



SANYO Semiconductors

DATA SHEET

2SC6043

 — NPN Epitaxial Planar Silicon Transistors

High-Current Switching Applications

Applications

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

Features

- Adoption of MBIT process.
- High current capacitance.
- 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} | | 80 | V |
| Collector-to-Emitter Voltage | V _{CE0} | | 80 | V |
| Collector-to-Emitter Voltage | V _{CEO} | | 50 | V |
| Emitter-to-Base Voltage | V _{EB0} | | 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 | | 1 | 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 _{EB0} | 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 | | 9 | | pF |

Continued on next page.

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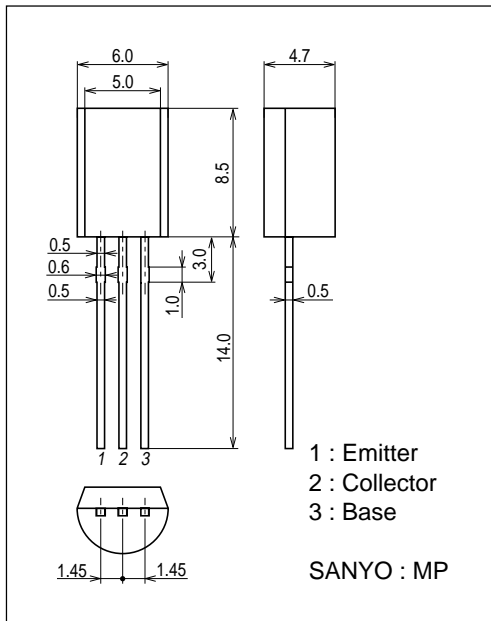
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| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|---------------|--------------------------------|---------|------|-----|------|
| | | | min | typ | max | |
| Collector-to-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=1A, I_B=50mA$ | | 150 | 300 | mV |
| Base-to-Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C=1A, I_B=50mA$ | | 0.94 | 1.2 | V |
| Collector-to-Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C=10\mu A, I_E=0A$ | 80 | | | V |
| Collector-to-Emitter Breakdown Voltage | $V_{(BR)CES}$ | $I_C=100\mu A, R_{BE}=0\Omega$ | 80 | | | 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. | | 330 | | ns |
| Fall Time | t_f | See specified Test Circuit. | | 40 | | ns |

