



SANYO Semiconductors

DATA SHEET

2SA2186

 — PNP Epitaxial Planar Silicon Transistor
High-Current Switching Applications

Applications

- Voltage regulators, relay drivers, lamp drivers, electrical equipment.

Features

- Adoption of MBIT processes.
- High current capacity.
- Low collector-to-emitter saturation voltage.
- High-speed switching.

Specifications

Absolute Maximum Ratings at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------|------------------|------------|-------------|------|
| Collector-to-Base Voltage | V _{CB0} | | -50 | V |
| Collector-to-Emitter Voltage | V _{CEO} | | -50 | V |
| Emitter-to-Base Voltage | V _{EBO} | | -6 | V |
| Collector Current | I _C | | -2 | A |
| Collector Current (Pulse) | I _{CP} | | -4 | A |
| Base Current | I _B | | -400 | mA |
| Collector Dissipation | P _C | | 0.9 | W |
| Junction Temperature | T _J | | 150 | °C |
| Storage Temperature | T _{stg} | | -55 to +150 | °C |

Electrical Characteristics at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|----------------------|---|---------|-----|-------|------|
| | | | min | typ | max | |
| Collector Cutoff Current | I _{CB0} | V _{CB} =-40V, I _E =0A | | | -1 | μA |
| Emitter Cutoff Current | I _{EBO} | V _{EB} =-4V, I _C =0A | | | -1 | μA |
| DC Current Gain | h _{FE1} | V _{CE} =-2V, I _C =-100mA | 200 | | 560 | |
| | h _{FE2} | V _{CE} =-2V, I _C =-1.5A | 40 | | | |
| Gain-Bandwidth Product | f _T | V _{CE} =-10V, I _C =-300mA | | 420 | | MHz |
| Output Capacitance | C _{ob} | V _{CB} =-10V, f=1MHz | | 16 | | pF |
| Collector-to-Emitter Saturation Voltage | V _{CE(sat)} | I _C =-1A, I _B =-50mA | -0.22 | | -0.43 | V |
| Base-to-Emitter Saturation Voltage | V _{BE(sat)} | I _C =-1A, I _B =-50mA | -0.9 | | -1.2 | V |

Continued on next page.

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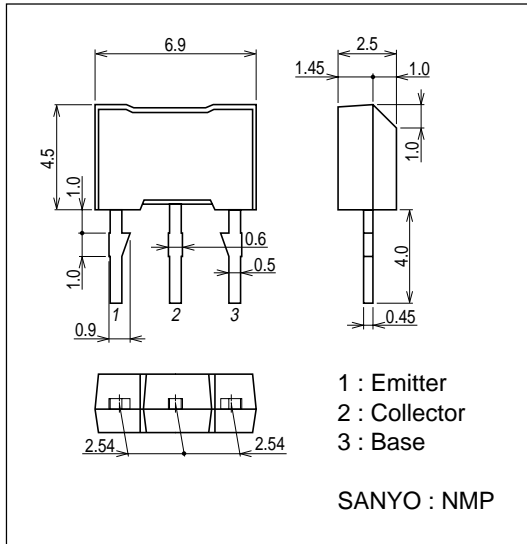
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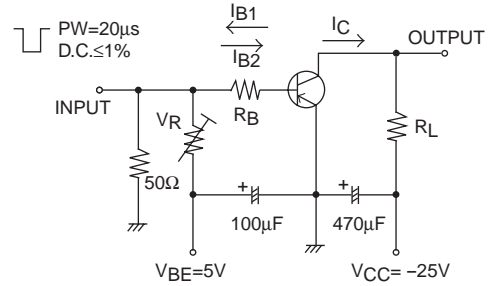
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--|---------------|-------------------------------|---------|-----|-----|------|
| | | | min | typ | max | |
| Collector-to-Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C = -10\mu A, I_E = 0A$ | -50 | | | V |
| Collector-to-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C = -1mA, R_{BE} = \infty$ | -50 | | | V |
| Emitter-to-Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E = -10\mu A, I_C = 0A$ | -6 | | | V |
| Turn-On Time | t_{on} | See specified Test Circuit. | | 35 | | ns |
| Storage Time | t_{stg} | See specified Test Circuit. | | 200 | | ns |
| Fall Time | t_f | See specified Test Circuit. | | 24 | | ns |

