

2SC4399

T-31-15

2059

NPN Epitaxial Planar Silicon Transistor

**High-Frequency General-Purpose
Amp Applications**

E3020

Features

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

Absolute Maximum Ratings at Ta=25°C

			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	150	°C
Storage Temperature	T_{stg}	-55 to +150	°C

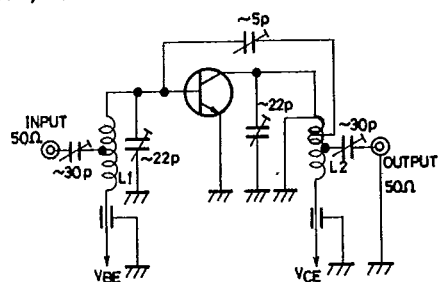
Electrical Characteristics at Ta=25°C

			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB}=10V, I_E=0$			0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=4V, I_C=0$			0.1	μA
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	$r_{bb}'C_c$	$V_{CE}=6V, I_C=1mA, f=31.9MHz$		12	20	ps
Power Gain	PG	$V_{CE}=6V, I_C=1mA, f=100MHz$		25		dB
Noise Figure	NF	$V_{CE}=6V, I_C=1mA, f=100MHz$		3.0		dB

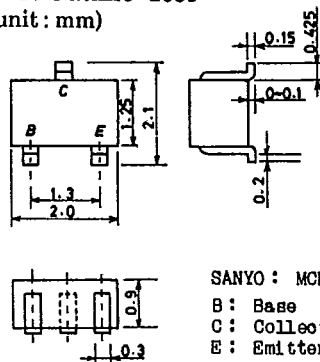
※ : The 2SC4399 is classified by 1mA h_{FE} as follows:

60	3	120	90	4	180	135	5	270
----	---	-----	----	---	-----	-----	---	-----

Marking : F

 h_{FE} rank : 3,4,5**NF,PG Test Circuit**

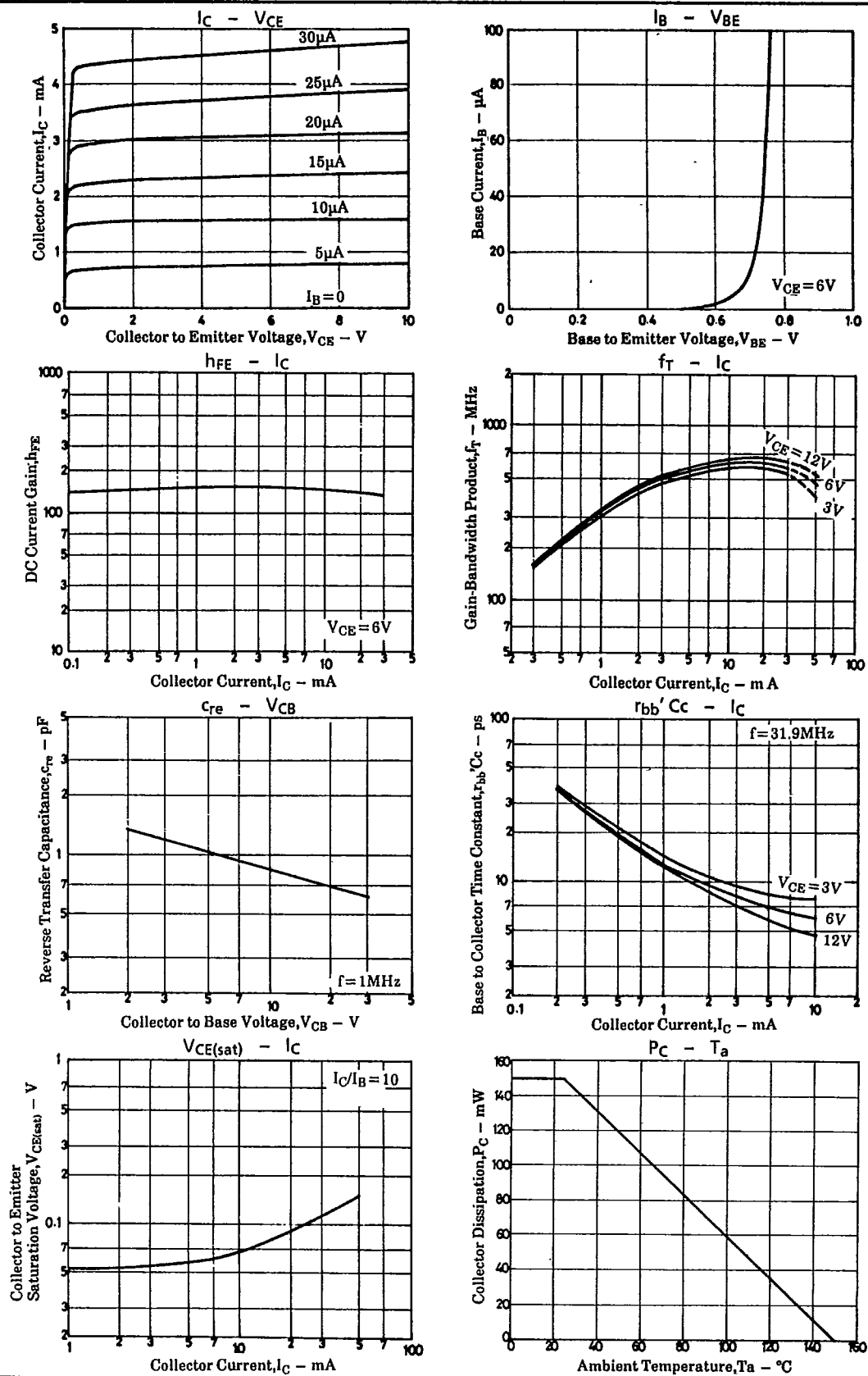
- L1 : 1mm $\varnothing$ plated wire 10mm $\varnothing$ 4T, tap : 2T from V_{BE} side
 L2 : 1mm $\varnothing$ plated wire 10mm $\varnothing$ 7T, tap : 1T from V_{CE} side
 L3 : 1mm $\varnothing$ enameled wire 10mm $\varnothing$ 3T

