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| SANYO | No. 2018A | 2 S C 3 8 0 7 |
| | NPN Epitaxial Planar Silicon Transistor HIGH h_{FE} , LOW FREQUENCY, GENERAL-PURPOSE AMP APPLICATIONS | |

Applications

- Low frequency general-purpose amplifiers, drivers

Features

- Large current capacity ($I_C=2A$)
- Adoption of MBIT process
- High DC current gain ($h_{FE}=800$ to 3200)
- Low collector-to-emitter saturation voltage ($V_{CE(sat)} \leq 0.5V$)
- High V_{EBO} ($V_{EBO} \geq 15V$)

Absolute Maximum Ratings at $T_a=25^\circ C$

| | | | unit |
|------------------------------|------------------|-------------|------------|
| Collector to Base Voltage | V_{CBO} | 30 | V |
| Collector to Emitter Voltage | V_{CEO} | 25 | V |
| Emitter to Base Voltage | V_{EBO} | 15 | V |
| Collector Current | I_C | 2 | A |
| Peak Collector Current | i_{cp} | 4 | A |
| Collector Dissipation | P_c | 1.2 | W |
| | $T_c=25^\circ C$ | 15 | W |
| Junction Temperature | T_j | 150 | $^\circ C$ |
| Storage Temperature | T_{stg} | -55 to +150 | $^\circ C$ |

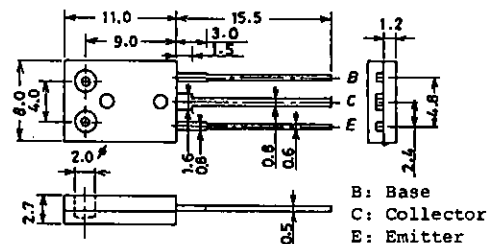
Electrical Characteristics at $T_a=25^\circ C$

| | | min | typ | max | unit |
|---|------------------------------------|------|------|------|---------|
| Collector Cutoff Current | I_{CBO} $V_{CB}=20V, I_E=0$ | | | 0.1 | μA |
| Emitter Cutoff Current | I_{EBO} $V_{EB}=10V, I_C=0$ | | | 0.1 | μA |
| DC Current Gain | $h_{FE}(1)$ $V_{CE}=5V, I_C=500mA$ | 800 | 1500 | 3200 | |
| | $h_{FE}(2)$ $V_{CE}=5V, I_C=1A$ | 600 | | | |
| Gain-Bandwidth Product | f_T $V_{CE}=10V, I_C=50mA$ | | 260 | | MHz |
| Output Capacitance | c_{ob} $V_{CE}=10V, f=1MHz$ | | 27 | | pF |
| Collector to Emitter Saturation Voltage | $V_{CE(sat)}$ $I_C=1A, I_B=20mA$ | 0.15 | 0.5 | | V |
| Base to Emitter Saturation Voltage | $V_{BE(sat)}$ $I_C=1A, I_B=20mA$ | 0.85 | 1.2 | | V |
| Collector to Base Breakdown Voltage | $V_{(BR)CBO}$ $I_C=10\mu A, I_E=0$ | 30 | | | V |

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Package Dimensions 2043A

(unit: mm)

