

| | | |
|--------------------------------------|----------|---|
| SANYO | No.2069A | 2SB1140 |
| | | PNP Epitaxial Planar Silicon Transistor |
| 20V/5A Switching Applications | | |

Applications

- Strobes, power supplies, relay drivers, lamp drivers.

Features

- Adoption of FBET, MBIT processes.
- Low saturation voltage.
- Large current capacitx.
- Short switching time.

Absolute Maximum Ratings at Ta = 25°C

| | | | unit |
|------------------------------|------------------|-------------|------|
| Collector-to-Base Voltage | V _{CB0} | -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 |
| Base Current | I _B | -0.5 | A |
| Collector Dissipation | P _C | 1.5 | W |
| | | 10 | W |
| Junction Temperature | T _j | 150 | °C |
| Storage Temperature | T _{stg} | -55 to +150 | °C |

T_c = 25°C

Electrical Characteristics at Ta = 25°C

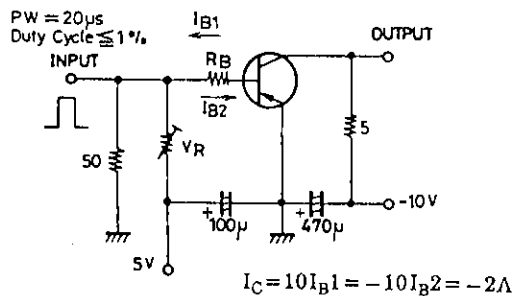
| | | | min | typ | max | unit |
|--------------------------|----------------------|--|------|------|------|------|
| Collector Cutoff Current | I _{CB0} | V _{CB} = -20V, I _E = 0 | | | -500 | nA |
| Emitter Cutoff Current | I _{EBO} | V _{EB} = -4V, I _C = 0 | | | -500 | nA |
| DC Current Gain | h _{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 |

Continued on next page.

* : The 2SB1140 is classified by 500mA h_{FE} as follows

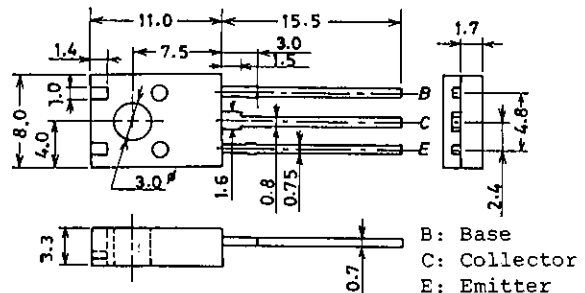
| | | |
|-----------|-----------|-----------|
| 100 R 200 | 140 S 280 | 200 T 400 |
|-----------|-----------|-----------|

Switching Time Test Circuit



Package Dimensions 2042A

(unit : mm)

