

To our customers,

Old Company Name in Catalogs and Other Documents

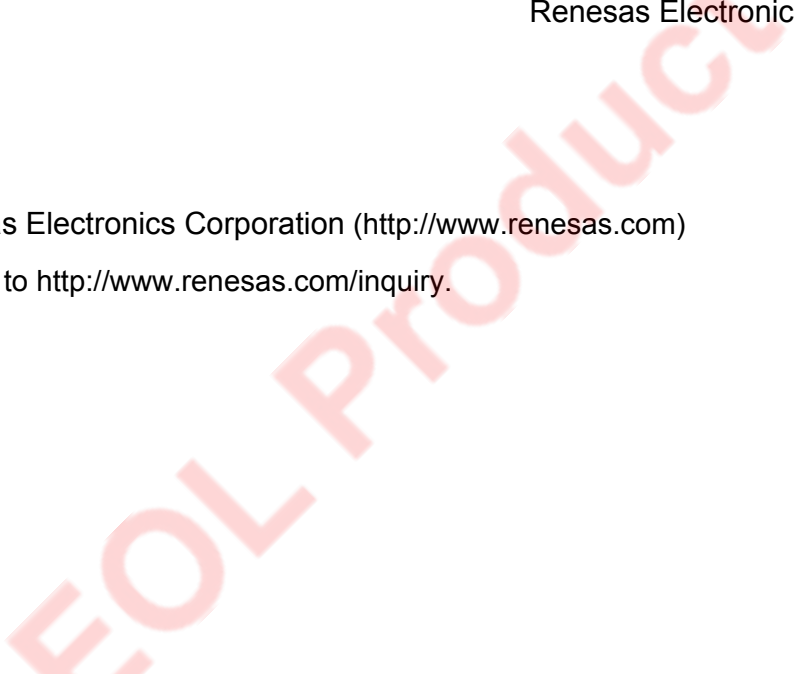
On April 1st, 2010, NEC Electronics Corporation merged with Renesas Technology Corporation, and Renesas Electronics Corporation took over all the business of both companies. Therefore, although the old company name remains in this document, it is a valid Renesas Electronics document. We appreciate your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

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

April 1st, 2010
Renesas Electronics Corporation

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

Send any inquiries to <http://www.renesas.com/inquiry>.

The Renesas logo, consisting of a stylized 'R' followed by the word 'RENESAS' in a bold, sans-serif font.

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DATA SHEET

NEC

SILICON TRANSISTOR 2SA812A

PNP SILICON EPITAXIAL TRANSISTOR MINI MOLD

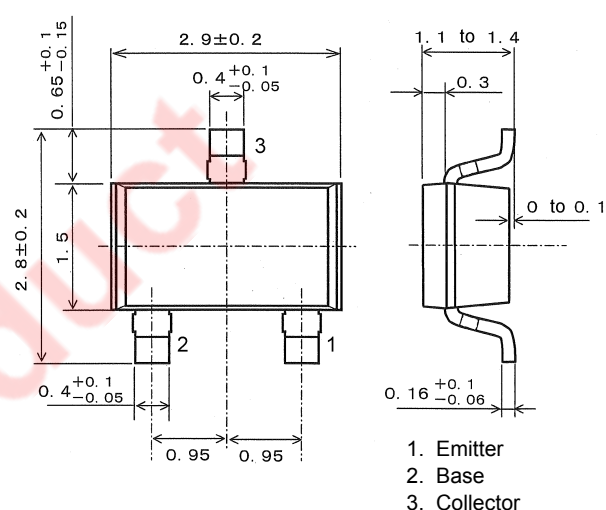
FEATURES

- Complementary to 2SC1623A
- High DC Current Gain: $h_{FE} = 200$ TYP. ($V_{CE} = -6.0$ V, $I_C = -1.0$ mA)
- High Voltage: $V_{CEO} = -50$ V

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$)

Collector to Base Voltage	V_{CBO}	-60	V
Collector to Emitter Voltage	V_{CEO}	-50	V
Emitter to Base Voltage	V_{EBO}	-5.0	V
Collector Current (DC)	I_C	-100	mA
Total Power Dissipation	P_T	200	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to +150	$^\circ\text{C}$

