

**30C02S**

Low-Frequency General-Purpose Amplifier Applications

Applications

- Low-frequency Amplifier, high-speed switching, small motor drive.

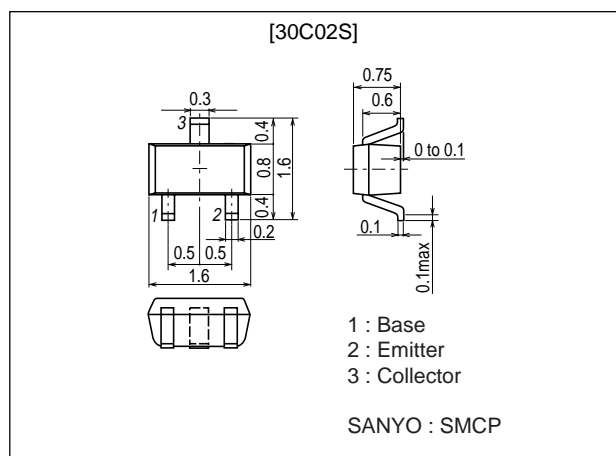
Features

- Large current capacitance.
- Low collector-to-emitter saturation voltage (resistance).
RCE(sat) typ=330mΩ [IC=0.7A, IB=35mA].
- Ultrasmall package facilitates miniaturization in end products.
- Small ON-resistance (Ron).

Package Dimensions

unit : mm

2106A



Specifications

Absolute Maximum Ratings at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------|------------------|--|-------------|------|
| Collector-to-Base Voltage | V _{CB0} | | 40 | V |
| Collector-to-Emitter Voltage | V _{CEO} | | 30 | V |
| Emitter-to-Base Voltage | V _{EBO} | | 5 | V |
| Collector Current | I _C | | 600 | mA |
| Collector Current (Pulse) | I _{CP} | | 1.2 | A |
| Collector Dissipation | P _C | Mounted on a glass-epoxy board (20X30X1.6mm) | 200 | mW |
| 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} =30V, I _E =0 | | | 100 | nA |
| Emitter Cutoff Current | I _{EBO} | V _{EB} =4V, I _C =0 | | | 100 | nA |
| DC Current Gain | h _{FE} | V _{CE} =2V, I _C =50mA | 300 | | 800 | |
| Gain-Bandwidth Product | f _T | V _{CE} =10V, I _C =50mA | | 540 | | MHz |

Marking : YM

Continued on next page.

