

To our customers,

Old Company Name in Catalogs and Other Documents

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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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PNP SILICON EPITAXIAL TRANSISTOR

2SB1571

PNP SILICON EPITAXIAL TRANSISTOR

FEATURES

- Low $V_{CE(sat)}$: $V_{CE(sat)1} \leq -0.35$ V
- Complementary to 2SD2402

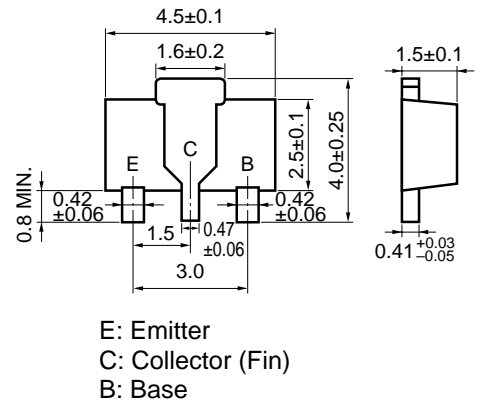
ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$)

Collector to Base Voltage	V_{CBO}	-50	V
Collector to Emitter Voltage	V_{CEO}	-30	V
Emitter to Base Voltage	V_{EBO}	-6.0	V
Collector Current (DC)	$I_{C(DC)}$	-5.0	A
Collector Current (pulse) ^{Note1}	$I_{C(pulse)}$	-8.0	A
Base Current (DC)	$I_{B(DC)}$	-0.2	A
Base Current (pulse) ^{Note1}	$I_{B(pulse)}$	-0.4	A
Total Power Dissipation ^{Note2}	P_T	2.0	W
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to + 150	$^\circ\text{C}$

Notes 1. $PW \leq 10$ ms, Duty Cycle $\leq 50\%$

2. When mounted on ceramic substrate of $16\text{ cm}^2 \times 0.7$ mm

PACKAGE DRAWING (Unit: mm)



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

CHARACTERISTICS	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB} = -50$ V, $I_E = 0$			-100	nA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = -6.0$ V, $I_C = 0$			-100	nA
DC Current Gain ^{Note}	h_{FE1}	$V_{CE} = -1.0$ V, $I_C = -1.0$ A	80			—
	h_{FE2}	$V_{CE} = -1.0$ V, $I_C = -2.0$ A	100	200	400	—
Base to Emitter Voltage ^{Note}	V_{BE}	$V_{CE} = -1.0$ V, $I_C = -0.1$ A	-0.6	-0.665	-0.7	V
Collector Saturation Voltage ^{Note}	$V_{CE(sat)1}$	$I_C = -3.0$ A, $I_B = -0.15$ A		-0.17	-0.35	V
Collector Saturation Voltage ^{Note}	$V_{CE(sat)2}$	$I_C = -5.0$ A, $I_B = -0.25$ A		-0.28	-0.55	V
Base Saturation Voltage ^{Note}	$V_{BE(sat)}$	$I_C = -3.0$ A, $I_B = -0.15$ A		-0.89	-1.2	V
Gain Bandwidth Product	f_T	$V_{CE} = -10$ V, $I_E = 0.5$ A		150		MHz
Output Capacitance	C_{ob}	$V_{CB} = -10$ V, $I_E = 0$, $f = 1.0$ MHz		100		pF
Turn-on Time	t_{on}	$I_C = -2.0$ A, $V_{CC} = -10$ V,		265		ns
Storage Time	t_{stg}	$R_L = 5.0\ \Omega$, $I_{B1} = -I_{B2} = -0.1$ A,		350		ns
Fall Time	t_f			50		ns

