

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

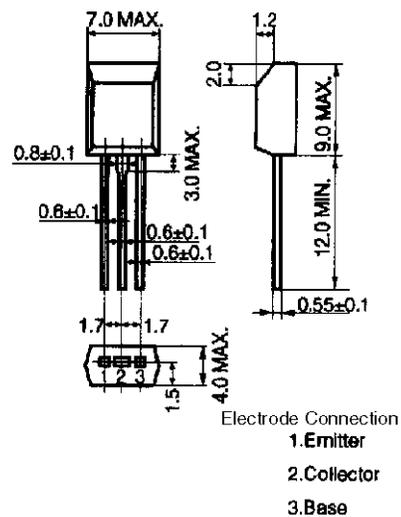
- High current capacitance
- Low collector saturation voltage and high h_{FE}
- Insulation type package supportable for radial taping

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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 Not all devices/types available in every country. Please check with local NEC representative for availability and additional information.

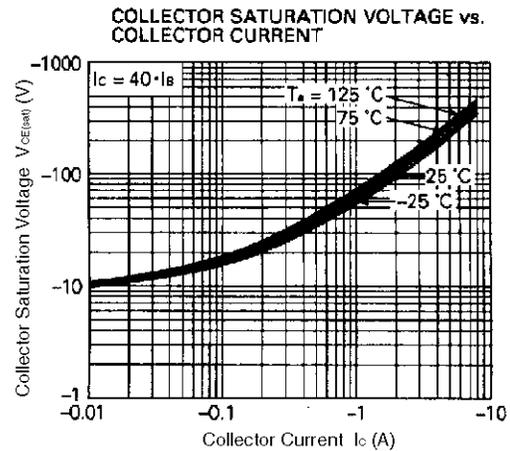
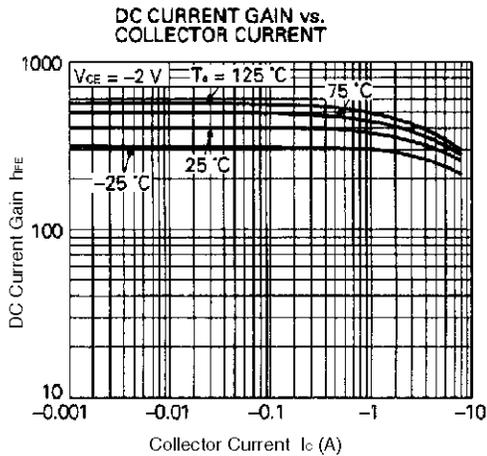
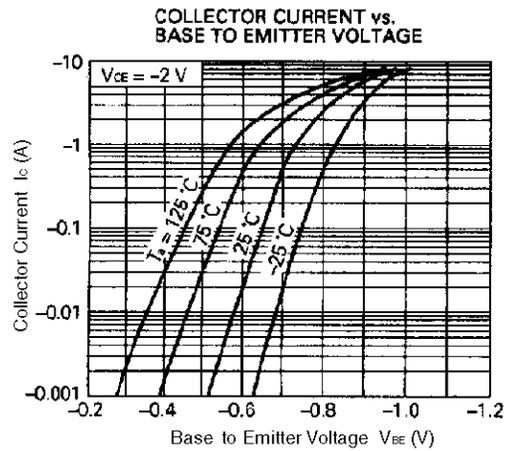
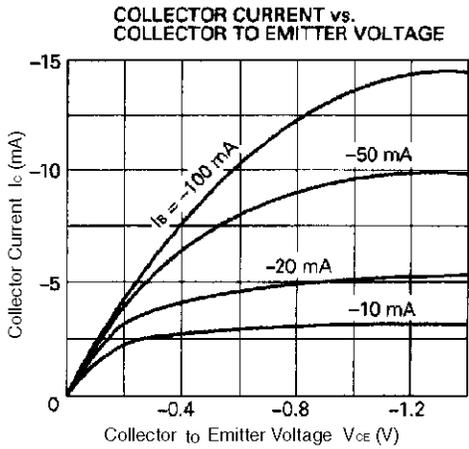
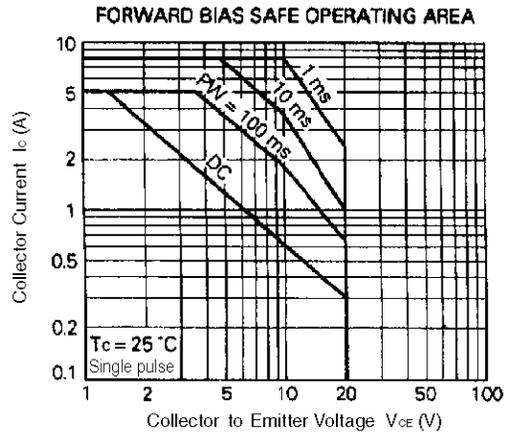
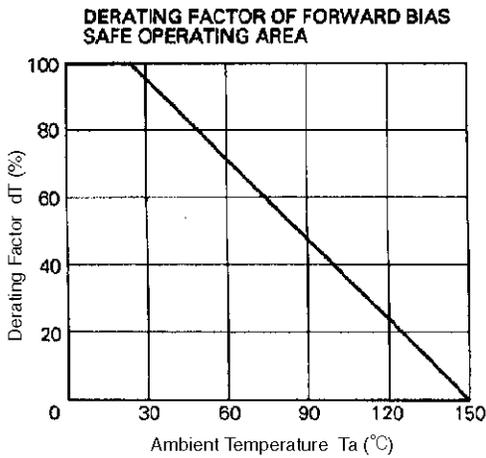
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

