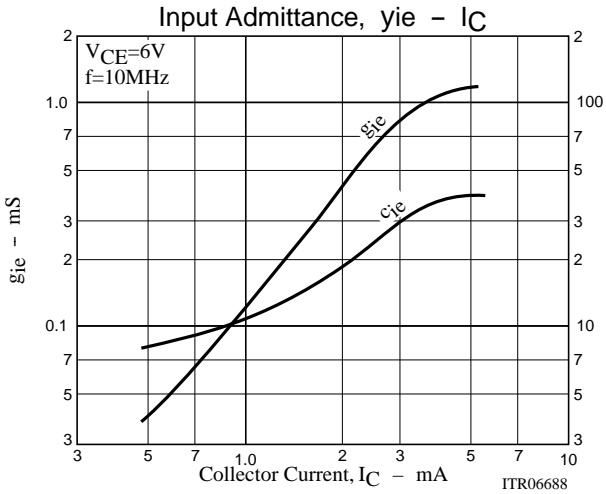
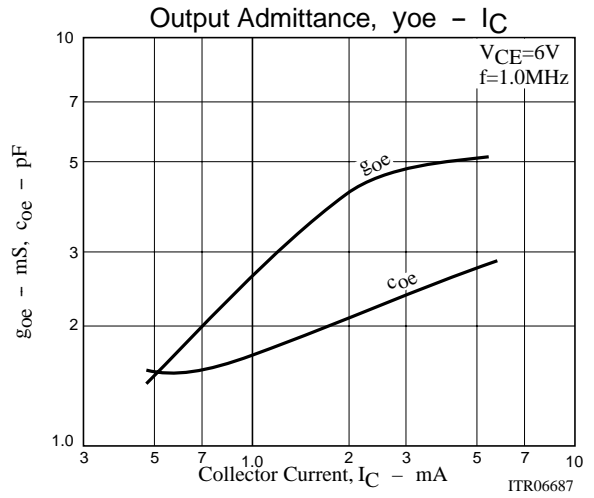
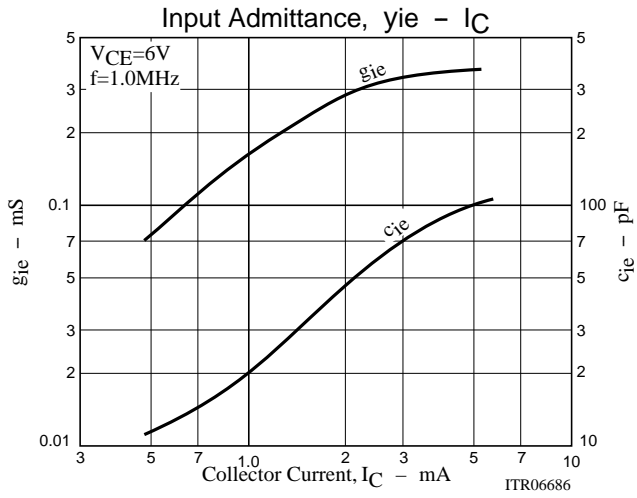
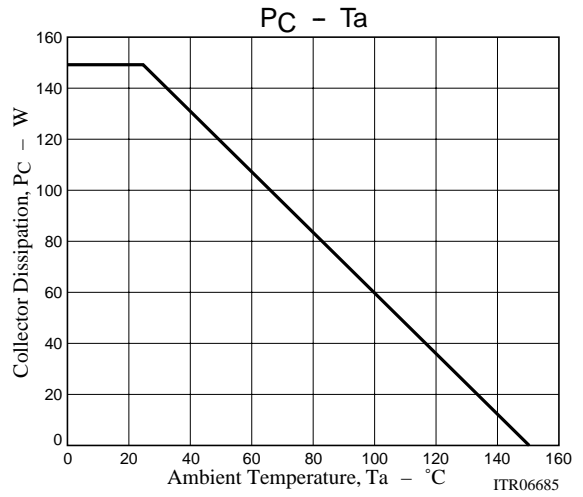
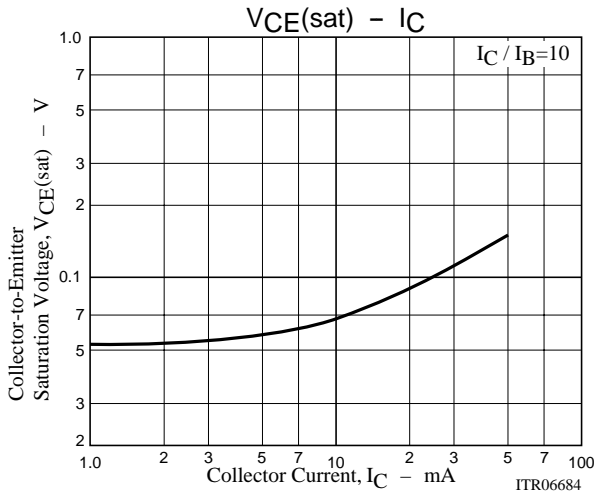
NF, PG Test Circuit



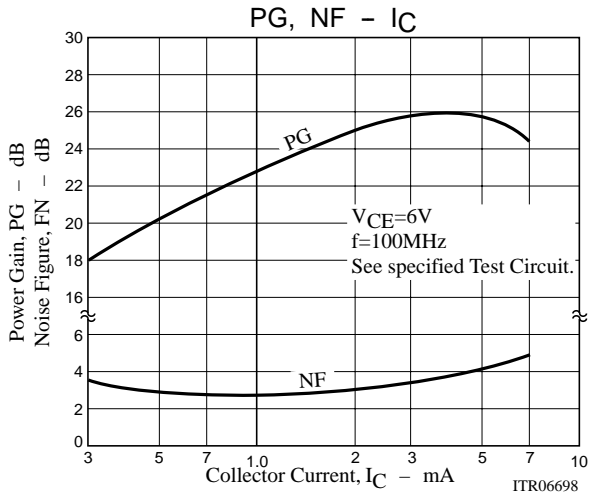
