Ordering number:ENN733D

NPN Epitaxial Planar Silicon Transistor

2SC2839

HF Amplifier Applications

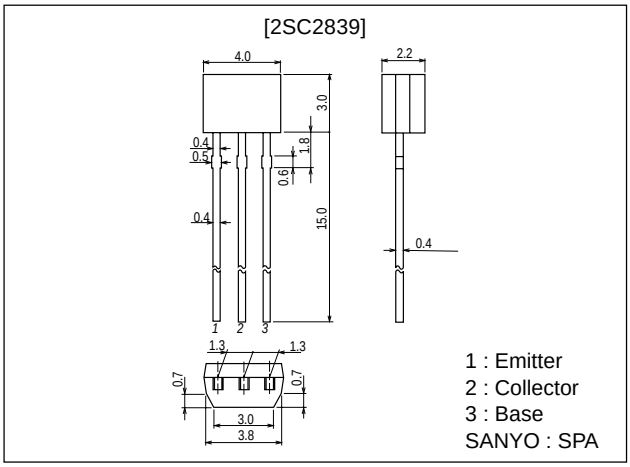
Features

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

Package Dimensions

unit:mm

2033A



Specifications

Absolute Maximum Ratings at Ta = 25˚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	Tj		125	˚C
Storage Temperature	Tstg		–55 to +125	˚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	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*		320*	
Gain-Bandwidth Product	f_T	V_{CE}=6V, I_C=1mA	200	320		MHz
Reverse Transfer Capacitance	C_{re}	V_{CB}=6V, f=1MHz	0.7	0.95	1.3	pF
Base-to-Collector Time Constant	rbb'C_C	V_{CE}=6V, I_C=1mA, f=31.9MHz		12	20	ps
Noise Figure	NF	V_{CE}=6V, I_C=1mA, f=100MHz		3.0		dB
Power Gain	PG	V_{CE}=6V, I_C=1mA, f=100MHz		25		dB

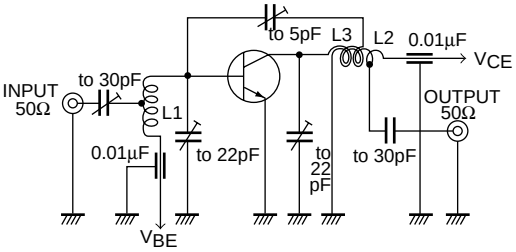
* : The 2SC2839 are classified as follows by h_{FE} at 1mA :

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

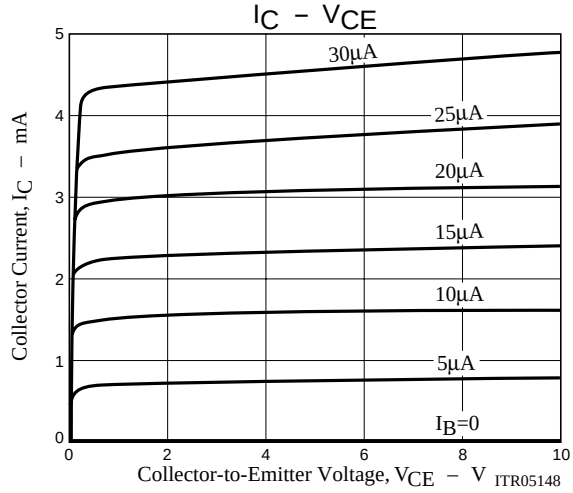
SANYO Electric Co.,Ltd. Semiconductor Company

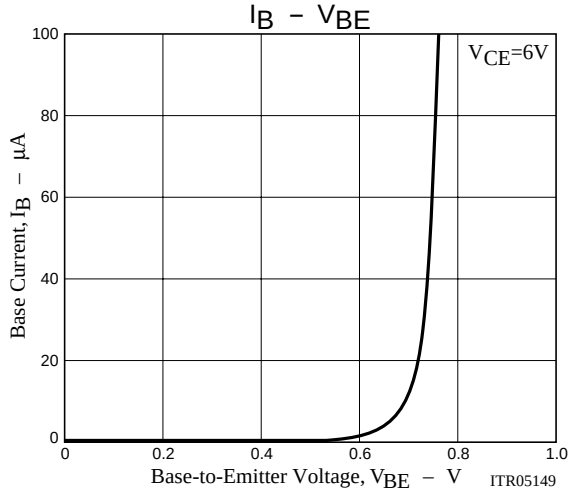
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