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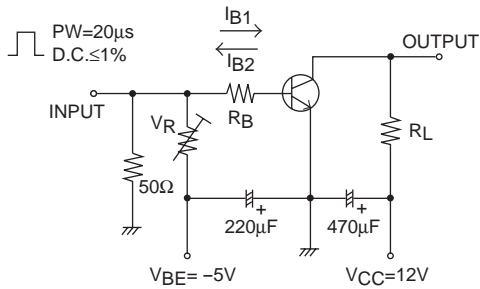
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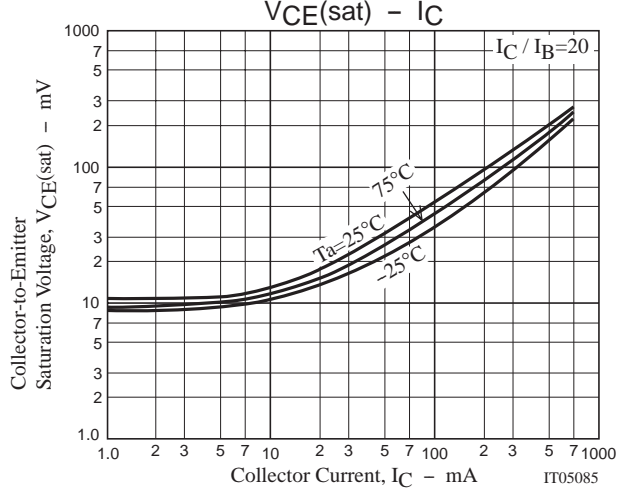
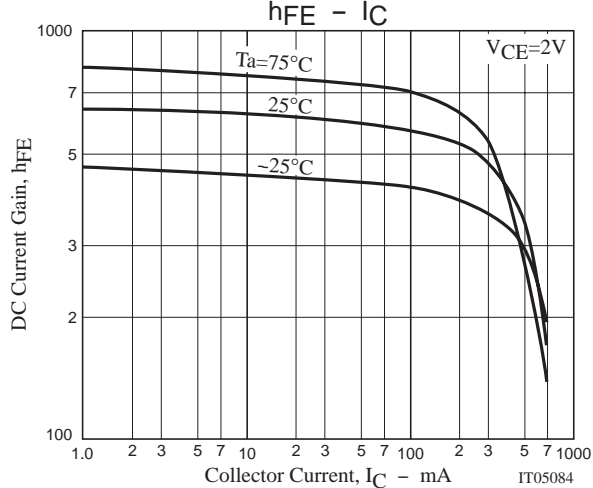
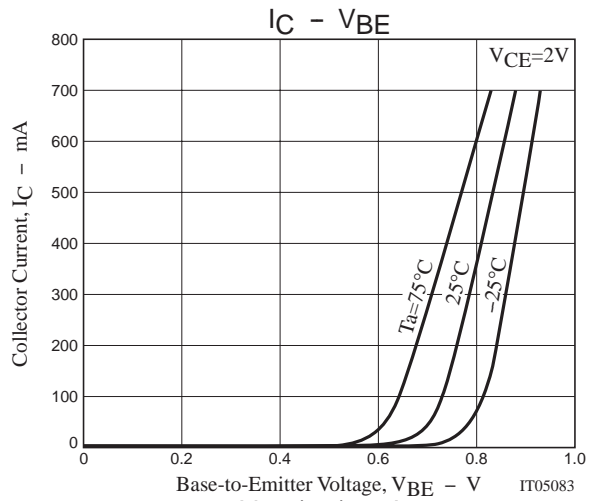
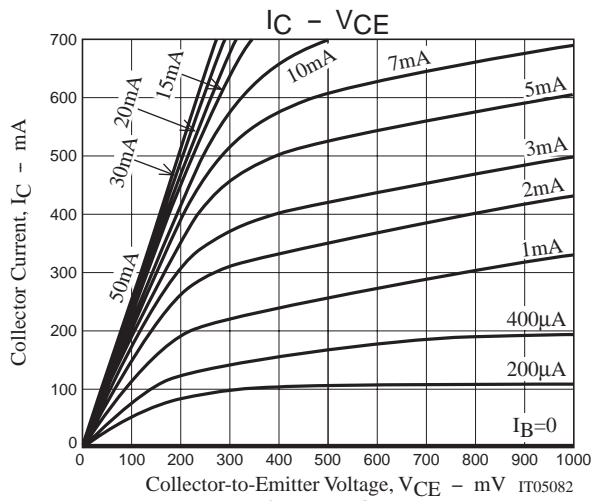
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| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|----------------------|---|---------|-----|-----|------|
| | | | min | typ | max | |
| Output Capacitance | Cob | V _{CE} =10V, f=1MHz | | 3.3 | | pF |
| Collector-to-Emitter Saturation Voltage | V _{CE(sat)} | I _C =200mA, I _B =10mA | | 85 | 190 | mV |
| Base-to-Emitter Saturation Voltage | V _{BE(sat)} | I _C =200mA, I _B =10mA | | 0.9 | 1.2 | V |
| Collector-to-Base Breakdown Voltage | V _{(BR)CBO} | I _C =10μA, I _E =0 | 40 | | | V |
| Collector-to-Emitter Breakdown Voltage | V _{(BR)CEO} | I _C =1mA, R _{BE} =∞ | 30 | | | V |
| Emitter-to-Base Breakdown Voltage | V _{(BR)EBO} | I _E =10μA, I _C =0 | 5 | | | V |
| Turn-ON Time | t _{on} | See specified Test Circuit. | | 35 | | ns |
| Storage Time | t _{stg} | See specified Test Circuit. | | 255 | | ns |
| Fall Time | t _f | See specified Test Circuit. | | 40 | | ns |