Package Dimensions

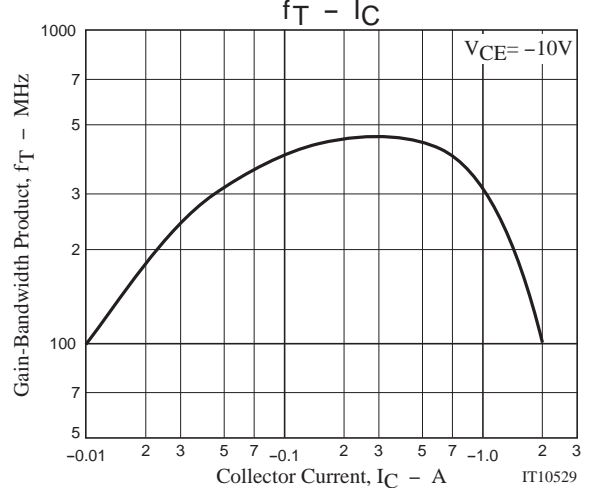
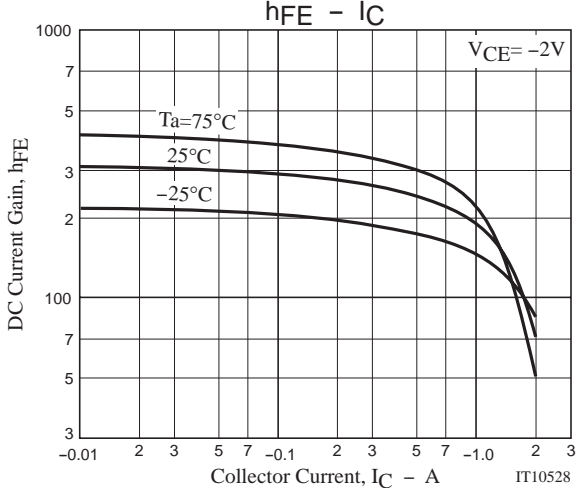
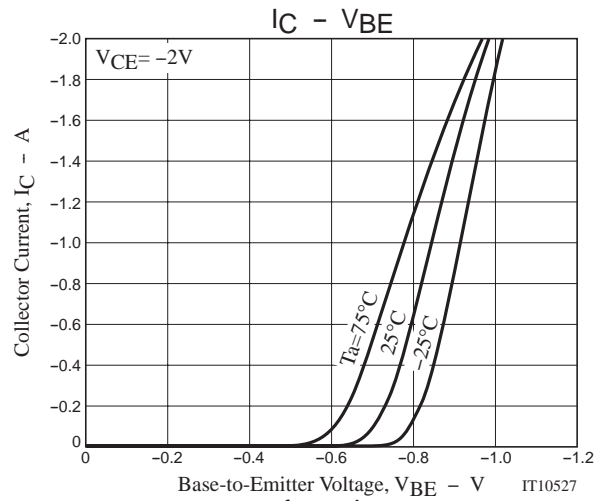
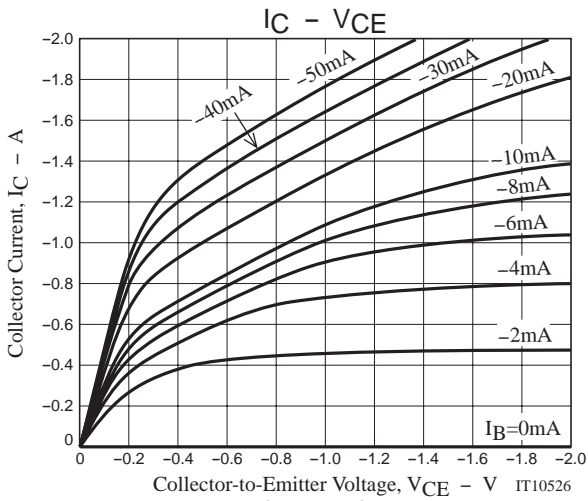
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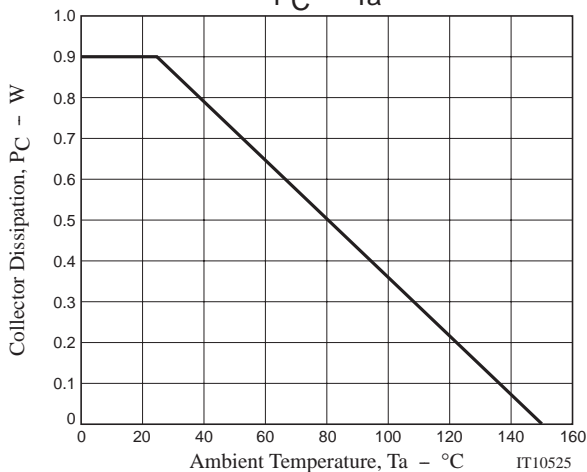
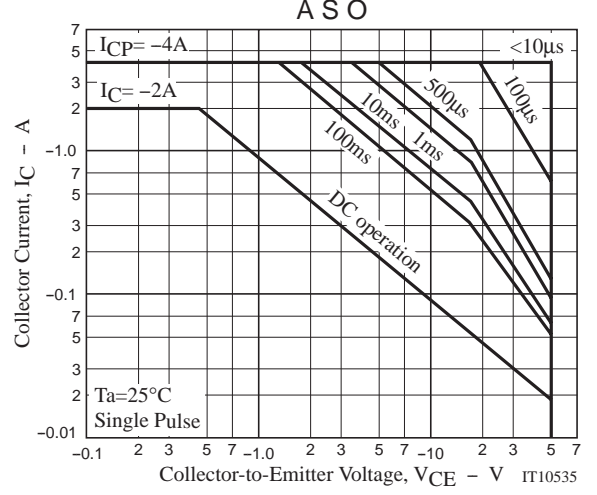