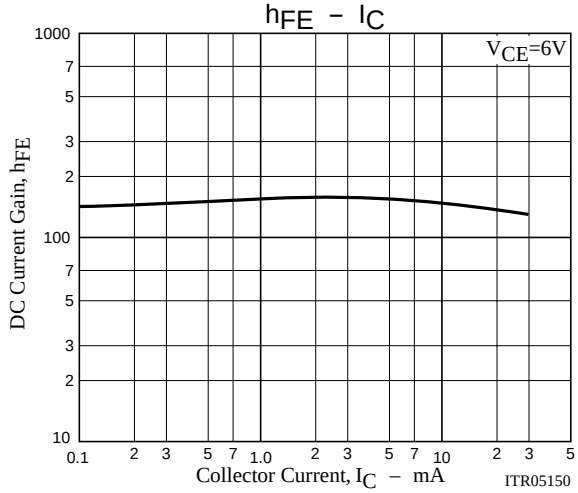
NF, PG Test Circuit

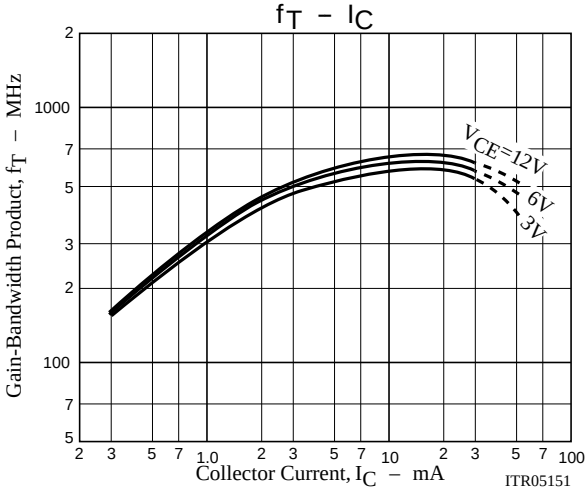


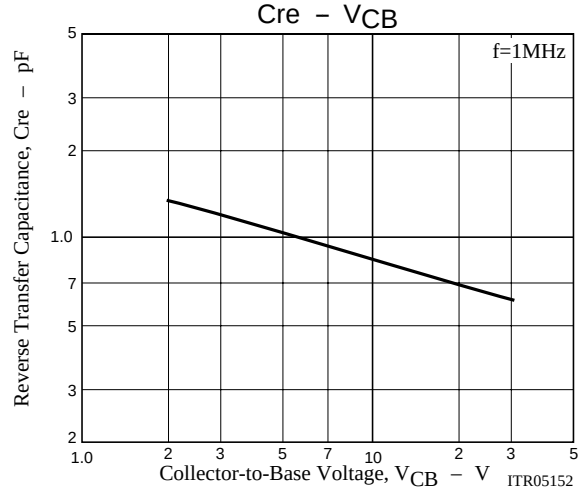
L1 : 1mmø plated wire, 10mmø 5T tap, 2T from V_{BE} side.
L2 : 1mmø plated wire, 10mmø 7T tap, 1T from V_{CE} side.
L3 : 1mmø enameled wire, 10mmø 3T .