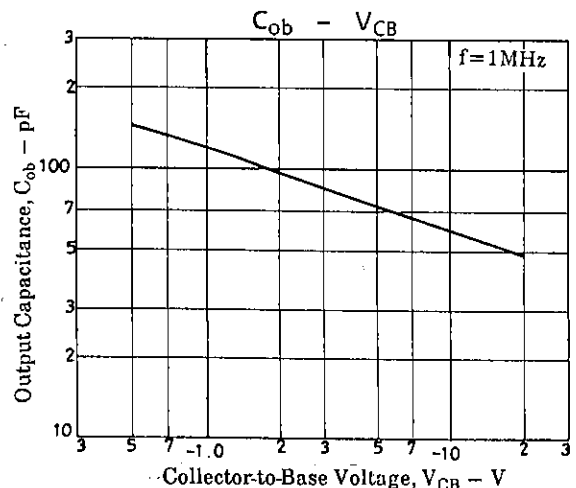
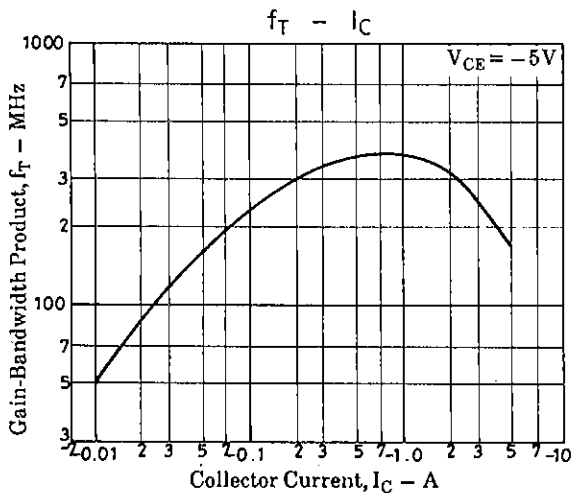
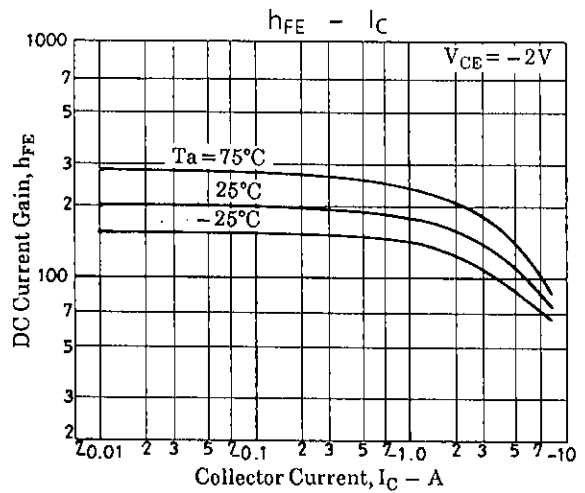
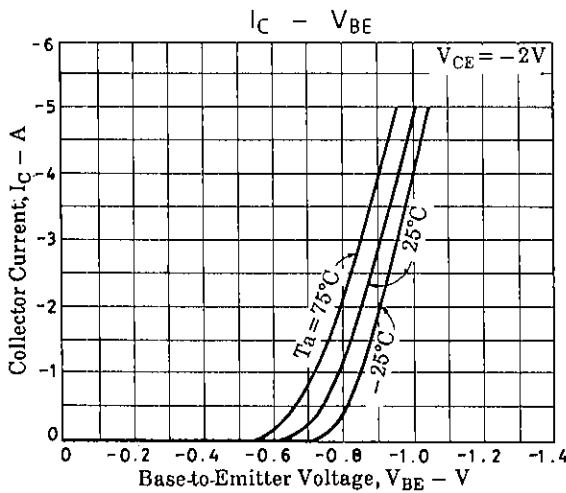
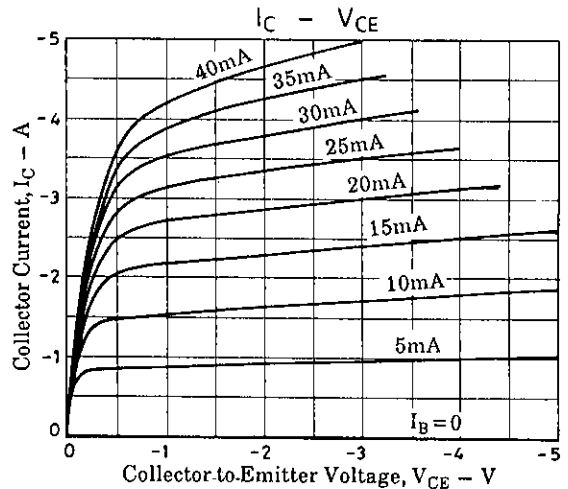
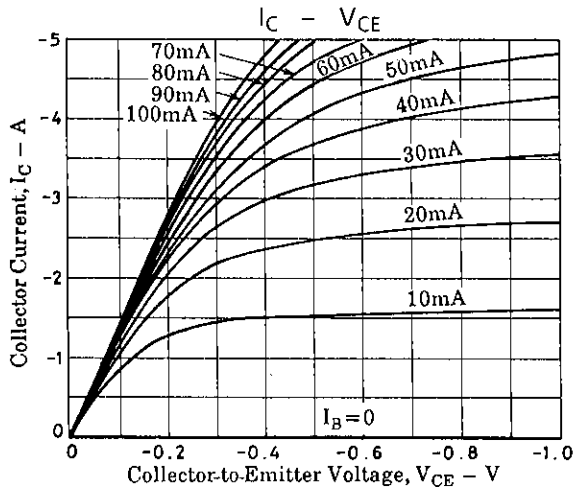


