

| | | |
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| SANYO | No.2555A | 2SB1302 |
| | PNP Epitaxial Planar Silicon Transistor High-Current Switching Applications | |

Applications

- . DC-DC converters, motor drivers, relay drivers, lamp drivers

Features

- . Adoption of FBET, MBIT processes
- . Low collector to emitter saturation voltage
- . Large current capacity
- . Fast switching speed
- . Very small size making it easy to provide high-density, small-sized hybrid ICs

Absolute Maximum Ratings at Ta=25°C

| | | | |
|---|-----------|-------------|----|
| Collector to Base Voltage | V_{CBO} | -25 | V |
| Collector to Emitter Voltage | V_{CEO} | -20 | V |
| Emitter to Base Voltage | V_{EBO} | -5 | V |
| Collector Current | I_C | -5 | A |
| Collector Current(Pulse) | I_{CP} | -8 | A |
| Collector Dissipation | P_C | 1.3 | W |
| Mounted on ceramic board (250mm ² x 0.8mm) | | | |
| Junction Temperature | T_j | 150 | °C |
| Storage Temperature | T_{stg} | -55 to +150 | °C |

Electrical Characteristics at Ta=25°C

| | | | min | typ | max | unit |
|--------------------------|---------------|--------------------------|------|------|------|------|
| Collector Cutoff Current | I_{CBO} | $V_{CB}=-20V, I_E=0$ | | | -500 | nA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB}=-4V, I_C=0$ | | | -500 | nA |
| DC Current Gain | $h_{FE(1)}$ | $V_{CE}=-2V, I_C=-500mA$ | 100* | | 400* | |
| | $h_{FE(2)}$ | $V_{CE}=-2V, I_C=-4A$ | 60 | | | |
| Gain-Bandwidth Product | f_T | $V_{CE}=-5V, I_C=-200mA$ | | 320 | | MHz |
| Output Capacitance | c_{ob} | $V_{CB}=-10V, f=1MHz$ | | 60 | | pF |
| C-E Saturation Voltage | $V_{CE(sat)}$ | $I_C=-3A, I_B=-60mA$ | | -250 | -500 | mV |
| B-E Saturation Voltage | $V_{BE(sat)}$ | $I_C=-3A, I_B=-60mA$ | | -1.0 | -1.3 | V |

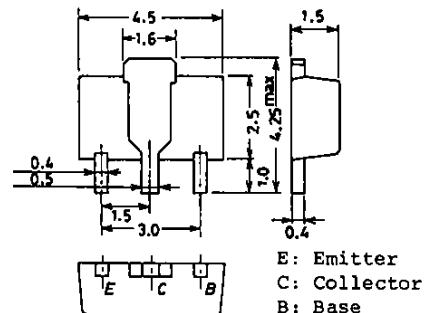
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*: The 2SB1302 is classified by 500mA h_{FE} as follows:

| | | | | | | | | |
|-----|---|-----|-----|---|-----|-----|---|-----|
| 100 | R | 200 | 140 | S | 280 | 200 | T | 400 |
|-----|---|-----|-----|---|-----|-----|---|-----|

Marking : BJ
 h_{FE} rank : R,S,T

Package Dimensions 2038
(unit:mm)