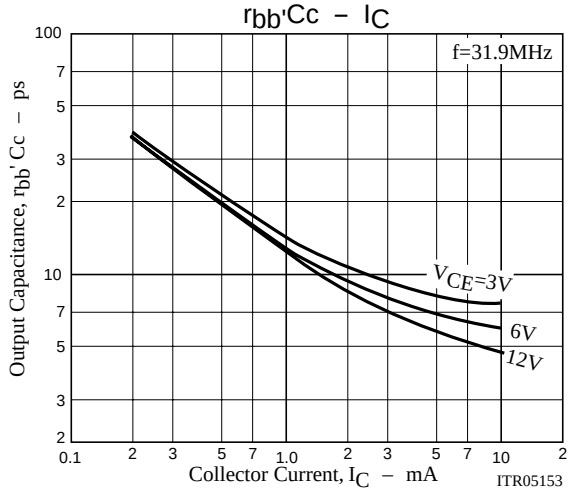




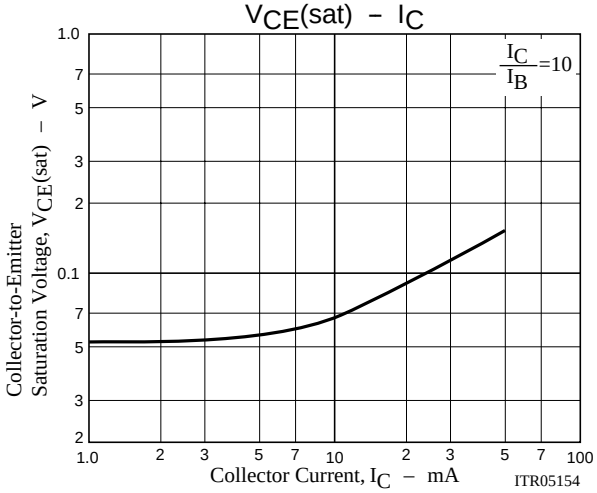




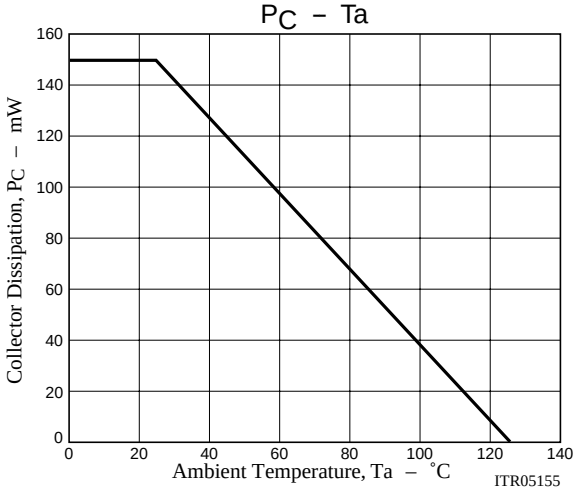




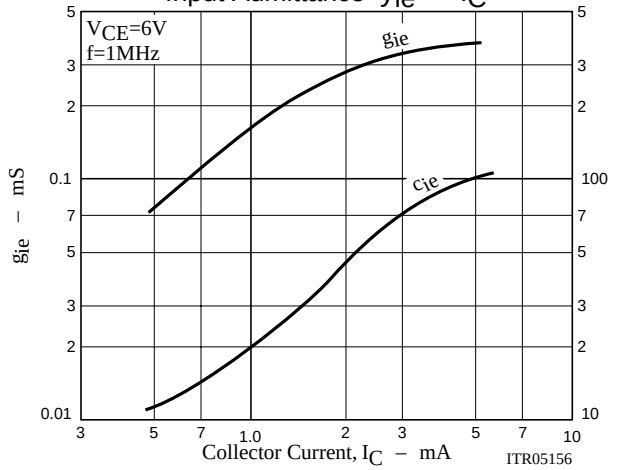
$V_{CE}(sat)$ – I_C



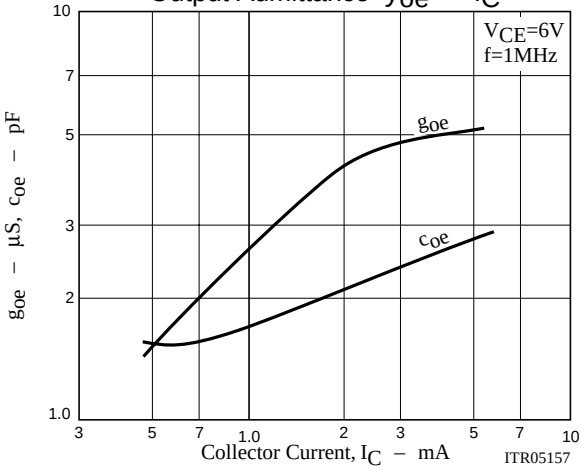
P_C – Ta



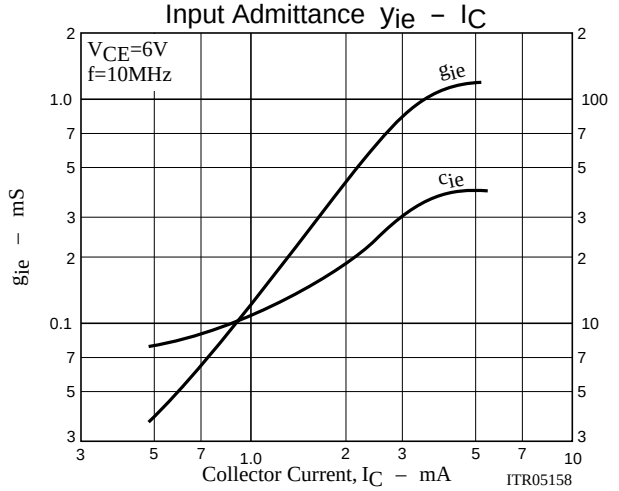
Input Admittance y_{ie} – I_C



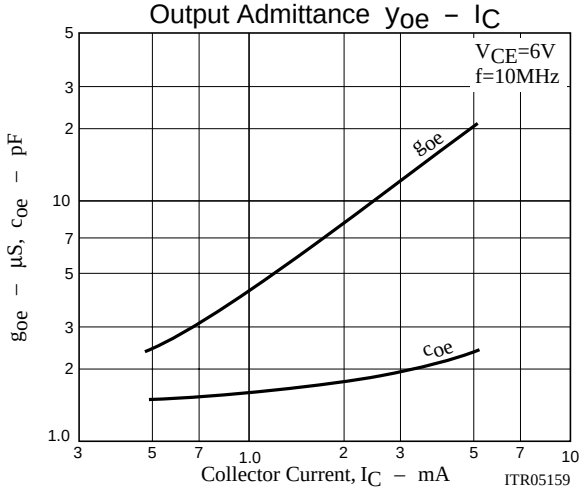
