NEC

PNP SILICON EPITAXIAL TRANSISTOR

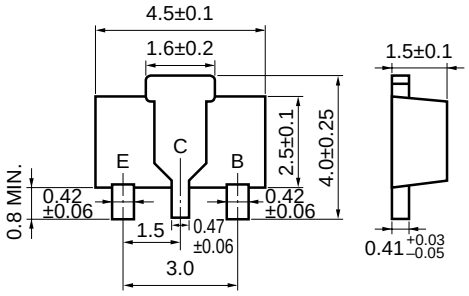
2SB1571

PNP SILICON EPITAXIAL TRANSISTOR

FEATURES

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

PACKAGE DRAWING (Unit: mm)



E: Emitter
C: Collector (Fin)
B: Base

ABSOLUTE MAXIMUM RATINGS (T_A = 25°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	°C
Storage Temperature Range	T_{stg}	–55 to + 150	°C

Notes 1. PW ≤ 10 ms, Duty Cycle ≤ 50%

2. When mounted on ceramic substrate of 16 cm^2 x 0.7 mm

ELECTRICAL CHARACTERISTICS (T_A = 25°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 Ω, I_{B1} = –I_{B2} = –0.1 A,		350		ns
Fall Time	t_f			50		ns

Note Pulsed: PW ≤ 350 μs, Duty Cycle ≤ 2%

h_{FE} CLASSFICATION

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

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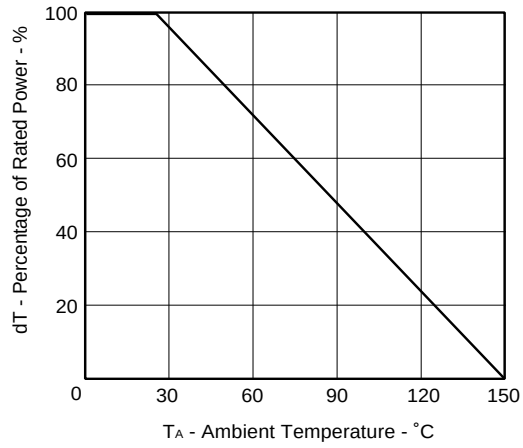
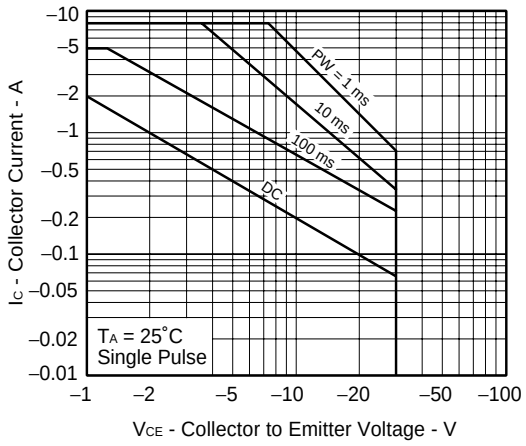
TYPICAL CHARACTERISTICS (T_A = 25°C)

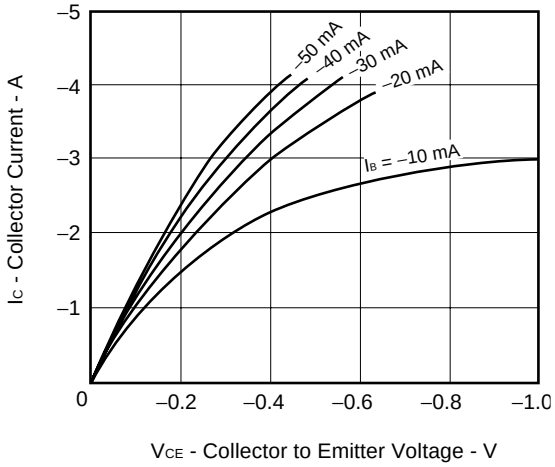
DERATING FACTOR OF FORWARD BIAS SAFE OPERATING AREA



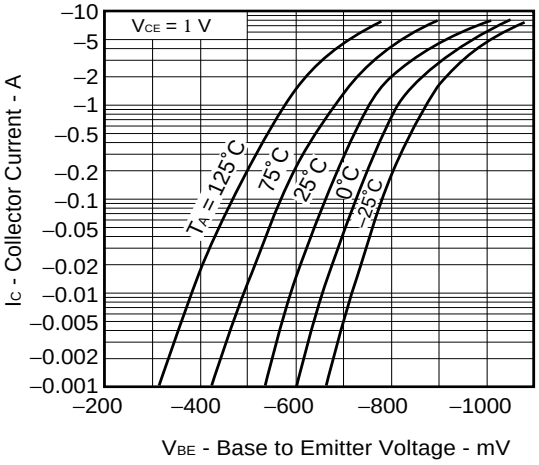
FORWARD BIAS SAFE OPERATING AREA



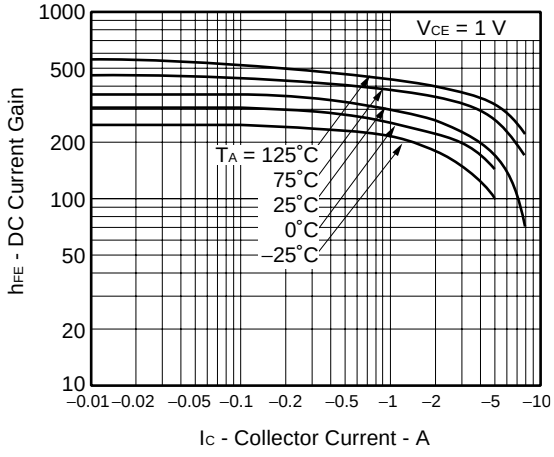
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