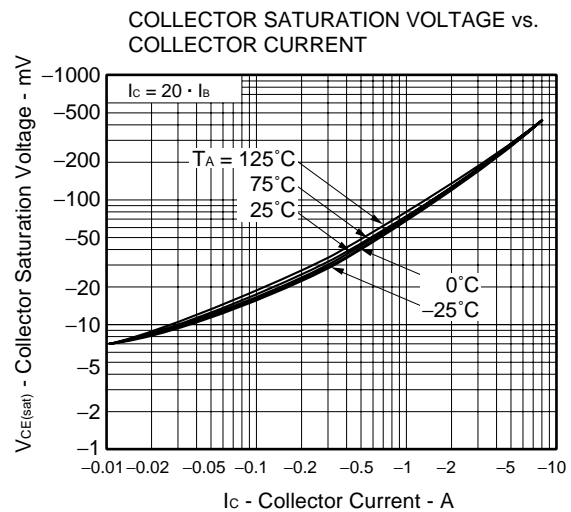
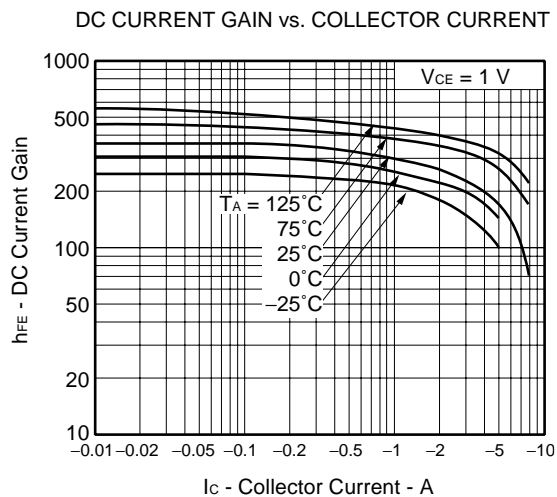
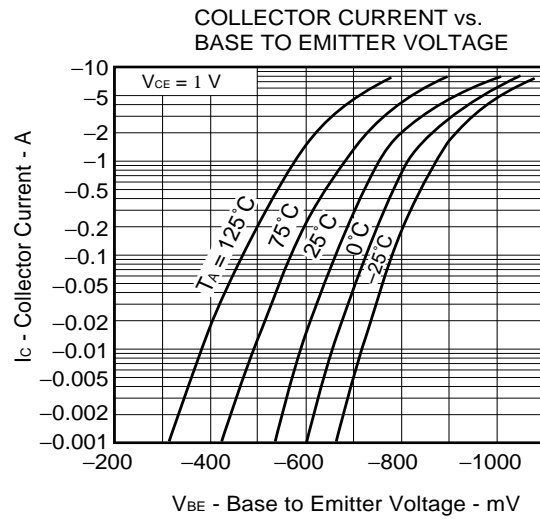
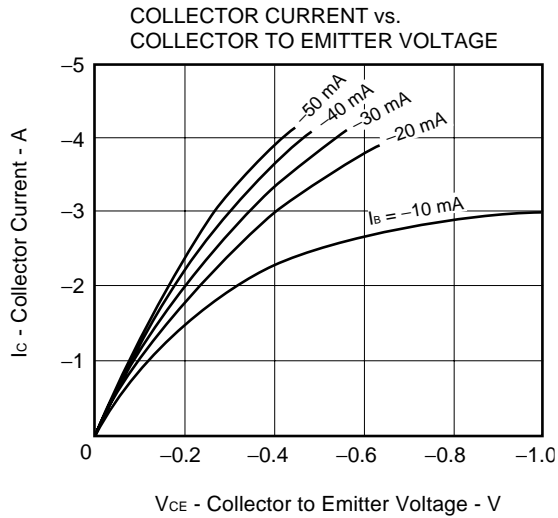
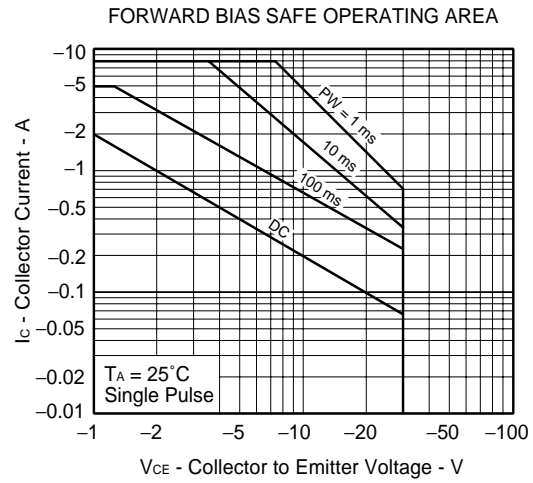
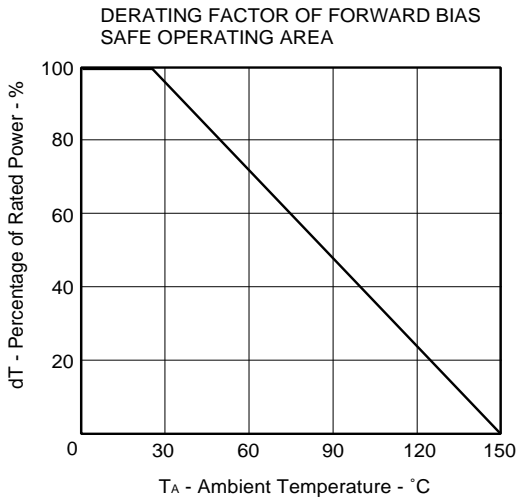
Note Pulsed: $PW \leq 350\ \mu\text{s}$, Duty Cycle $\leq 2\%$

