

PNP SILICON EPITAXIAL TRANSISTOR FOR LOW-FREQUENCY POWER AMPLIFIERS AND MID-SPEED SWITCHING

The 2SA1897 features a low saturation voltage and is available for high current control in small dimension. This transistor is ideal for high efficiency DC/DC converters due to fast switching speed.

FEATURES

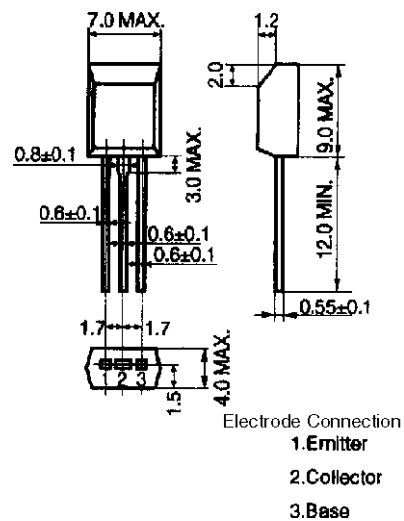
- High current capacitance
- Low collector saturation voltage and high h_{FE}
- Insulation type package supportable for radial taping

QUALITY GRADES

- Standard

Please refer to "Quality Grades on NEC Semiconductor Devices" (Document No. C11531E) published by NEC Corporation to know the specification of quality grade on the devices and its recommended applications.

PACKAGE DRAWING (UNIT: mm)



ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

Parameter	Symbol	Conditions	Ratings	Unit
Collector to base voltage	V_{CBO}		-30	V
Collector to emitter voltage	V_{CEO}		-20	V
Emitter to base voltage	V_{EBO}		-10	V
Collector current (DC)	$I_{C(DC)}$	$T_c = 25^\circ\text{C}$	-5.0	A
Collector current (pulse)	$I_{C(pulse)}$	$PW \leq 10 \text{ ms}$, duty cycle $\leq 50 \%$ $T_c = 25^\circ\text{C}$	-8.0	A
Base current (DC)	$I_{B(DC)}$		-0.5	A
Total power dissipation	P_T		1.0	W
Total power dissipation	P_T	$T_c = 25^\circ\text{C}$	6.0	W
Junction temperature	T_j		150	°C
Storage temperature	T_{stg}		-55 to +150	°C