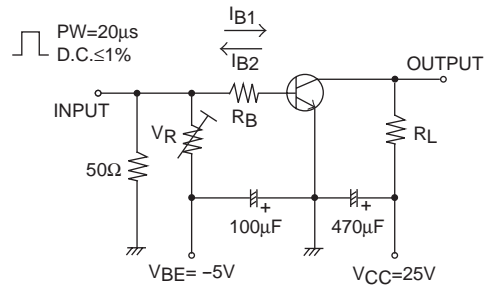
Package Dimensions

unit : mm

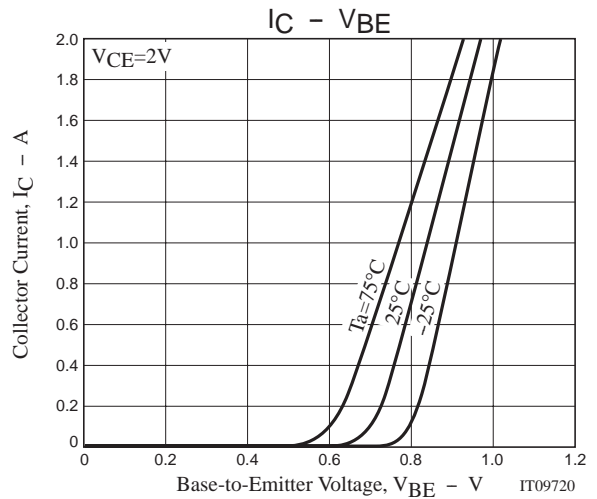
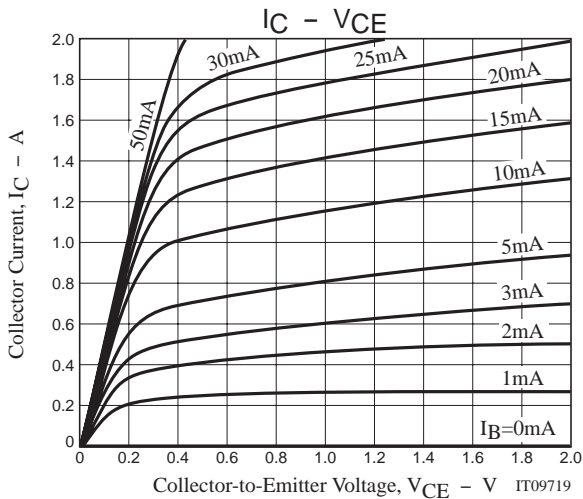
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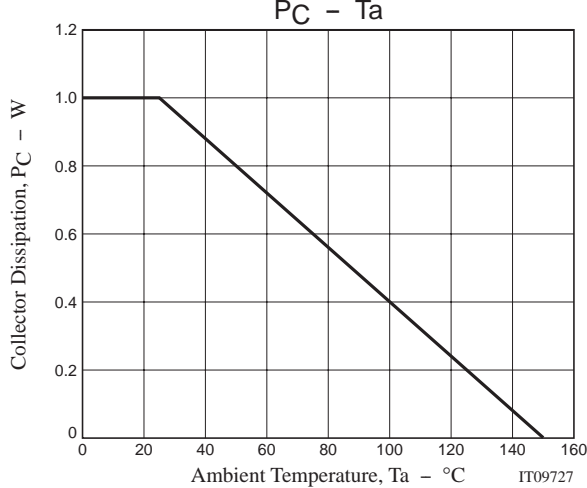
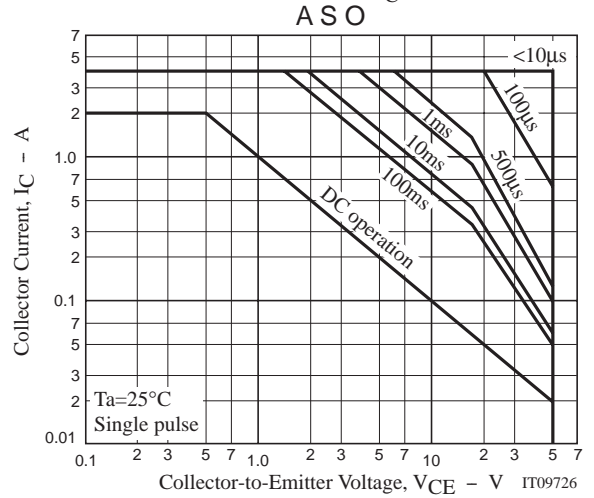
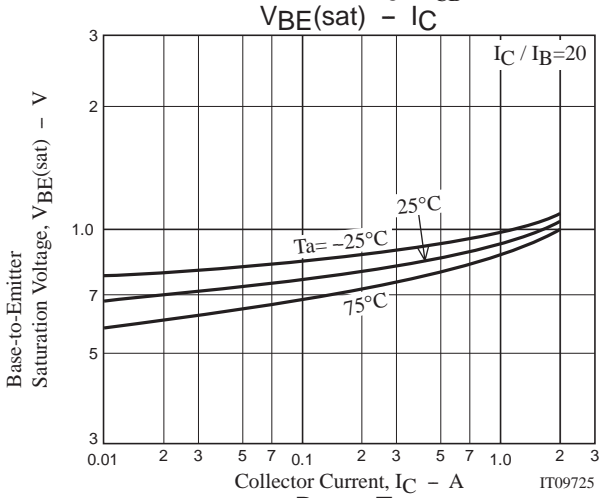
