NEC

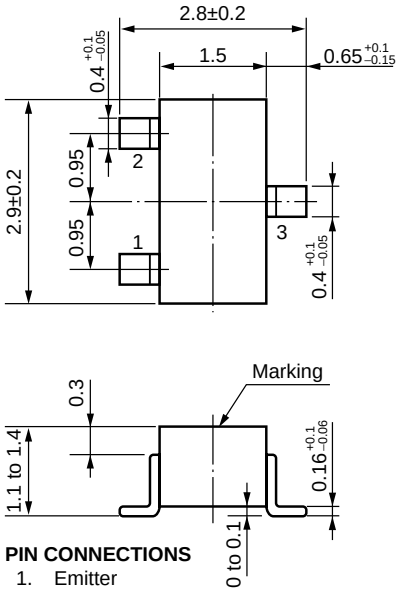
SILICON TRANSISTOR
2SC2351

HIGH FREQUENCY LOW NOISE AMPLIFIER
NPN SILICON EPITAXIAL TRANSISTOR
MINI MOLD

FEATURES

- NF 1.5 dB TYP. @ f = 1.0 GHz
- MAG 14 dB TYP. @ f = 1.0 GHz

PACKAGE DIMENSIONS
(Units: mm)



PIN CONNECTIONS
1. Emitter
2. Base
3. Collector

ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C)

Collector to Base Voltage	V_{CBO}	25	V
Collector to Emitter Voltage	V_{CEO}	12	V
Emitter to Base Voltage	V_{EBO}	3.0	V
Collector Current	I_C	70	mA
Total Power Dissipation	P_T	250	mW
Junction Temperature	T_j	150	°C
Storage Temperature	T_{stg}	–65 to +150	°C

ELECTRICAL CHARACTERISTICS (T_A = 25 °C)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	I_{CBO}			0.1	μA	V_{CB} = 15 V, I_E = 0
Emitter Cutoff Current	I_{EBO}			0.1	μA	V_{EB} = 2.0 V, I_C = 0
DC Current Gain	h_{FE}	40		200		V_{CE} = 10 V, I_C = 20 mA
Gain Bandwidth Product	f_T		4.5		GHz	V_{CE} = 10 V, I_C = 20 mA
Output Capacitance	C_{ob}		0.75	1.0	pF	V_{CB} = 10 V, I_E = 0, f = 1.0 MHz
Insertion Power Gain	$\|S_{21e}\|^2$	9	11		dB	V_{CE} = 10 V, I_C = 20 mA, f = 1.0 GHz
Noise Figure	NF		1.5	3.0	dB	V_{CE} = 10 V, I_C = 5 mA, f = 1.0 GHz
Maximum Available Gain	MAG		14		dB	V_{CE} = 10 V, I_C = 20 mA, f = 1.0 GHz

h_{FE} Classification

Class	E/P *	F/Q *
Marking	R2	R3
h_{FE}	40 to 120	100 to 200

* Old Specification / New Specification

Document No. P10350EJ3V1DS00 (3rd edition)
Date Published March 1997 N
Printed in Japan

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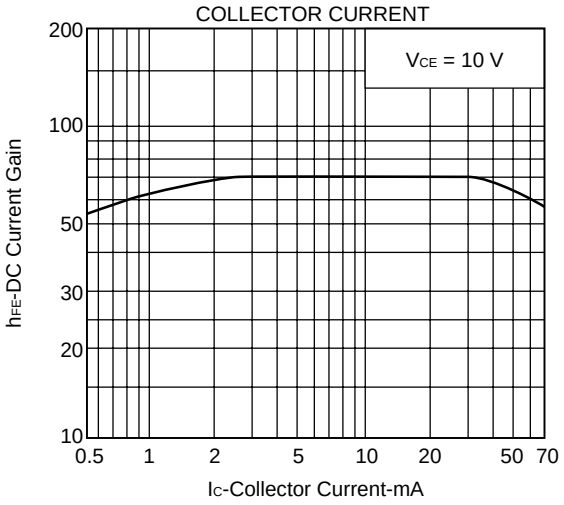
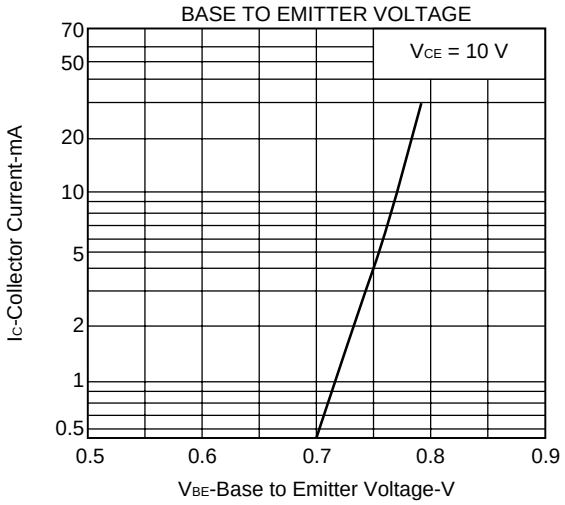
TYPICAL CHARACTERISTICS (T_A = 25 °C)