PACKAGE DRAWING (Unit: mm)



ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cut-off Current	I_{CBO}			-0.1	μA	$V_{CB} = -60$ V, $I_E = 0$ A
Emitter Cut-off Current	I_{EBO}			-0.1	μA	$V_{EB} = -5.0$ V, $I_C = 0$ A
DC Current Gain	h_{FE}	90	200	600		$V_{CE} = -6.0$ V, $I_C = -1.0$ mA ^{Note}
Collector Saturation Voltage	$V_{CE(sat)}$		-0.18	-0.3	V	$I_C = -100$ mA, $I_B = -10$ mA
Base to Emitter Voltage	V_{BE}	-0.58	-0.62	-0.68	V	$V_{CE} = 6.0$ V, $I_C = -1.0$ mA
Gain Bandwidth Product	f_T		180		MHz	$V_{CE} = -6.0$ V, $I_E = 10$ mA
Output Capacitance	C_{ob}		4.5		pF	$V_{CB} = -10$ V, $I_E = 0$ A, $f = 1.0$ MHz

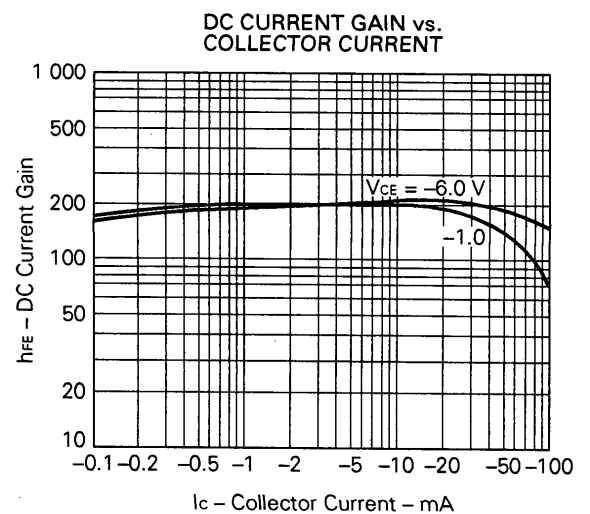
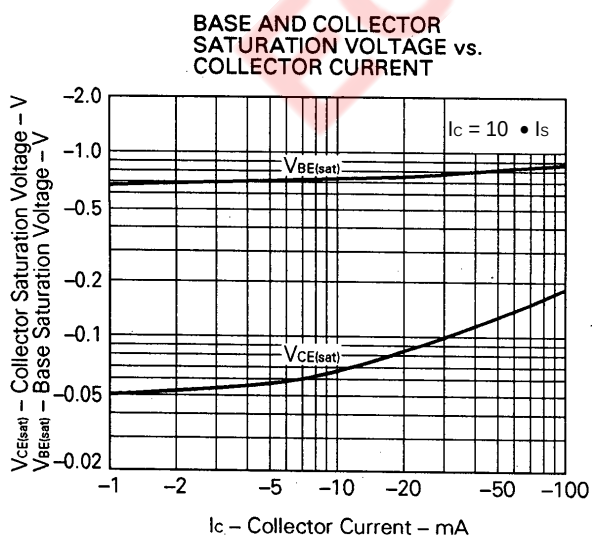
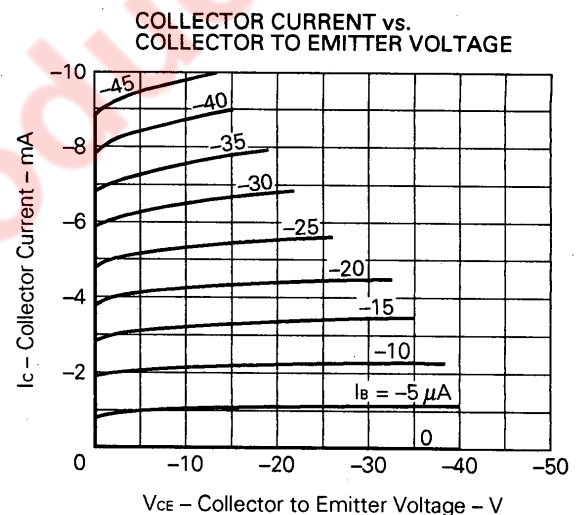
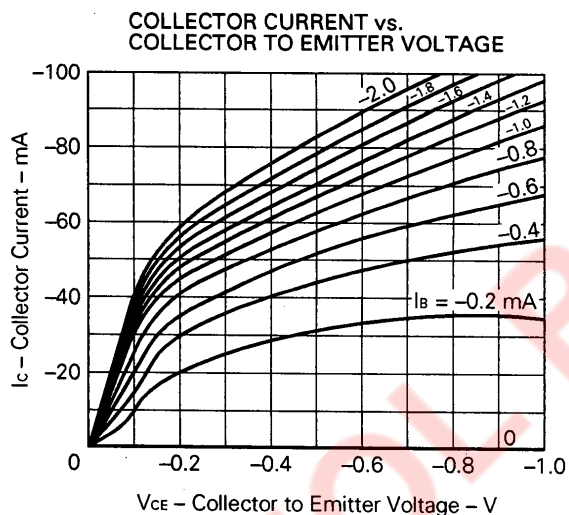
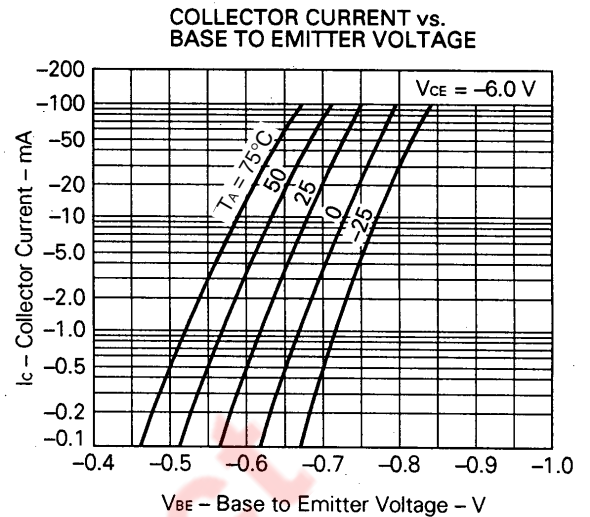
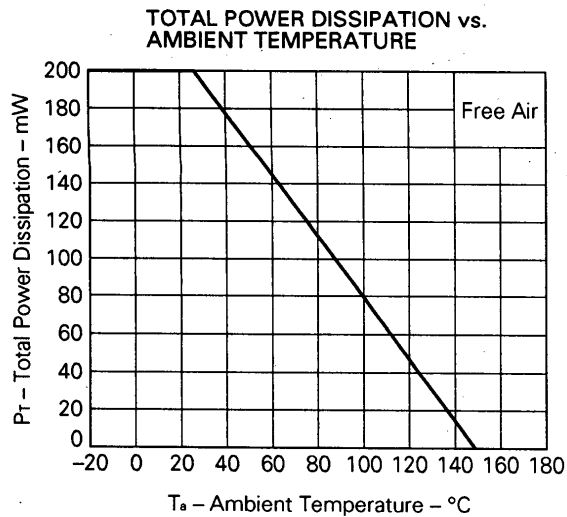
Note Pulsed: $PW \leq 350 \mu\text{s}$, Duty Cycle $\leq 2\%$

h_{FE} CLASSIFICATION

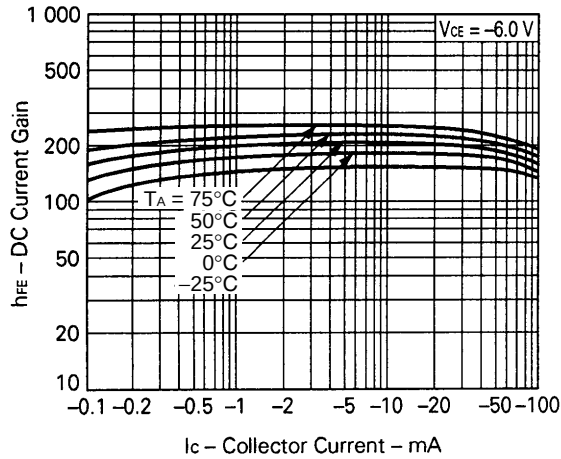
Marking	M4	M5	M6	M7
h_{FE}	90 to 180	135 to 270	200 to 400	300 to 600