Output Admittance y_{oe} – I_C



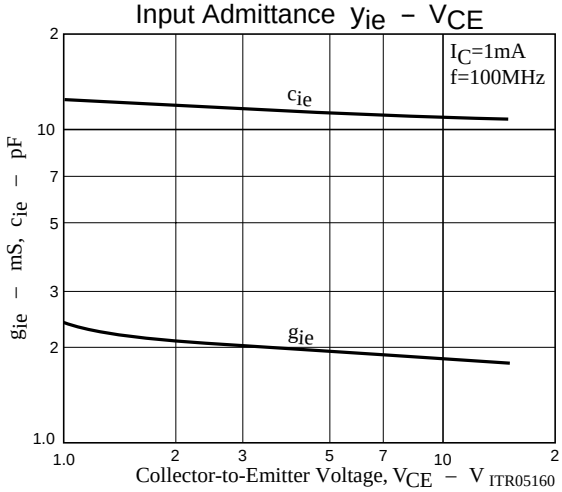
Input Admittance y_{ie} – I_C



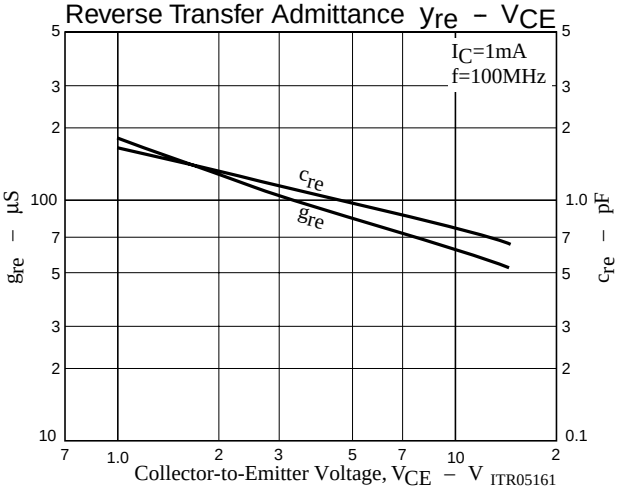
Output Admittance y_{oe} – I_C



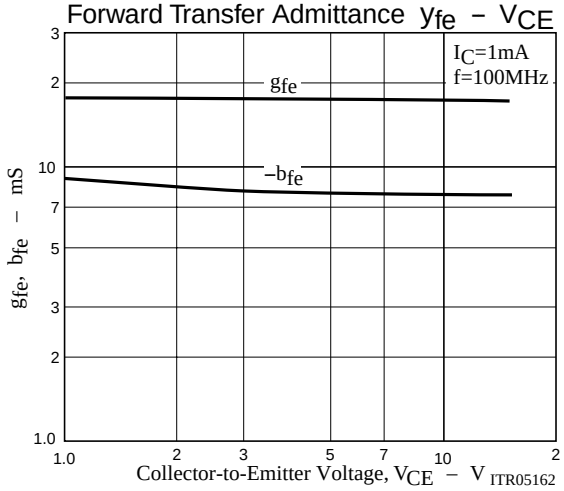
Input Admittance y_{ie} – V_{CE}



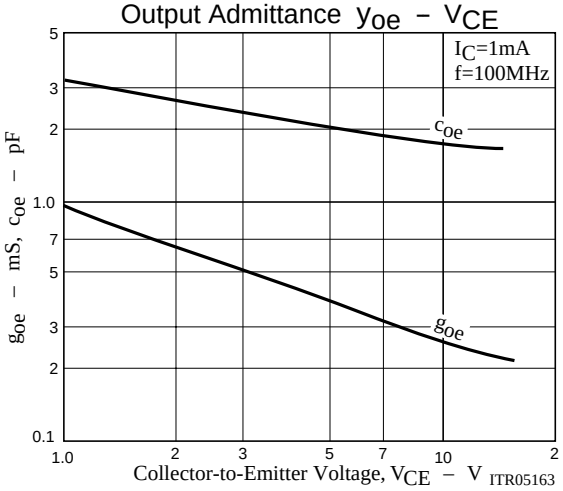
Reverse Transfer Admittance y_{re} – V_{CE}