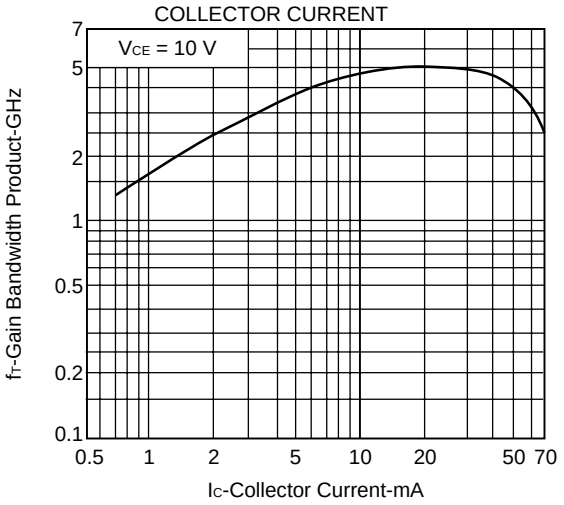
DC CURRENT GAIN vs.
COLLECTOR CURRENT



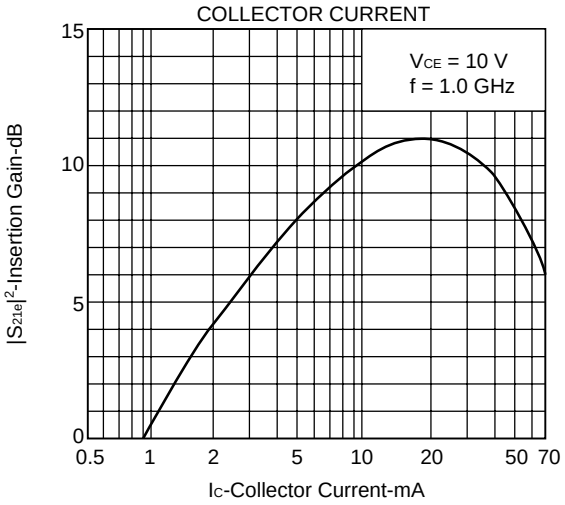
COLLECTOR CURRENT vs.
BASE TO EMITTER VOLTAGE



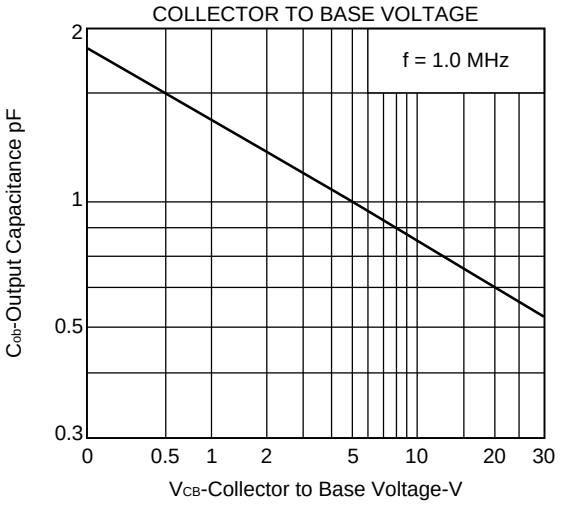
GAIN BANDWIDTH PRODUCT vs.
COLLECTOR CURRENT



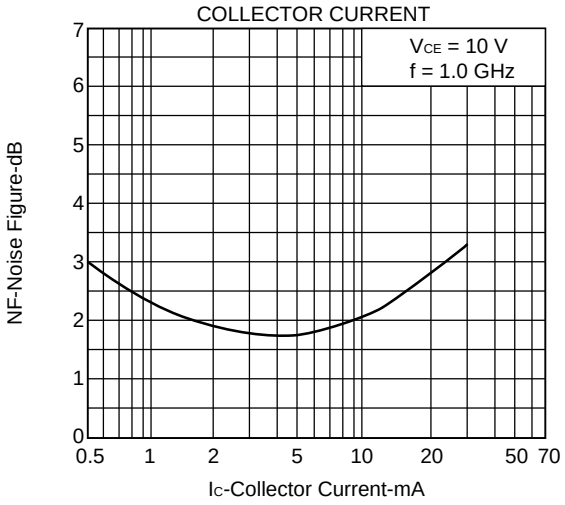
INSERTION GAIN vs.
COLLECTOR CURRENT

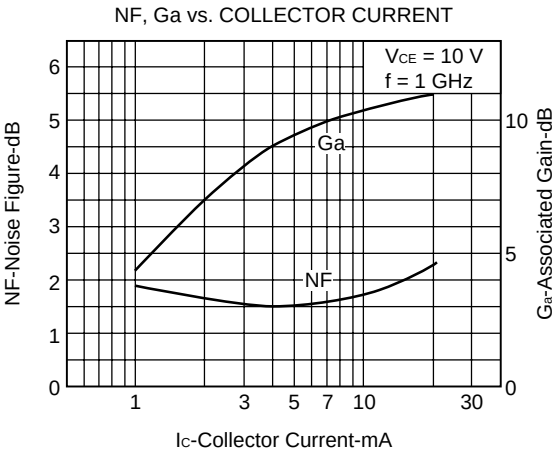


OUTPUT CAPACITANCE vs.
COLLECTOR TO BASE VOLTAGE



NOISE FIGURE.
COLLECTOR CURRENT




NF, Ga vs. COLLECTOR CURRENT
VCE = 10 V
f = 1 GHz
Ga
NF
NF-Noise Figure-dB
Ga-Associated Gain-dB
IC-Collector Current-mA
0
1
2
3
4
5
6
0
5
10
1
3
5
7
10
30

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Anti-radioactive design is not implemented in this product.

M4 96.5

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