To our customers,

Old Company Name in Catalogs and Other Documents

On April 1st, 2010, NEC Electronics Corporation merged with Renesas Technology Corporation, and Renesas Electronics Corporation took over all the business of both companies. Therefore, although the old company name remains in this document, it is a valid Renesas Electronics document. We appreciate your understanding.

Renesas Electronics website: http://www.renesas.com

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (http://www.renesas.com)

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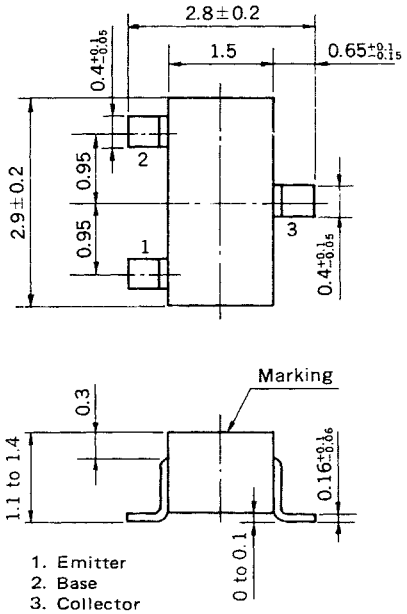
RENESAS

SILICON TRANSISTOR 2SC2758

Phase-out/Discontinued

RF AMP. FOR UHF TV TUNER NPN SILICON TRANSISTOR MINI MOLD

PACKAGE DIMENSIONS
in millimeters



The 2SC2758 is specifically designed for UHF RF amplifier applications. The 2SC2758 features high power gain, low noise, and excellent forward AGC characteristics in tiny plastic mini mold package designed for use in small type equipments especially recommended for Hybrid Integrated Circuit and other applications.

FEATURES

- Low NF high G_{pb}.
  NF = 2.8 dB TYP. G_{pb} = 18 dB TYP. (f = 900 MHz)
- Forward AGC characteristic.

ABSOLUTE MAXIMUM RATINGS (T_a = 25 °C)

Collector to Base Voltage	V_{CBO}	30	V
Collector to Emitter Voltage	V_{CEO}	25	V
Emitter to Base Voltage	V_{EBO}	3.0	V
Collector Current	I_C	20	mA
Total Power Dissipation	P_T	150	mW
Junction Temperature	T_j	125	°C
Storage Temperature	T_{stg}	−55 to +125	°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} = 25 V, I_E = 0
DC Current Gain	h_{FE} *	60	120	240		V_{CE} = 10 V, I_C = 3.0 mA
Gain Bandwidth Product	f_T	750	1000		MHz	V_{CE} = 10 V, I_E = −3.0 mA
Output Capacitance	C_{ob}		0.6	0.8	pF	V_{CB} = 10 V, I_E = 0, f = 1 MHz
Noise Figure	NF**		2.8	4.5	dB	V_{CB} = 10 V, I_E = −3.0 mA, f = 900 MHz
Power Gain	G_{pb}**	14			dB	V_{CB} = 10 V, I_E = −3.0 mA, f = 900 MHz
AGC Current	I_{AGC}	See h_{FE}, I_{AGC} Classifications bellow			mA	I_E for which $G_{pbAGC} = G_{pb}$−30 dB