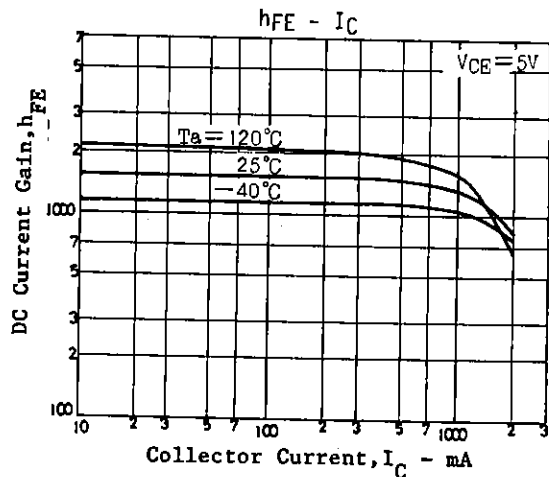
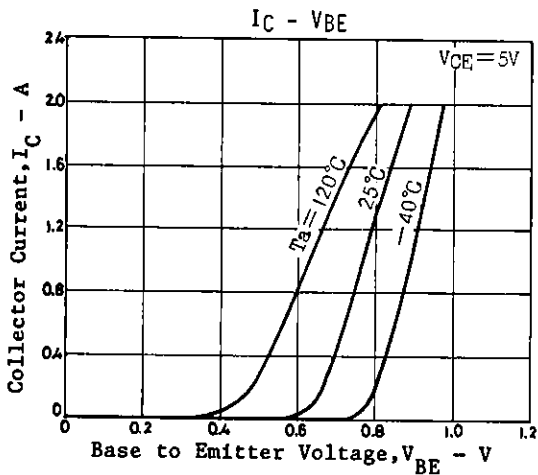
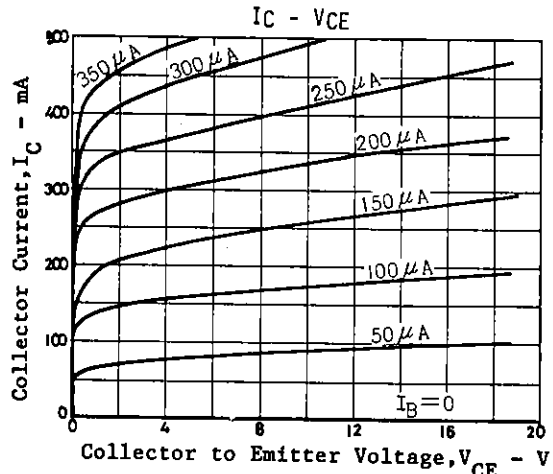
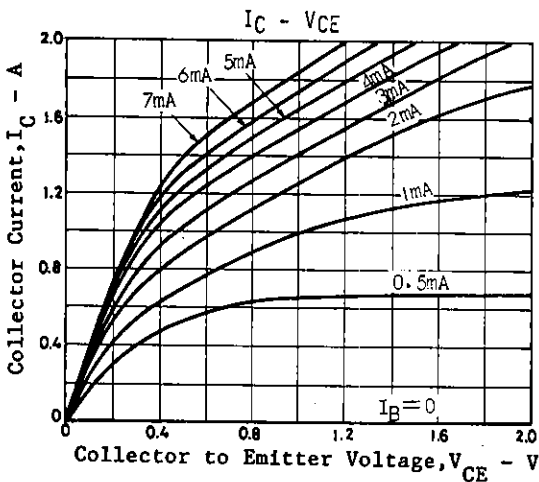
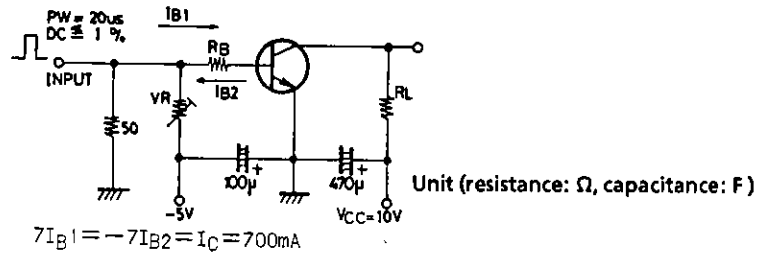