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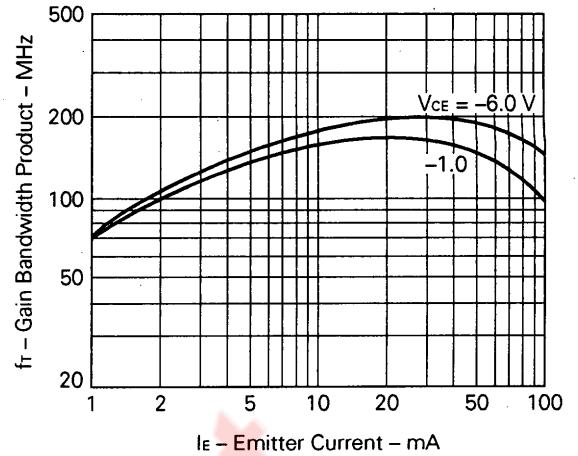
<R> TYPICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)



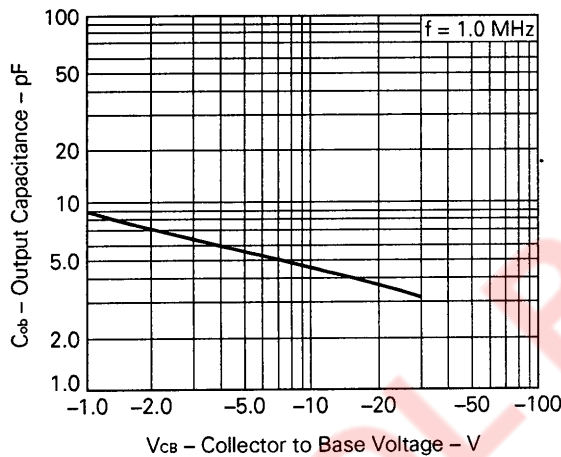
DC CURRENT GAIN vs.
COLLECTOR CURRENT



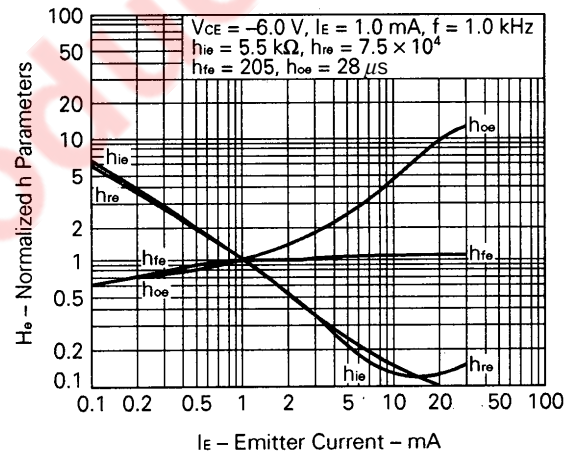
GAIN BANDWIDTH PRODUCT vs.
EMITTER CURRENT



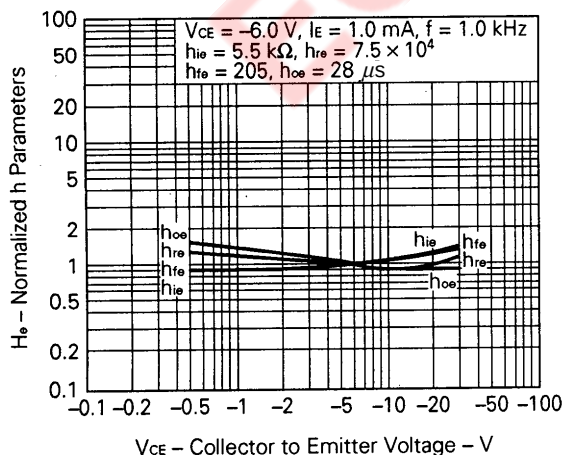
OUTPUT CAPACITANCE vs.
REVERSE VOLTAGE



NORMALIZED h PARAMETER vs.
EMITTER CURRENT



NORMALIZED h PARAMETER vs.
COLLECTOR TO EMITTER VOLTAGE



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