* Pulse Measurement PW ≦ 350 μs, Duty Cycle ≦ 2 %

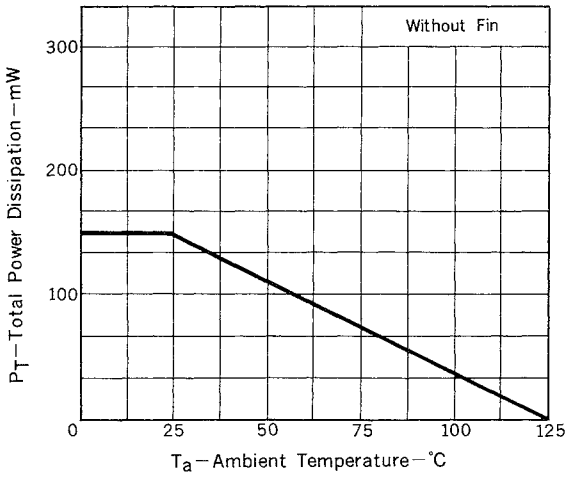
**See Test Circuit

I_{AGC}, h_{FE} Classifications

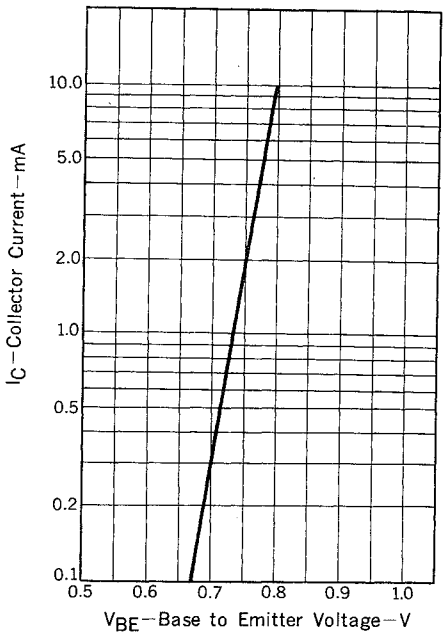
Marking	U14	U15	U16	U17	U18	UNIT
I_{AGC}	–	−8 to −11	–	–	–	mA
h_{FE}	–	–	60 to 120	90 to 180	120 to 240	–

TYPICAL CHARACTERISTICS (T_a = 25 °C)

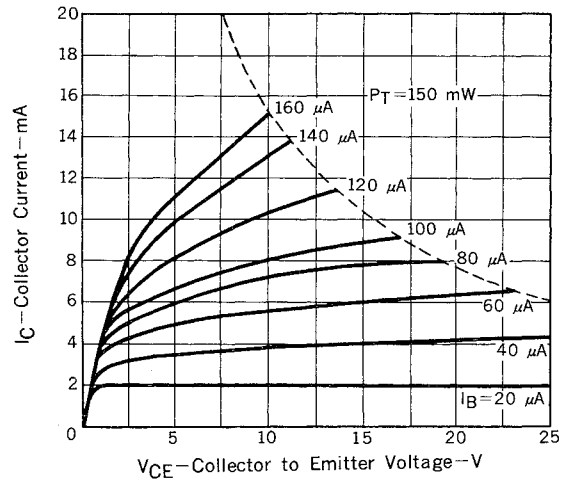
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



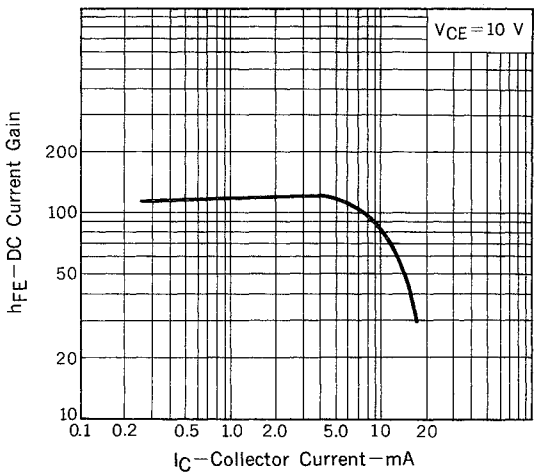
COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



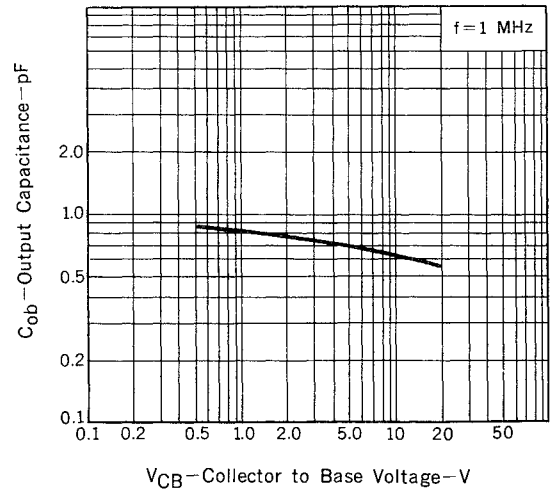
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