E: Emitter
 C: Collector
 B: Base

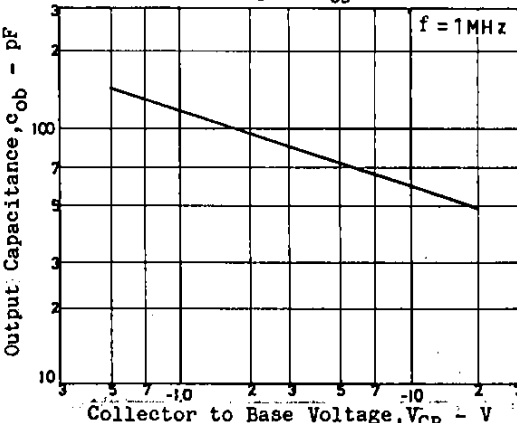
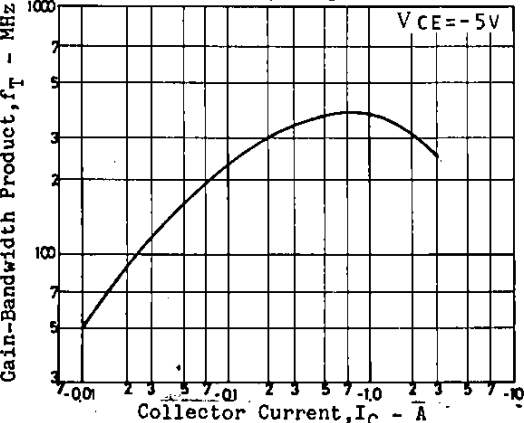
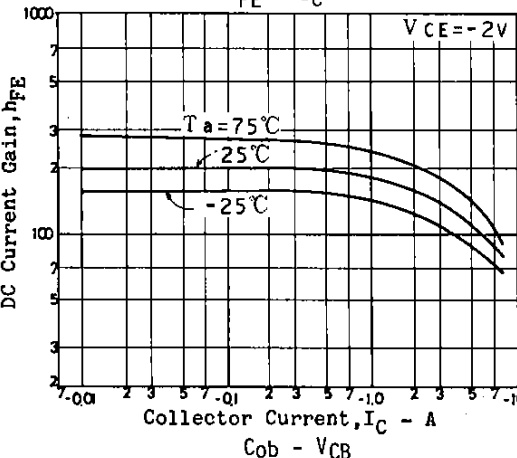
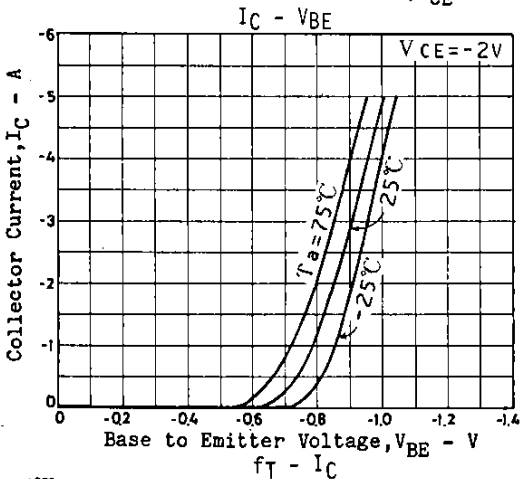
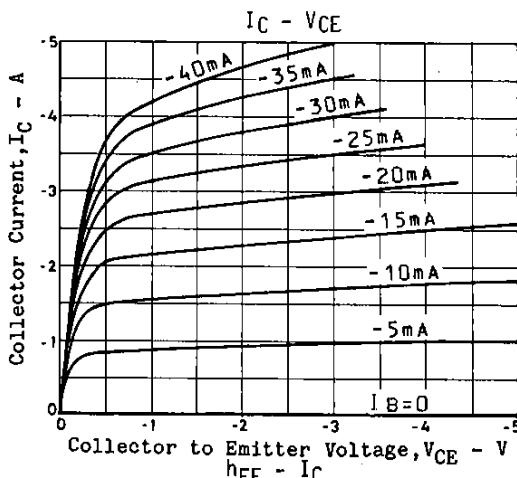
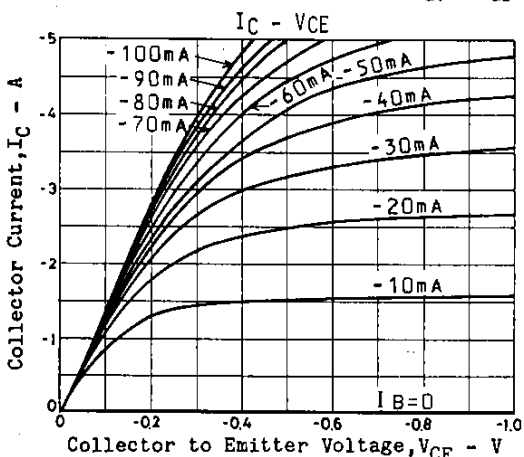
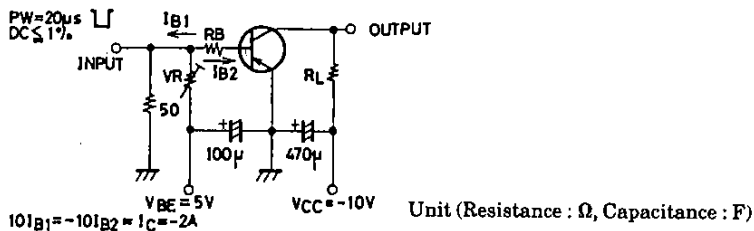
SANYO: PCP
 (Bottom View)