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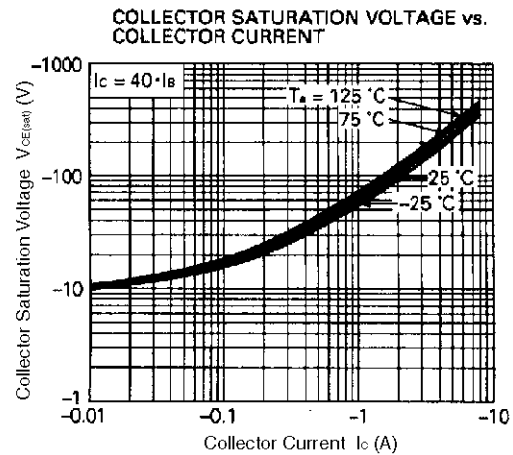
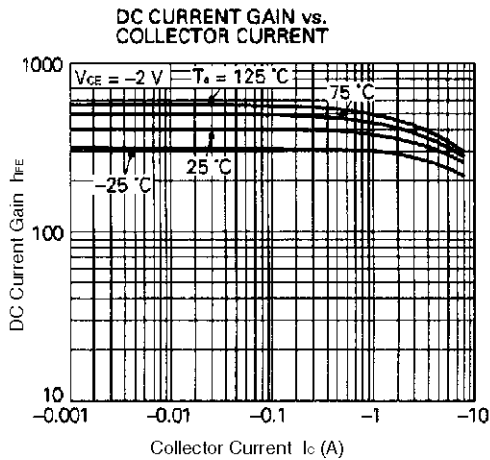
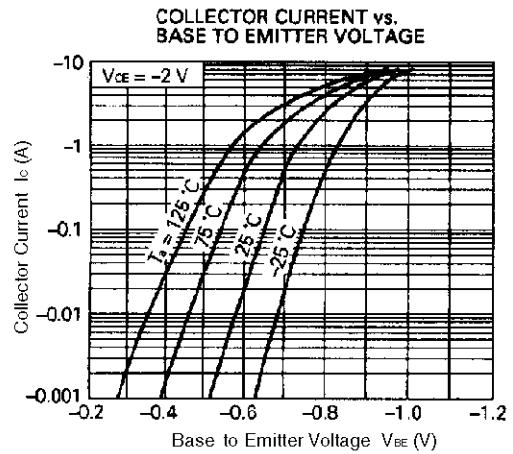
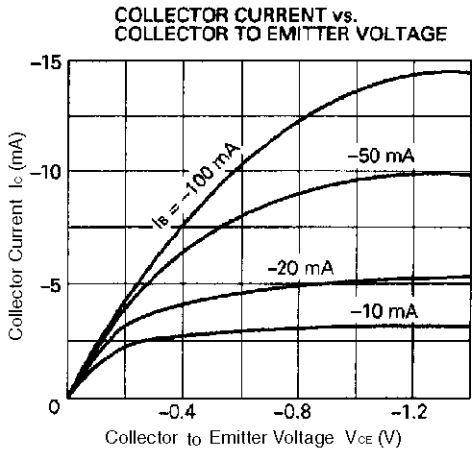
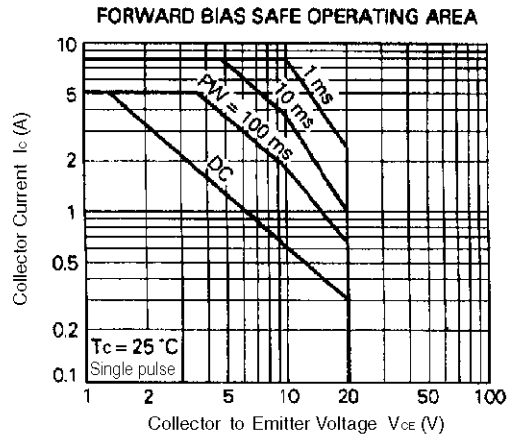
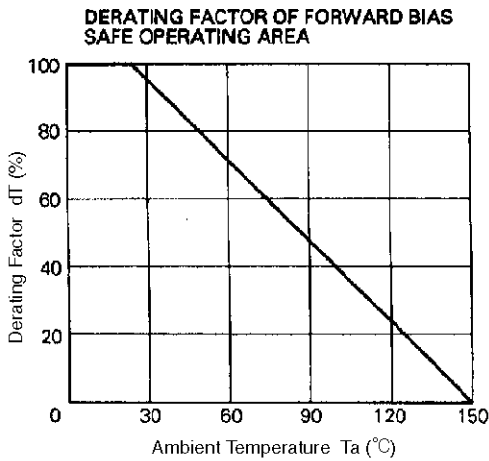
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