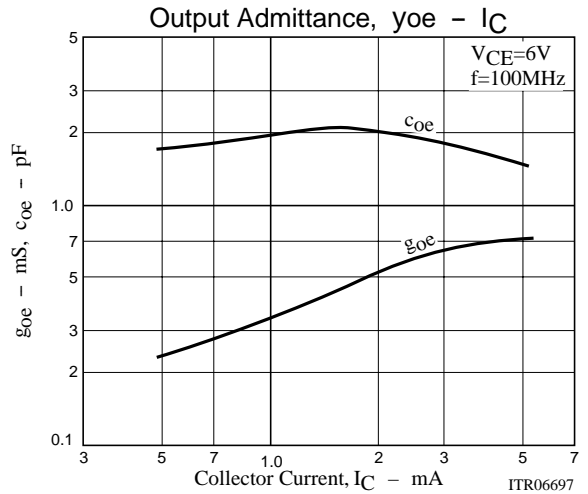
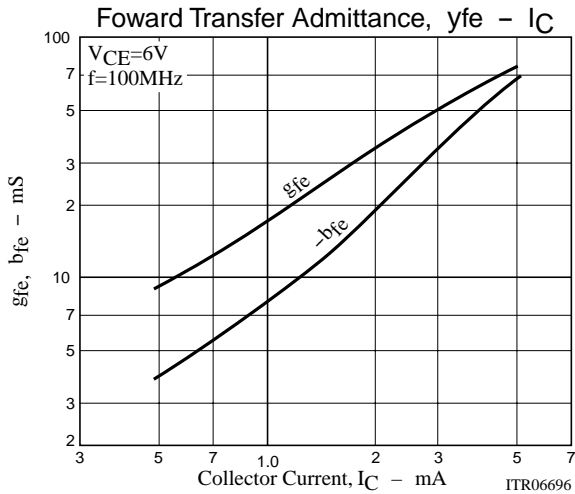
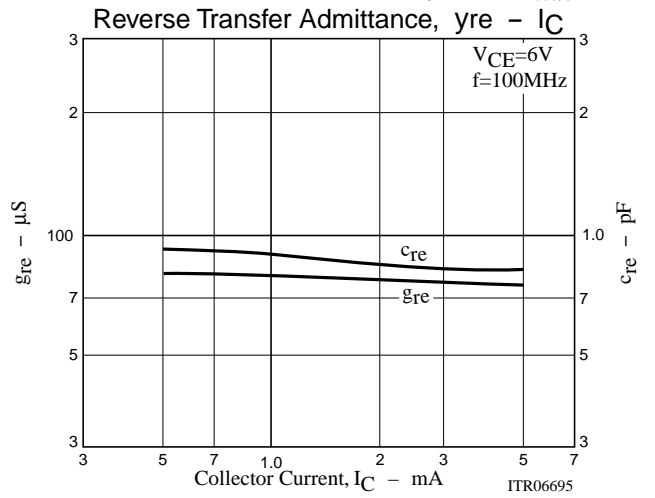
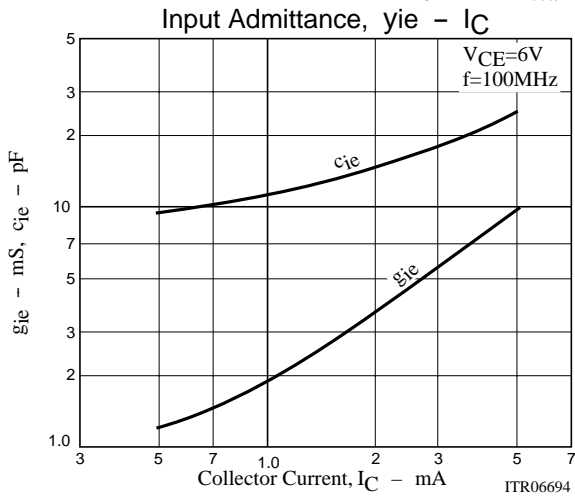
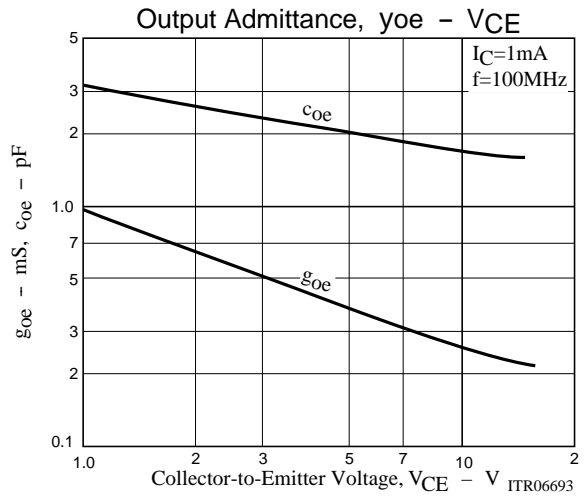
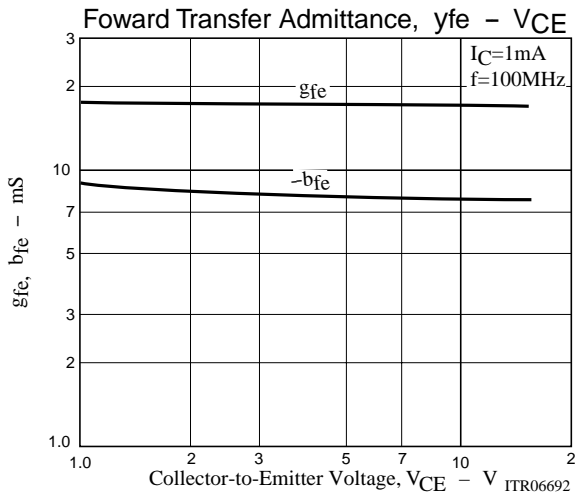
L1 : 1mm $\phi$  plated wire 10mm $\phi$  4 T, tap : 2T from VBE side.  
 L2 : 1mm $\phi$  plated wire 10mm $\phi$  7 T, tap : 1T from VCE side.  
 L3 : 1mm $\phi$  enameled wire 10mm $\phi$  3 T



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