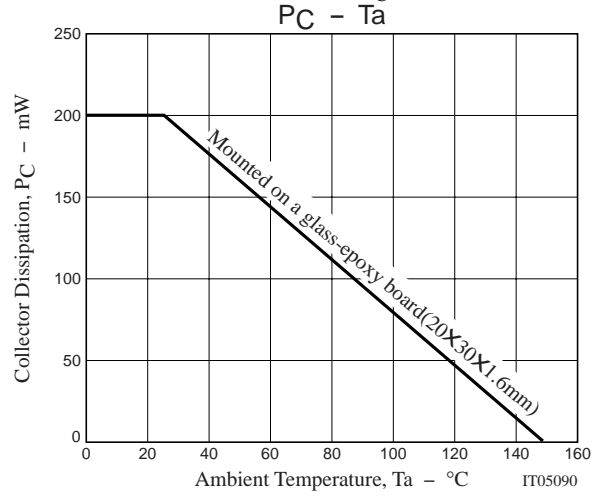
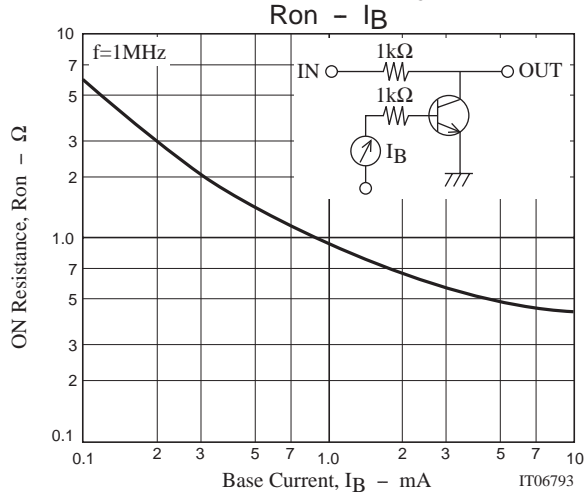
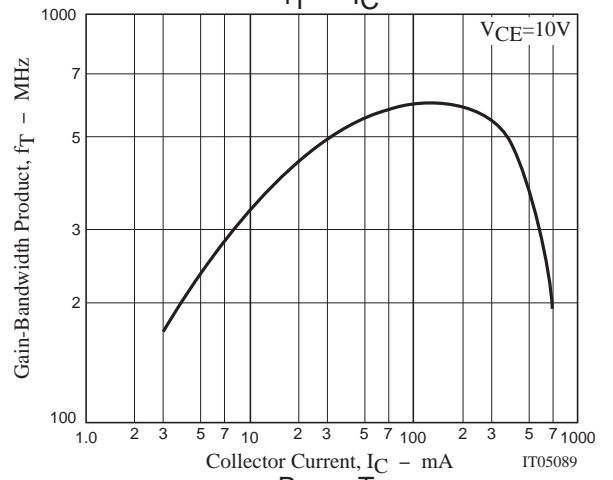
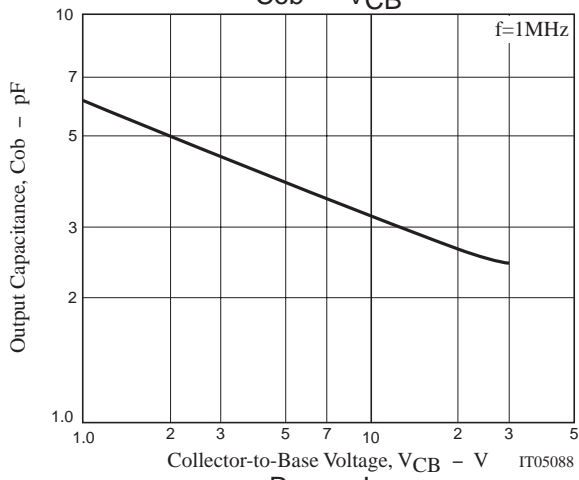
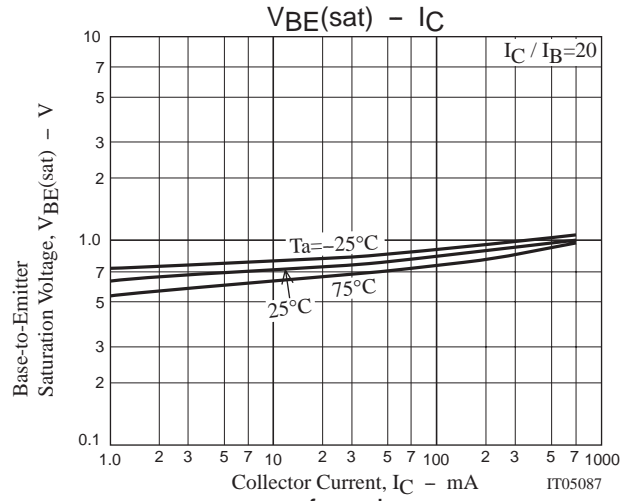
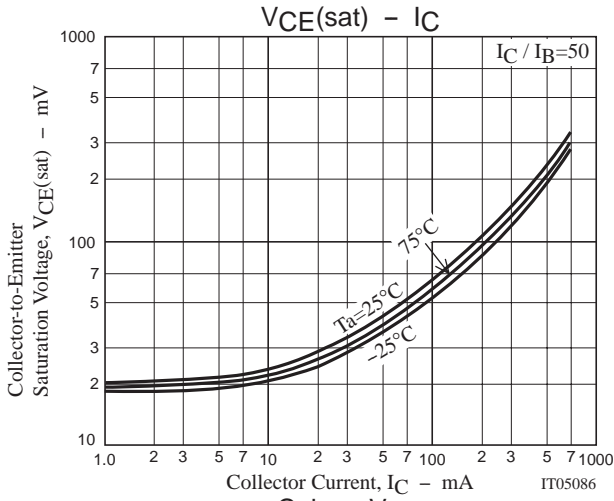
Switching Time Test Circuit



$$20I_{B1} = -20I_{B2} = I_C = 300\text{mA}$$



30C02S



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