Case Outline 2059
(unit : mm)

SANYO : MCP
 B : Base
 C : Collector
 E : Emitter

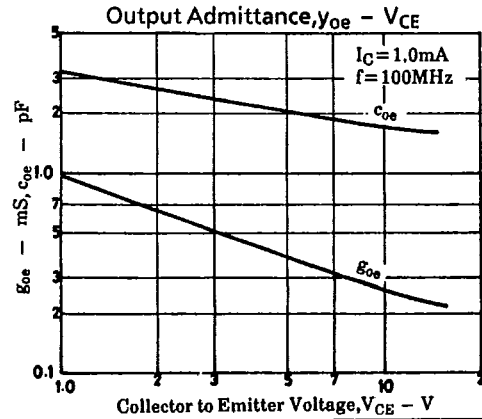
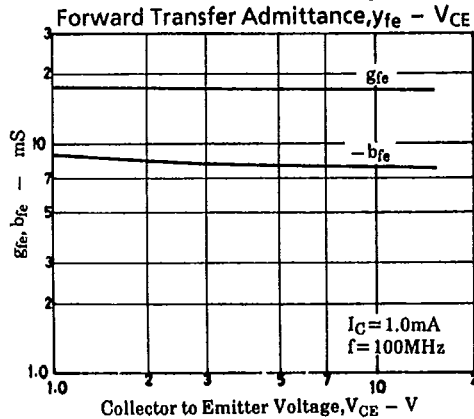
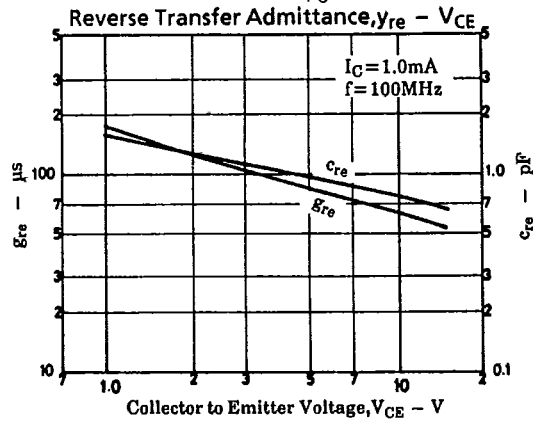
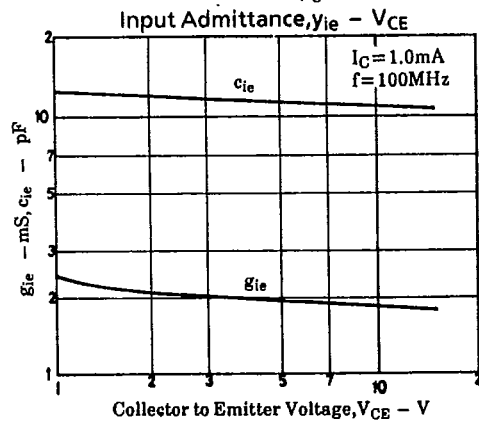
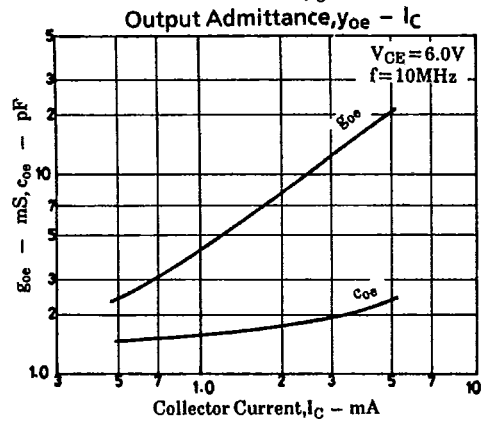
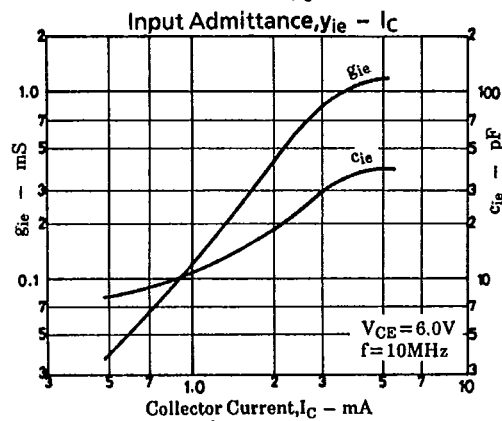
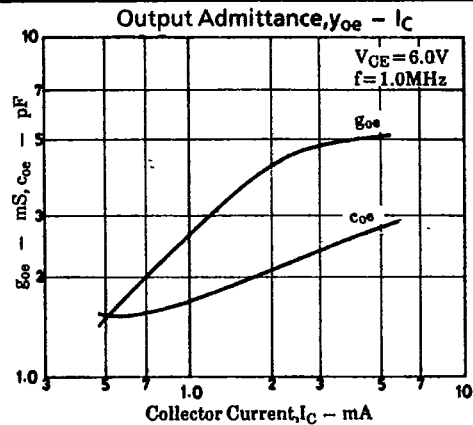
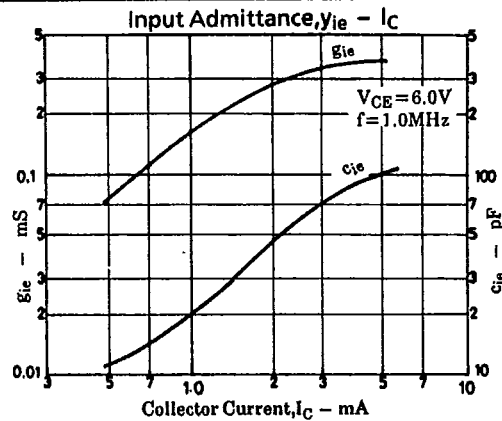
2SC4399