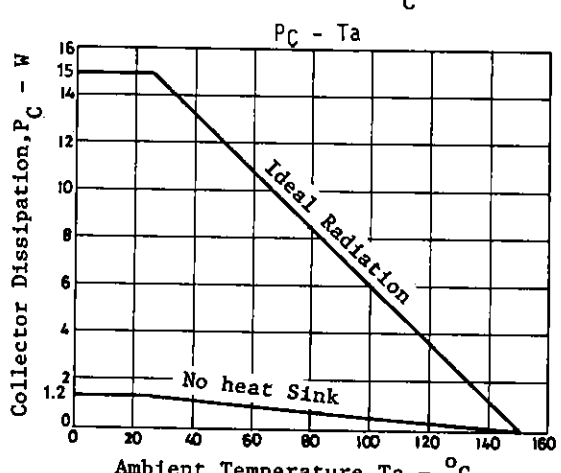
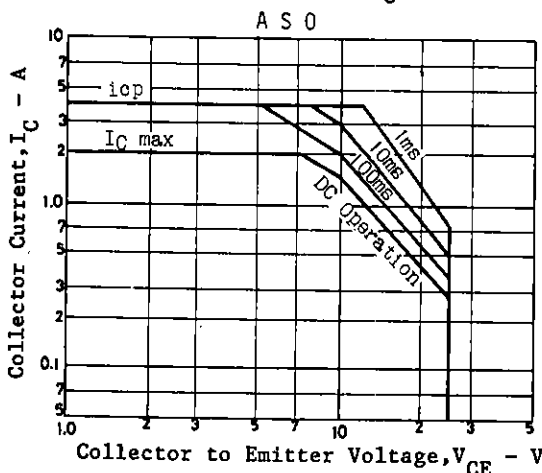
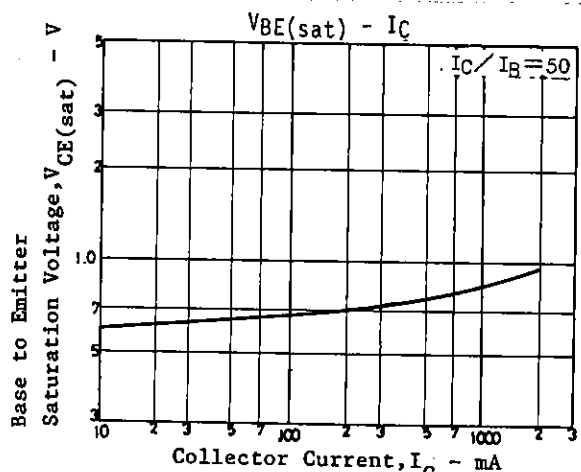
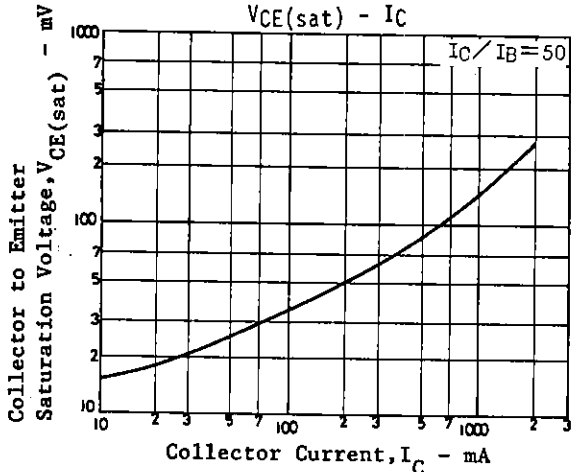
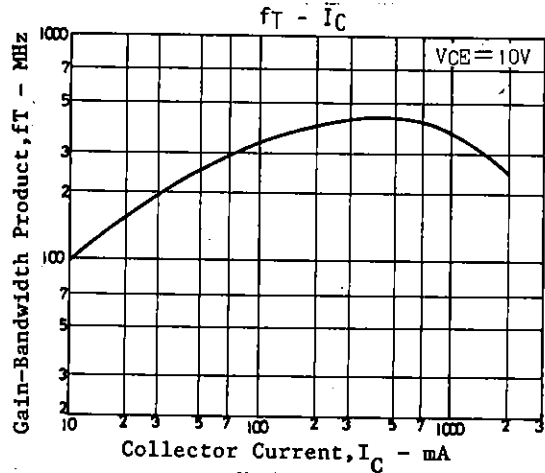
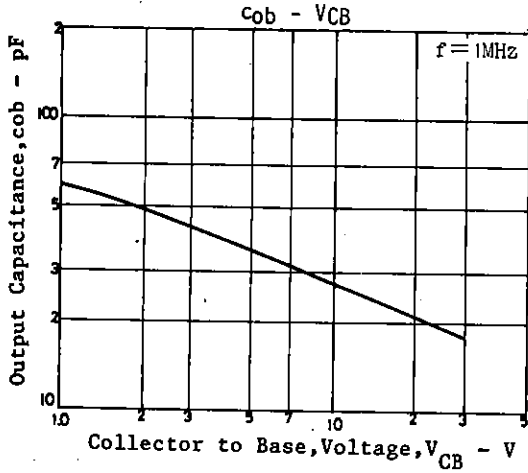
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| | | | min | typ | max | unit |
|--|---------------|-----------------------------|------|-----|-----|---------|
| Collector to Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C=1mA, R_{BE}=\infty$ | 25 | | | V |
| Emitter to Base | $V_{(BR)EBO}$ | $I_E=10\mu A, I_C=0$ | 15 | | | V |
| Turn-on time | t_{on} | See specified Test Circuit. | 0.14 | | | μs |
| Storage Temperature | t_{stg} | " | 1.35 | | | μs |
| Fall Time | t_f | " | 0.1 | | | μs |

Switching Time Test Circuit





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