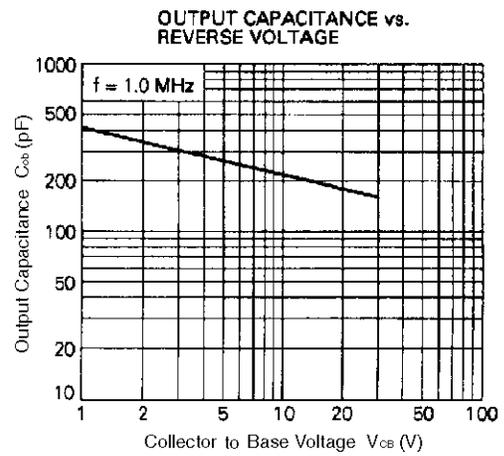
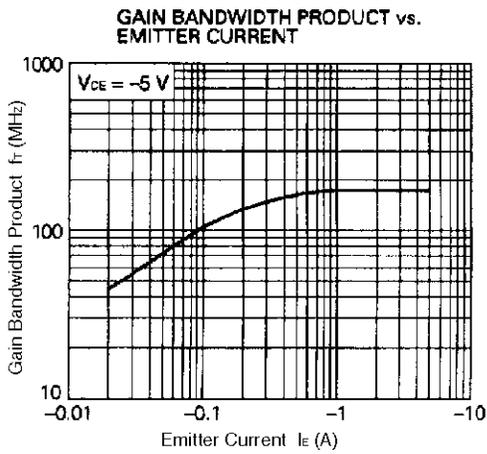
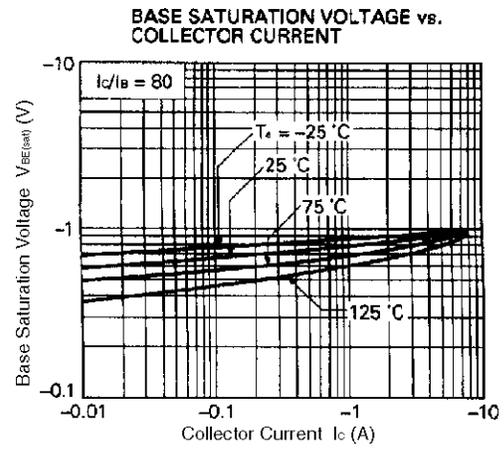
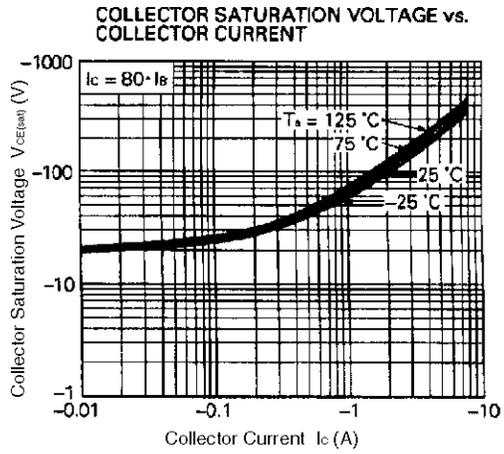
| Parameter | Symbol | Conditions | MIN. | TYP. | MAX. | Unit |
|------------------------------|---------------|--|------|------|------|---------------|
| Collector cutoff current | I_{CBO} | $V_{CB} = -20\text{ V}, I_E = 0$ | | | 1.0 | μA |
| Emitter cutoff current | I_{EBO} | $V_{EB} = -8.0\text{ V}, I_C = 0$ | | | 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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