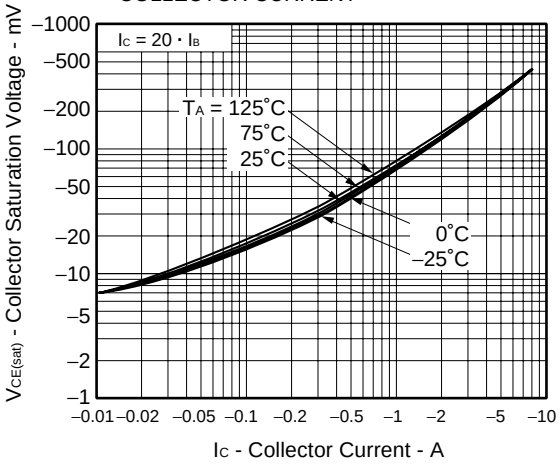
COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



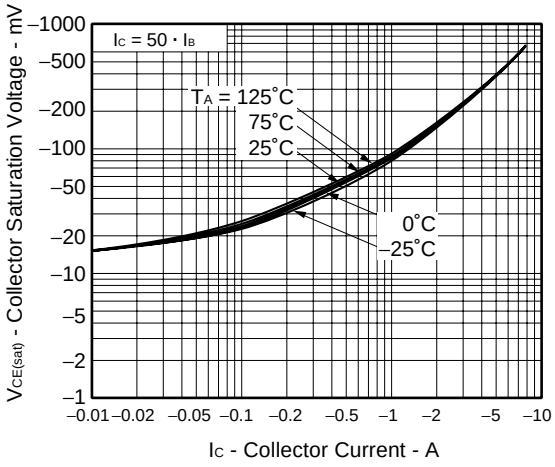
DC CURRENT GAIN vs. COLLECTOR CURRENT



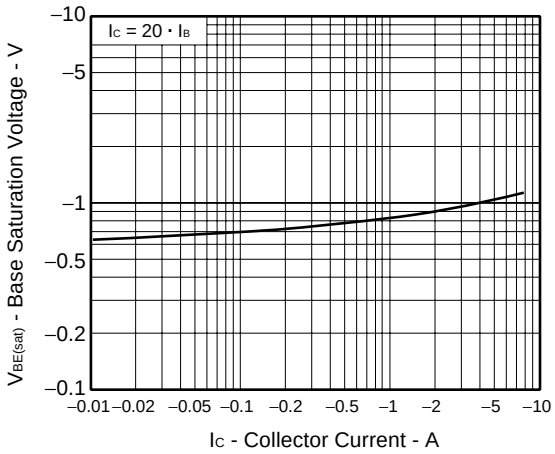
COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



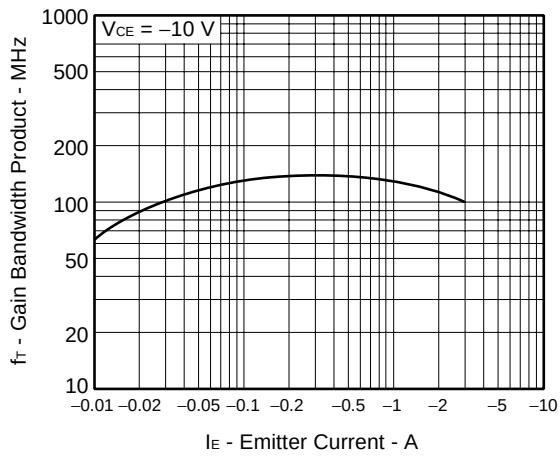
COLLECTOR SATURATION VOLTAGE vs.
COLLECTOR CURRENT



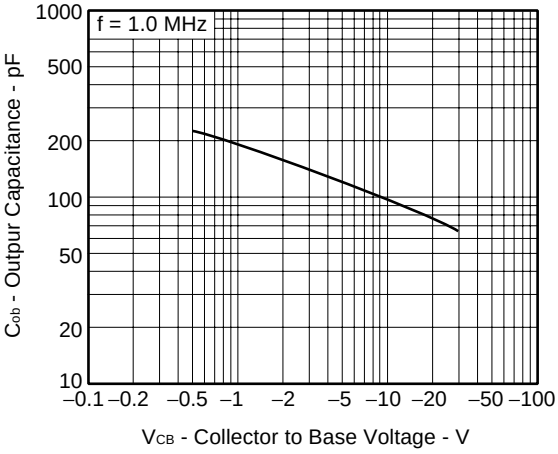
BASE SATURATION VOLTAGE vs.
COLLECTOR CURRENT



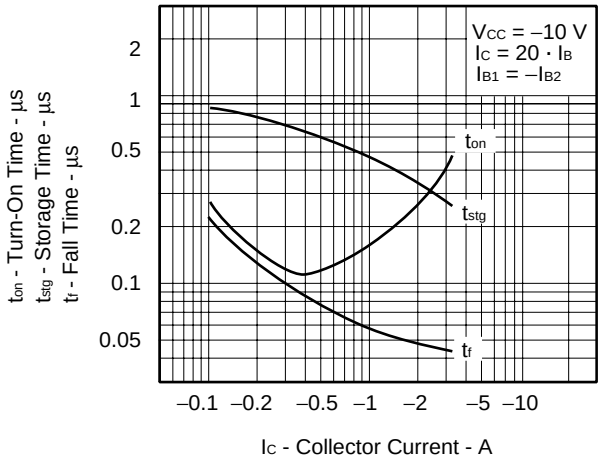
GAIN BANDWIDTH PRODUCT vs.
EMITTER CURRENT



OUTPUT CAPACITANCE vs.
REVERSE VOLTAGE



SWITCHING CHARACTERISTICS



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