T-31-15



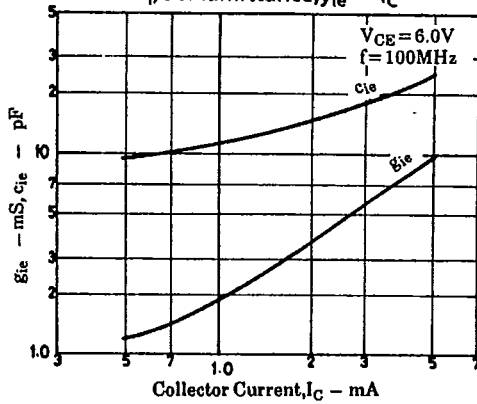
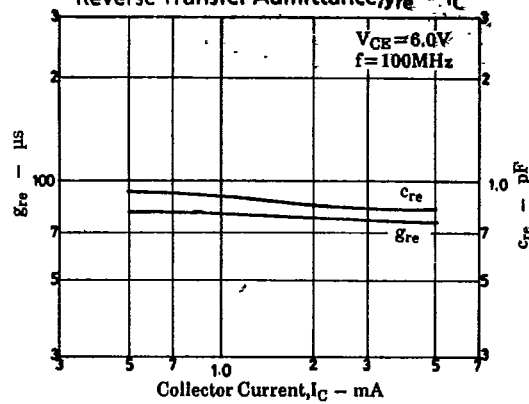
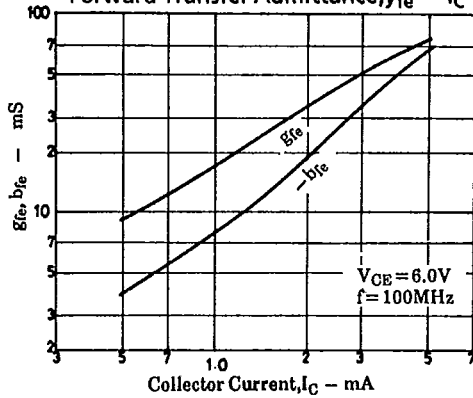
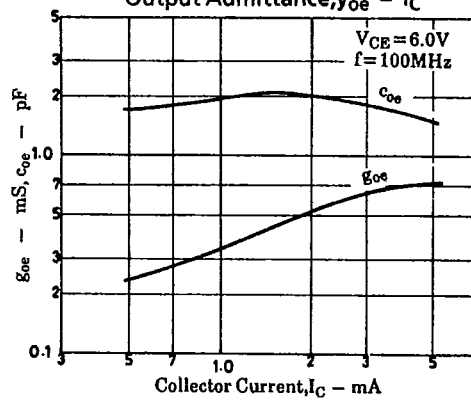
25C4399

T-31-15



2SC4399

T-31-15

Input Admittance, $y_{ie} - I_C$ Reverse Transfer Admittance, $y_{re} - I_C$ Forward Transfer Admittance, $y_{fe} - I_C$ Output Admittance, $y_{oe} - I_C$ PG, NF - I_C 