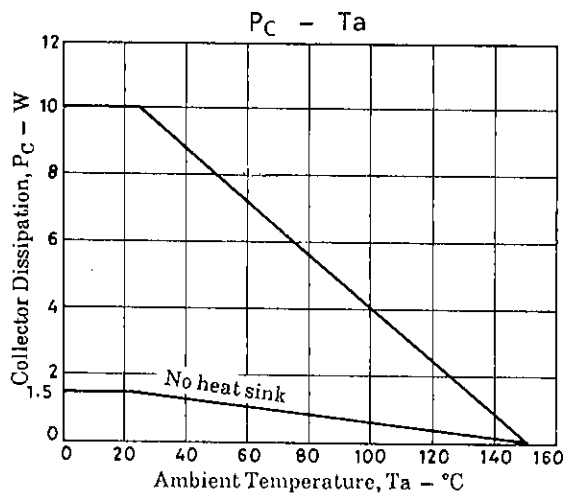
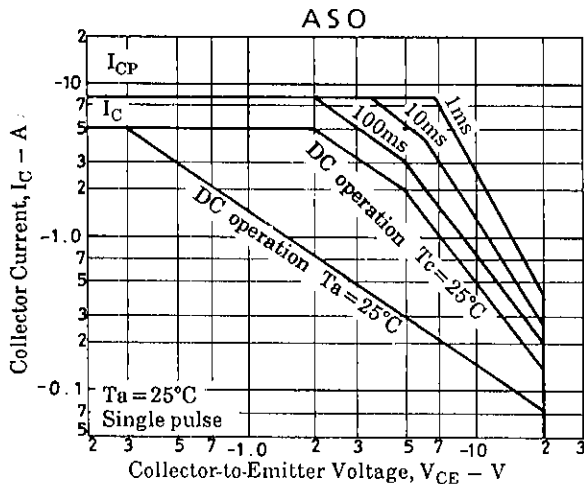
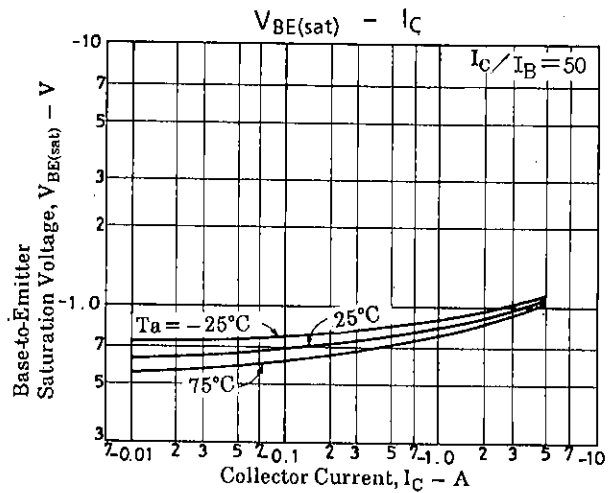
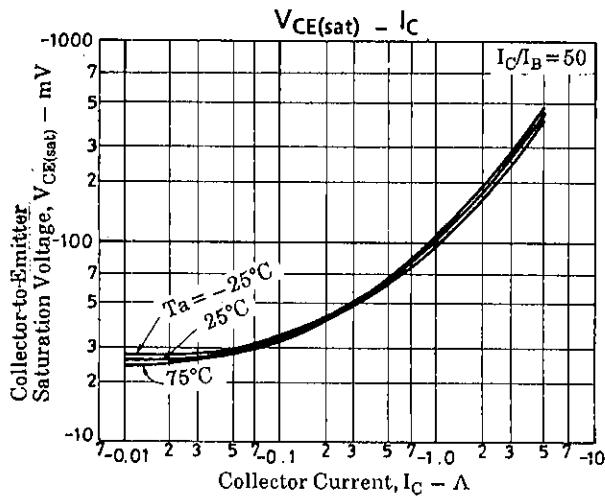
SANYO: TO126ML

SANYO Electric Co., Ltd. Semiconductor Business Headquarters
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110 JAPAN

Continued from preceding page.

| | | | 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 |





- No products described or contained herein are intended for use in surgical implants, life-support systems, aerospace equipment, nuclear power control systems, vehicles, disaster/crime-prevention equipment and the like, the failure of which may directly or indirectly cause injury, death or property loss.
- Anyone purchasing any products described or contained herein for an above-mentioned use shall:
 - ① Accept full responsibility and indemnify and defend SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors and all their officers and employees, jointly and severally, against any and all claims and litigation and all damages, cost and expenses associated with such use;
 - ② Not impose any responsibility for any fault or negligence which may be cited in any such claim or litigation on SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors or any of their officers and employees jointly or severally.
- Information (including circuit diagrams and circuit parameters) herein is for example only; it is not guaranteed for volume production. SANYO believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.