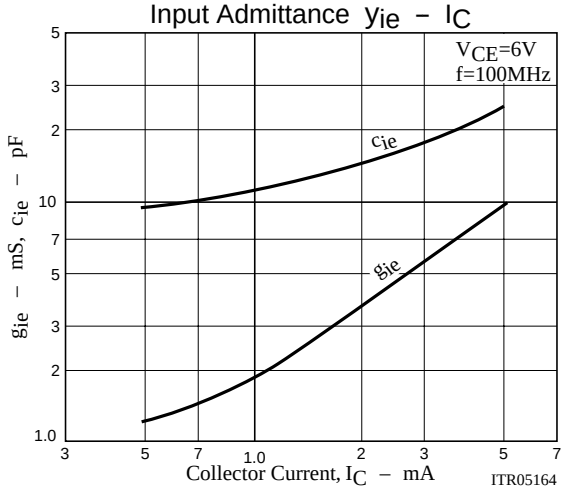
Forward Transfer Admittance y_{fe} – V_{CE}



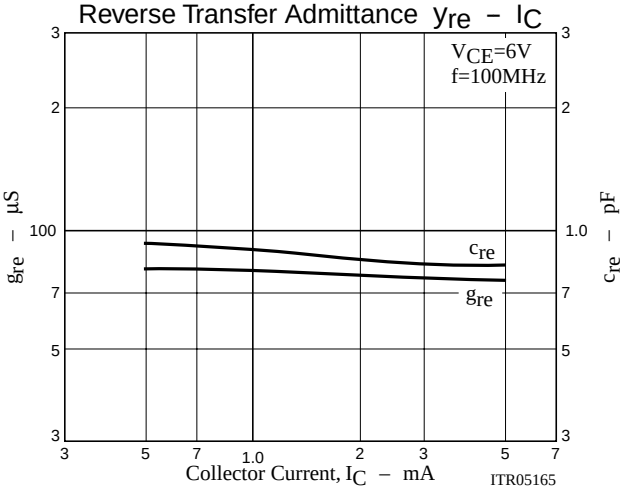
Output Admittance y_{oe} – V_{CE}



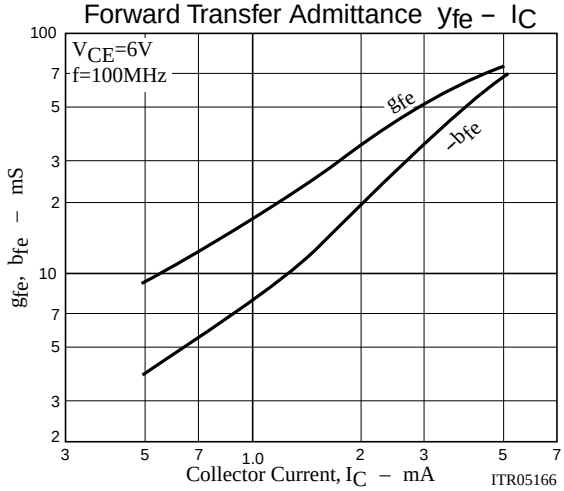
Input Admittance y_{ie} – I_C



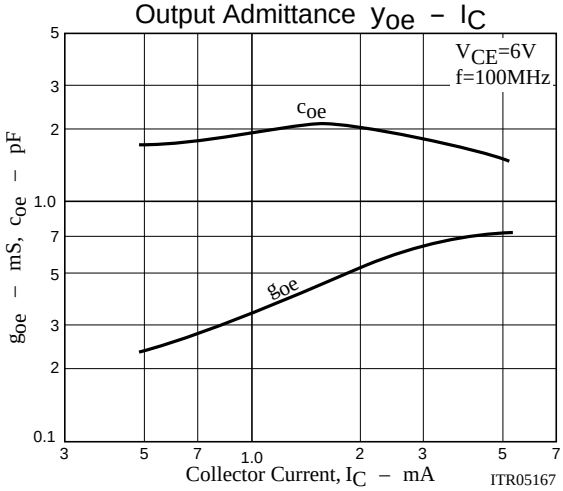
Reverse Transfer Admittance y_{re} – I_C



Forward Transfer Admittance y_{fe} – I_C



Output Admittance y_{oe} – I_C



PG, NF – I_C