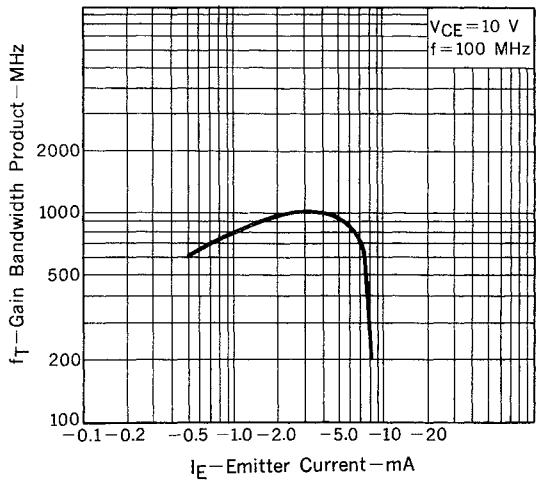
DC CURRENT GAIN vs. COLLECTOR CURRENT



OUTPUT CAPACITANCE vs. COLLECTOR TO BASE VOLTAGE



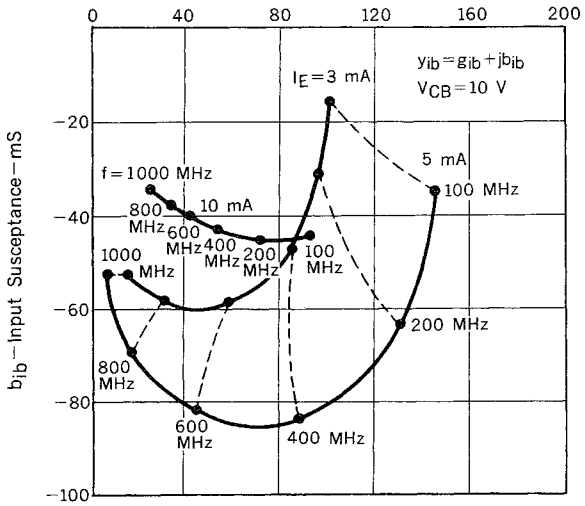
GAIN BANDWIDTH PRODUCT vs. EMITTER CURRENT



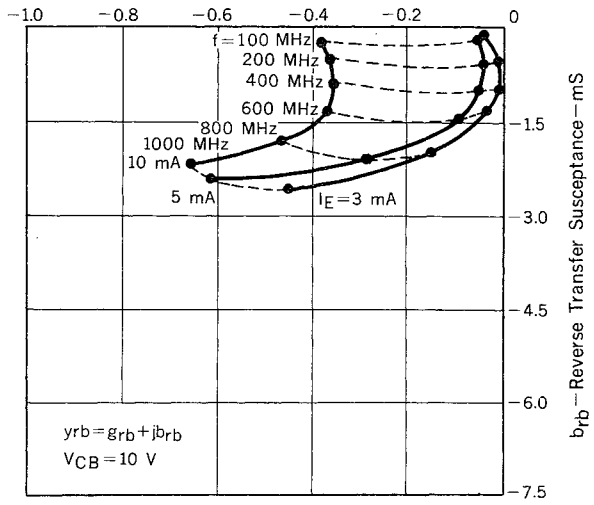
Phase-out/Discontinued

TYPICAL CHARACTERISTICS of "Y" PARAMETERS

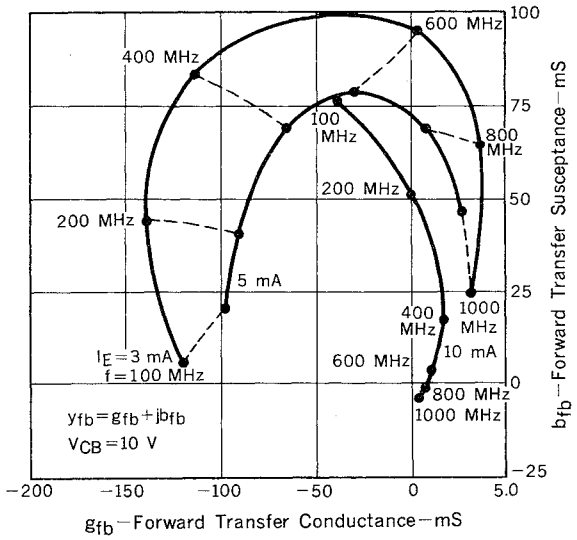
INPUT ADMITTANCE (y_{ib})
vs. FREQUENCY



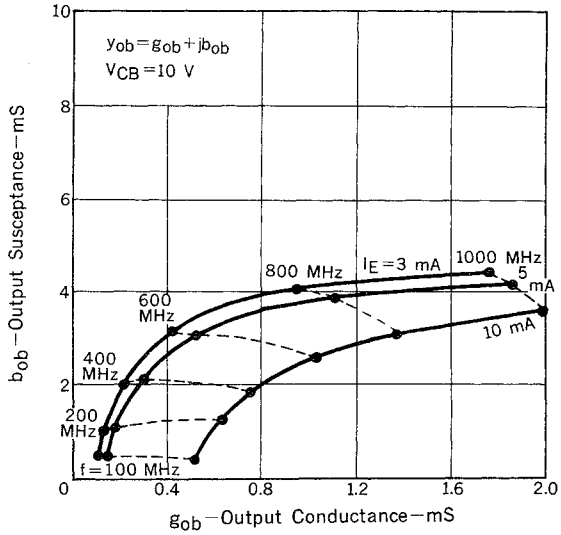
REVERSE TRANSFER ADMITTANCE (y_{rb})
vs. FREQUENCY