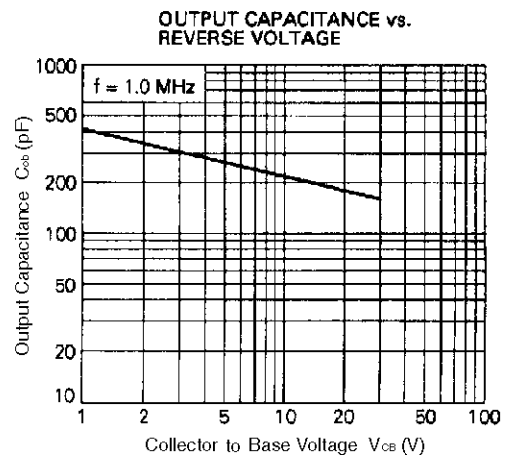
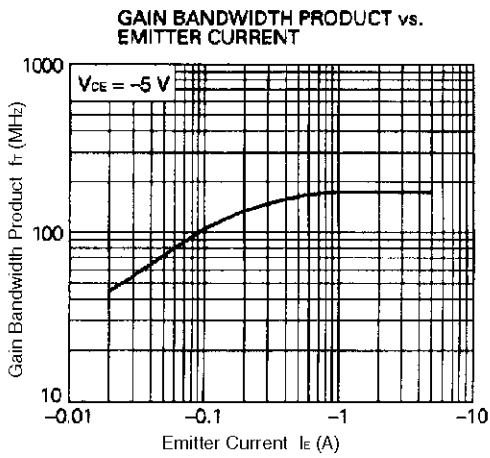
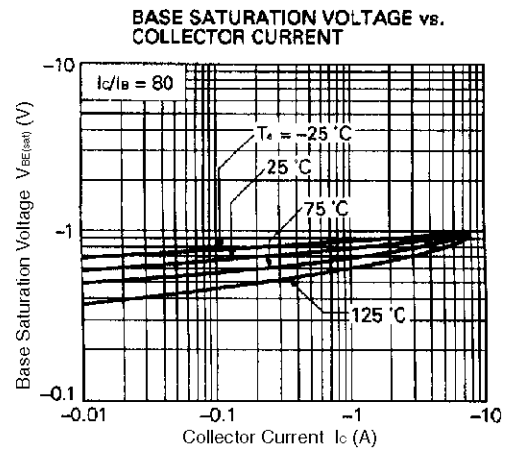
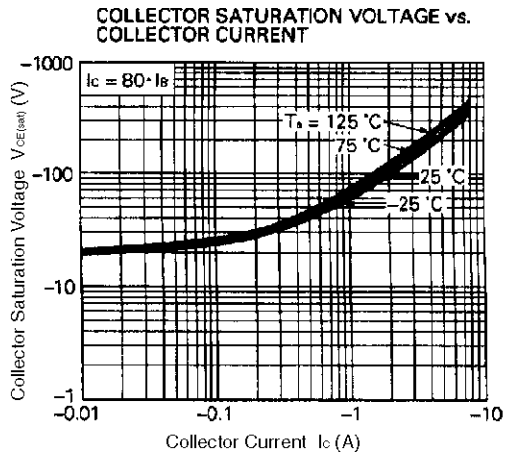
Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = -20\text{ V}, I_E = 0$			1.0	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = -8.0\text{ V}, I_C = 0$			1.0	μA
DC current gain	h_{FE1}	$V_{CE} = -2.0\text{ V}, I_C = -0.5\text{ A}$	200		600	–
DC current gain	h_{FE2}	$V_{CE} = -2.0\text{ V}, I_C = -4.0\text{ A}$	160			–
Collector saturation voltage	$V_{CE(sat)}$	$I_C = -4.0\text{ A}, I_B = -50\text{ mA}$		-230	-250	mV
Base saturation voltage	$V_{BE(sat)}$	$I_C = -4.0\text{ A}, I_B = -50\text{ mA}$		-0.9	-1.2	V
Gain bandwidth product	f_T	$V_{CE} = -5.0\text{ V}, I_E = 1.5\text{ A}$		180		MHz
Output capacitance	C_{ob}	$V_{CB} = -10\text{ V}, I_E = 0, f = 1.0\text{ MHz}$		220		pF
Turn-on time	t_{on}	$I_C = -5.0\text{ A}, V_{CC} = -10\text{ V}$ $I_{B1} = -I_{B2} = -125\text{ mA},$ $R_L = 2.0\ \Omega,$		400		ns
Storage time	t_{stg}			300		ns
Fall time	t_f			60		ns

h_{FE} CLASSIFICATION

Marking	L	K
h_{FE1}	200 to 400	300 to 600

TYPICAL CHARACTERISTICS (Ta = 25°C)





[MEMO]

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