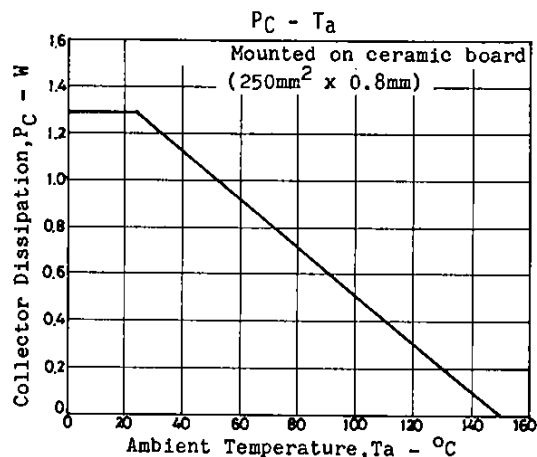
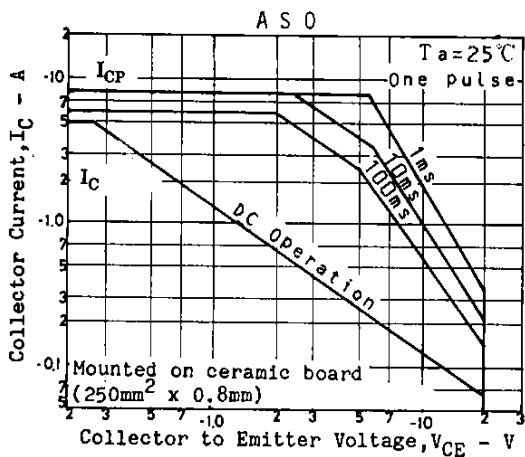
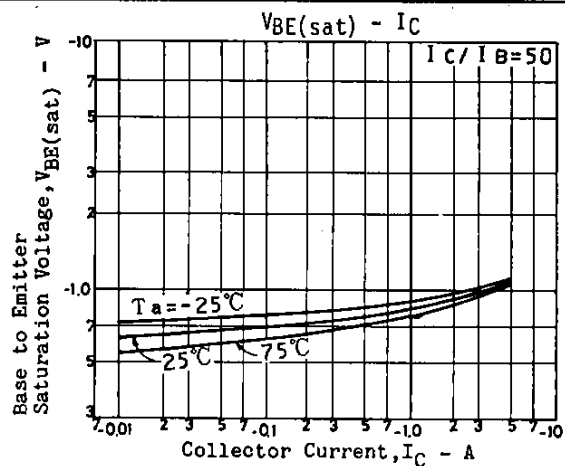
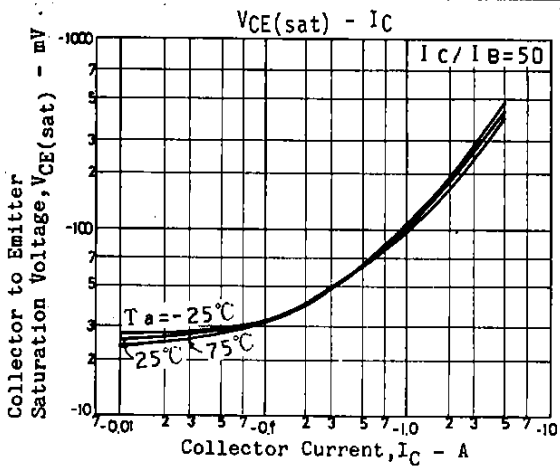
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| | | | min | typ | max | unit |
|-----------------------|---------------|-------------------------------|-----|-----|-----|------|
| C-B Breakdown Voltage | $V_{(BR)CBO}$ | $I_C = -10\mu A, I_E = 0$ | -25 | | | V |
| C-E Breakdown Voltage | $V_{(BR)CEO}$ | $I_C = -1mA, R_{BE} = \infty$ | -20 | | | V |
| E-B Breakdown Voltage | $V_{(BR)EBO}$ | $I_E = -10\mu A, I_C = 0$ | -5 | | | V |
| Turn-on Time | t_{on} | See specified Test Circuit. | | 40 | | ns |
| Storage Time | t_{stg} | " | | 200 | | ns |
| Fall Time | t_f | " | | 10 | | ns |

Switching Time Test Circuit





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