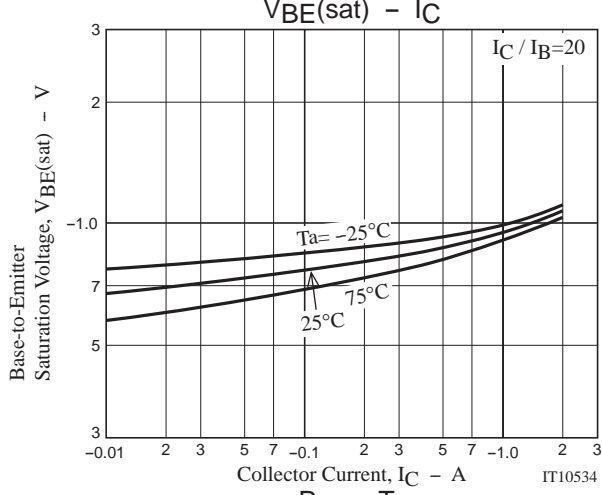
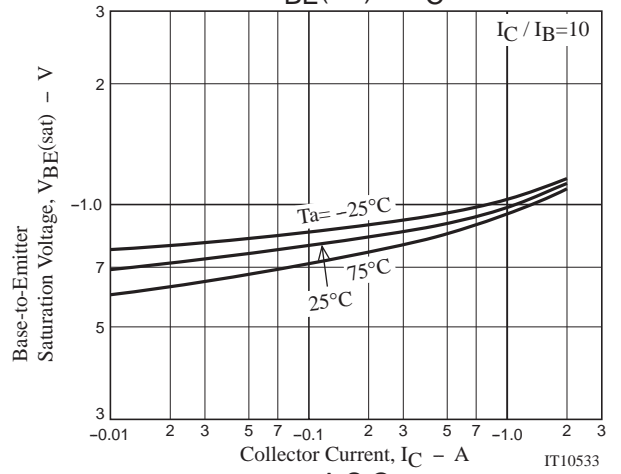
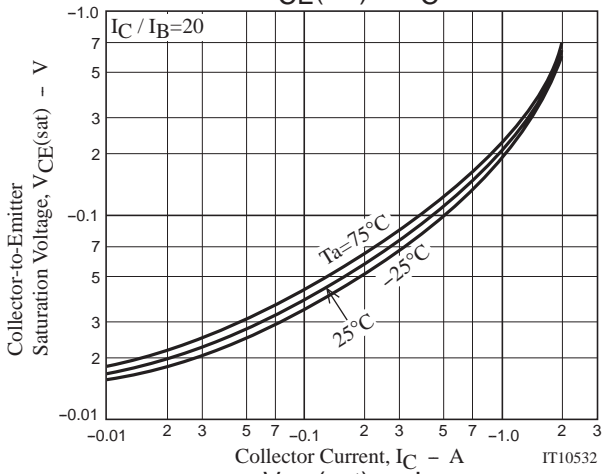
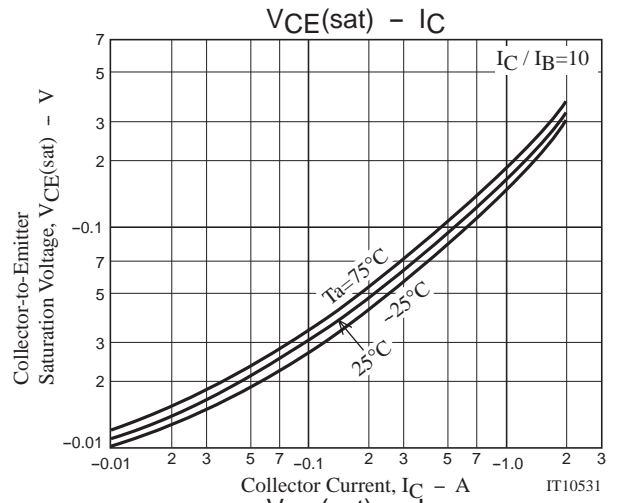
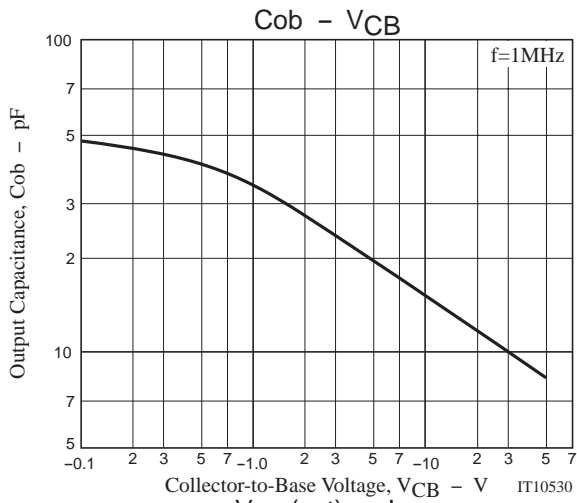
Switching Time Test Circuit



$$I_C = 10I_{B1} = -10I_{B2} = -0.7A$$



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