h_{FE} CLASSIFICATION

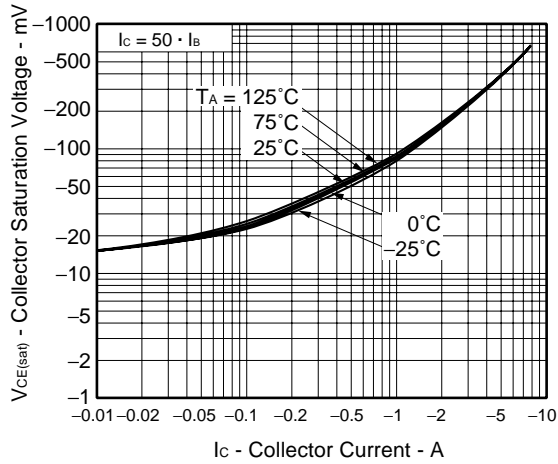
Marking	HX	HY	HZ
h_{FE2}	100 to 200	160 to 320	200 to 400

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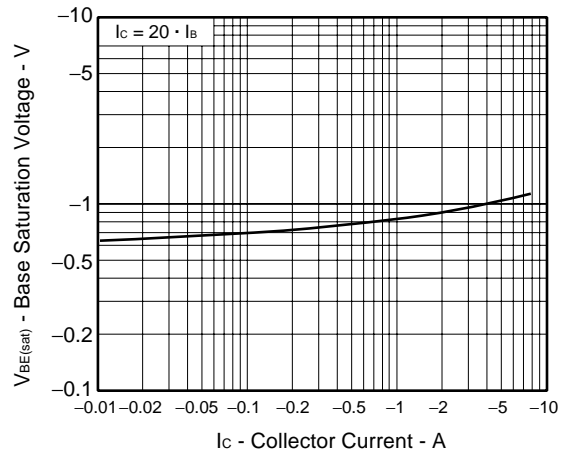
TYPICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)



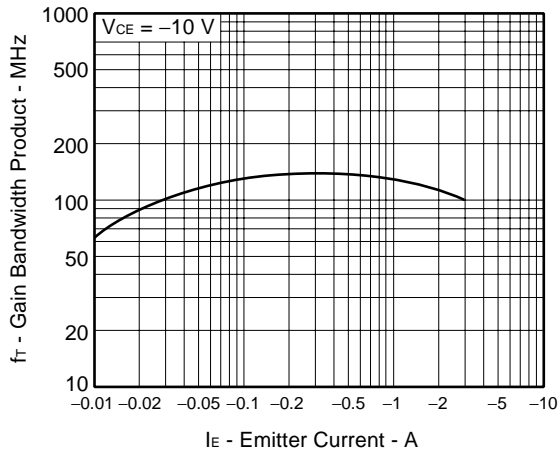
COLLECTOR SATURATION VOLTAGE vs.
COLLECTOR CURRENT



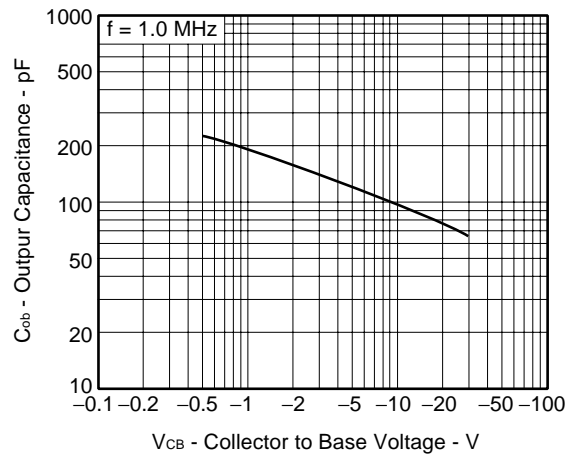
BASE SATURATION VOLTAGE vs.
COLLECTOR CURRENT



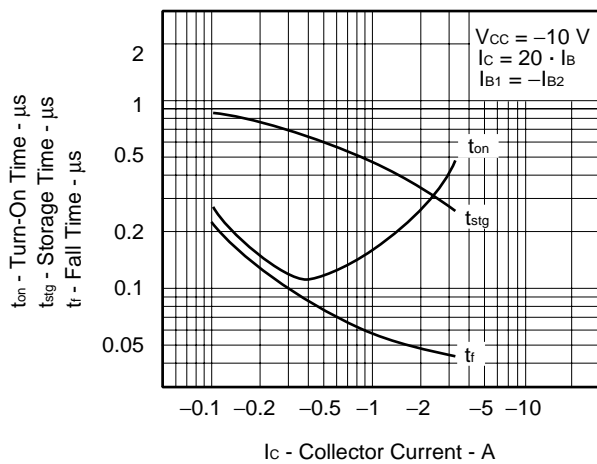
GAIN BANDWIDTH PRODUCT vs.
EMITTER CURRENT



OUTPUT CAPACITANCE vs.
REVERSE VOLTAGE



SWITCHING CHARACTERISTICS



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