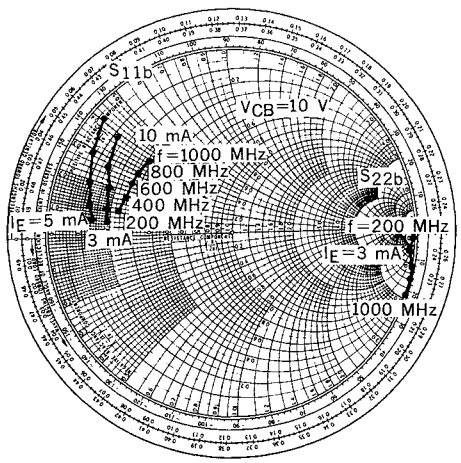
FORWARD TRANSFER ADMITTANCE (y_{fb})
vs. FREQUENCY



OUTPUT ADMITTANCE (y_{ob})
vs. FREQUENCY

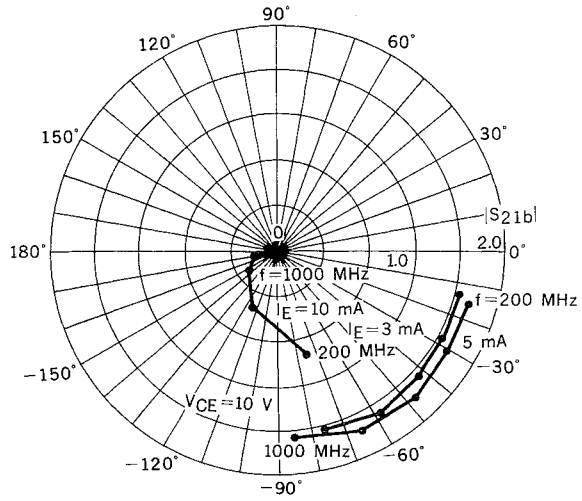


S_{11} vs. f, S_{22} vs. f

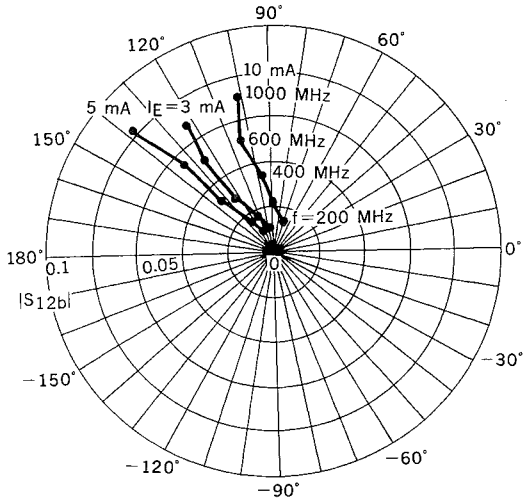


Phase-out/Discontinued

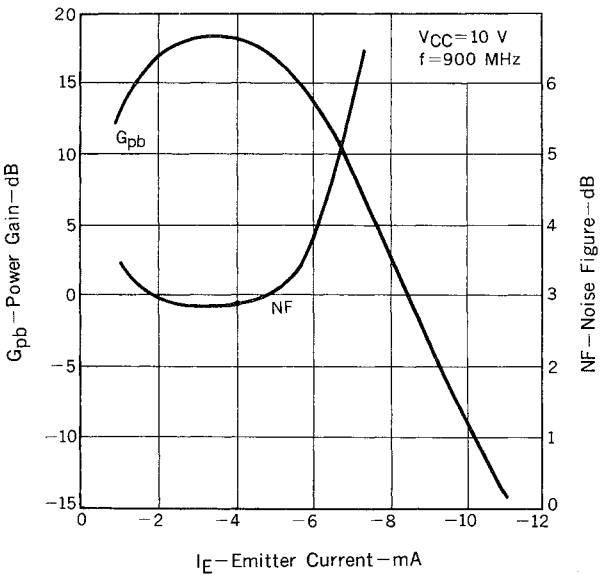
S_{21b} vs. f



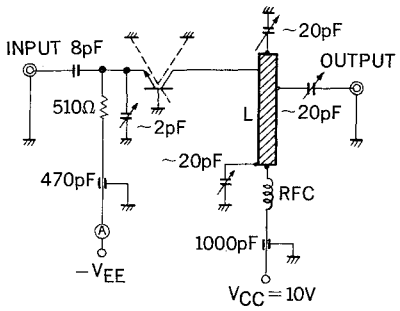
S_{12b} vs. f



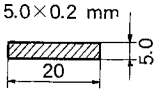
NOISE FIGURE, POWER GAIN vs. EMITTER CURRENT



900 MHz G_{pb} NF TEST CIRCUIT



L : 20×5.0×0.2 mm



TC−1432A
September 1988M
Printed in Japan