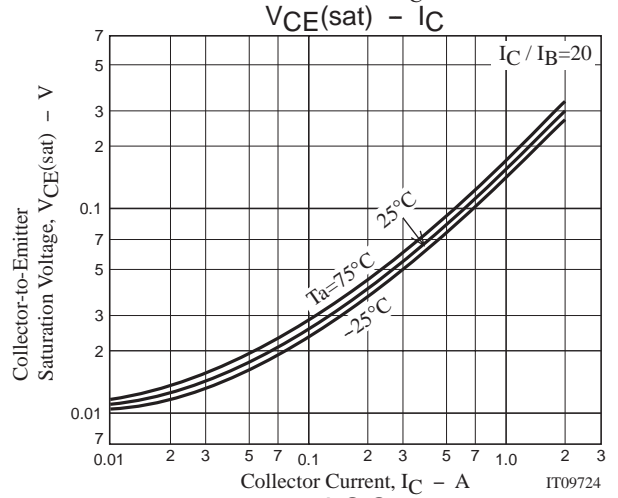
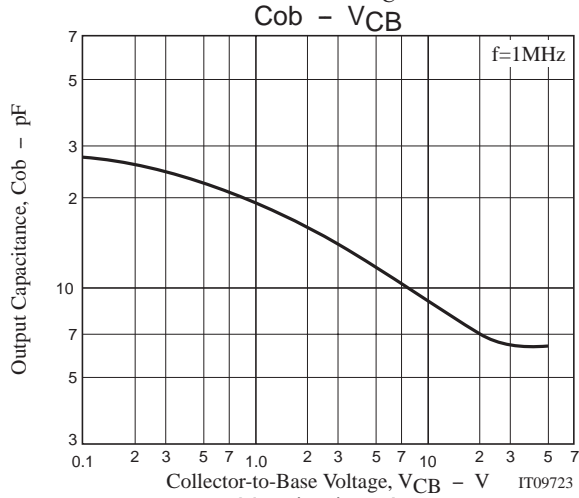
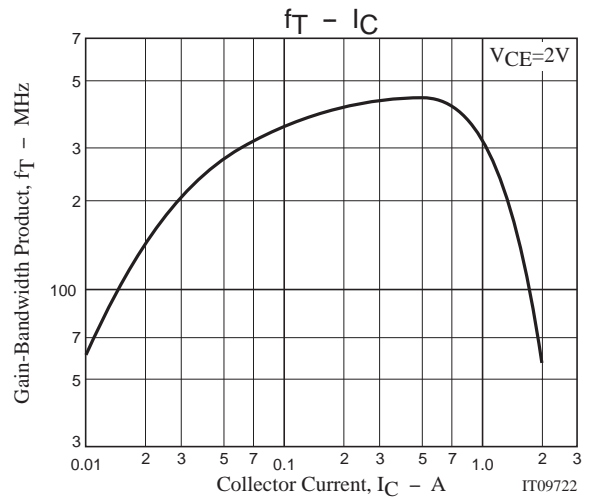
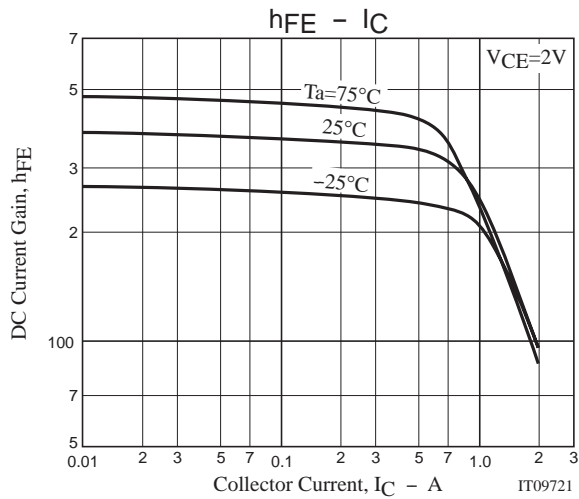
Switching Time Test Circuit



$$I_C = 10I_{B1} = -10I_{B2} = 700mA$$



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