

**30C02SS**

Low-Frequency General-Purpose Amplifier Applications

Applications

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

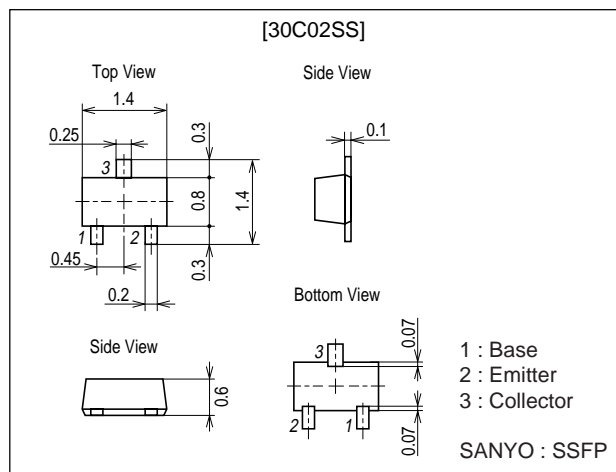
Features

- Large current capacitance.
- Low collector-to-emitter saturation voltage (resistance).
 $R_{CE(sat)}$ typ=330m Ω [$I_C=0.7A$, $I_B=35mA$].
- Ultrasmall package facilitates miniaturization in end products.
- Small ON-resistance (R_{on}).

Package Dimensions

unit : mm

2159A



Specifications

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

| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------|-----------|--|-------------|------------|
| Collector-to-Base Voltage | V_{CBO} | | 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 | $^\circ C$ |
| Storage Temperature | T_{stg} | | -55 to +150 | $^\circ C$ |

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

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--------------------------|-----------|---------------------------|---------|-----|-----|------|
| | | | min | typ | max | |
| Collector Cutoff Current | I_{CBO} | $V_{CB}=30V$, $I_E=0$ | | | 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

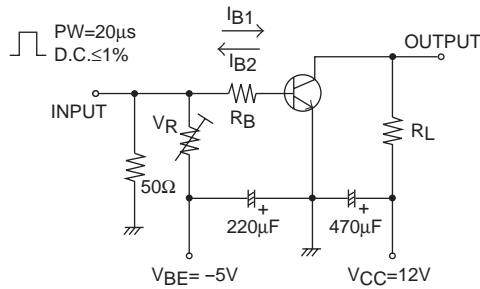
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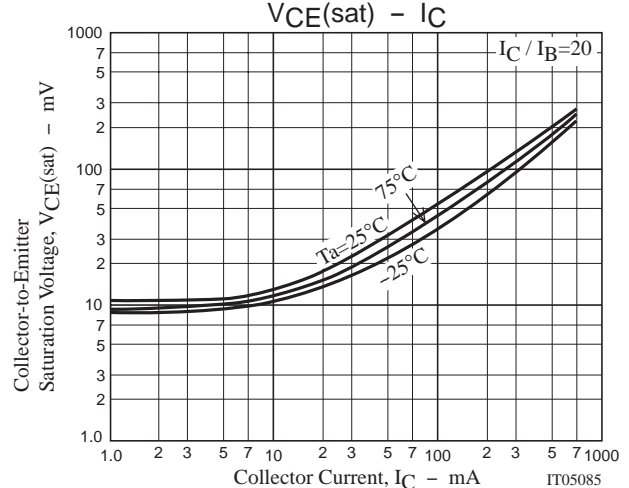
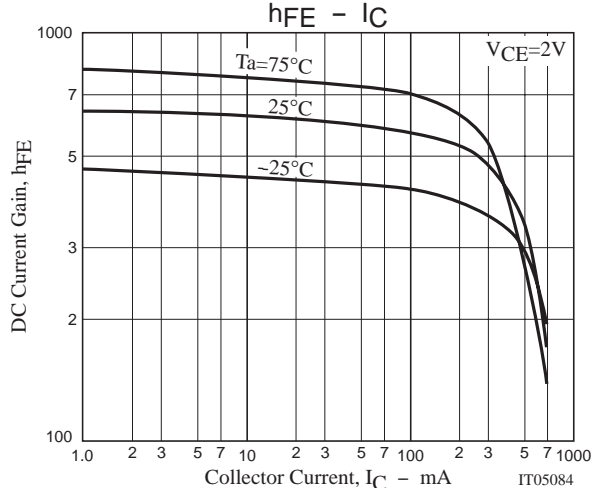
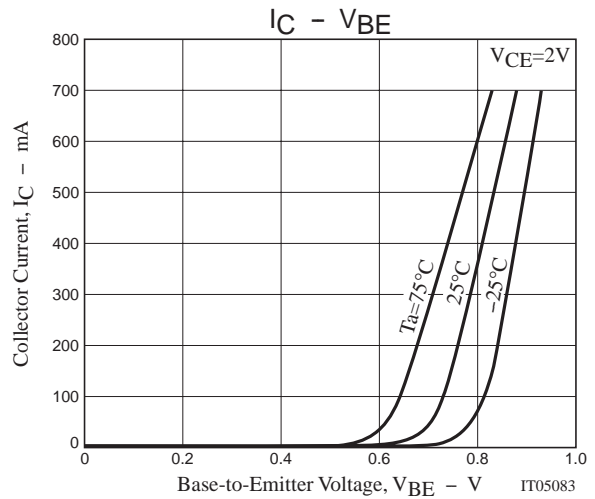
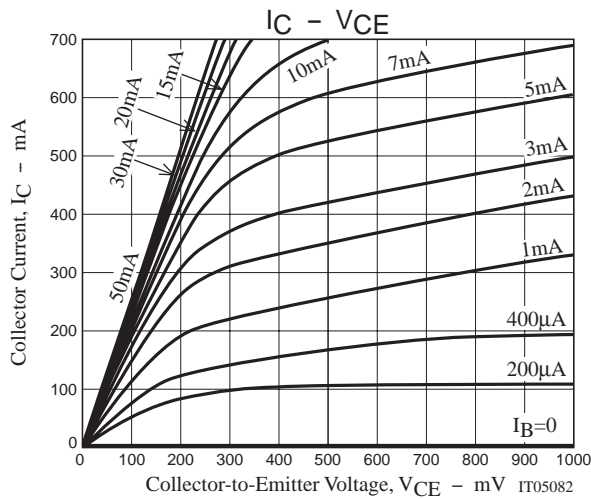
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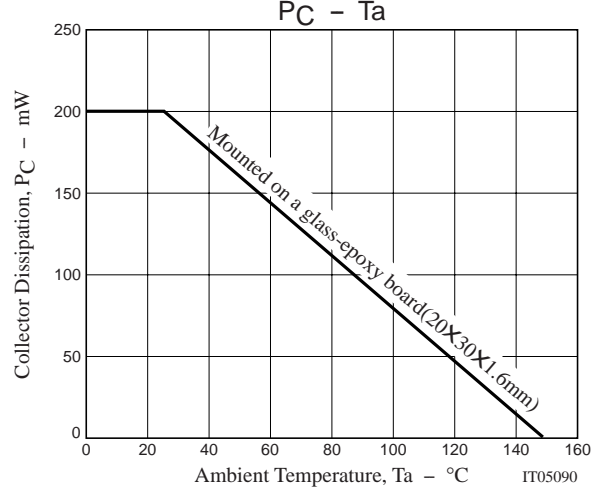
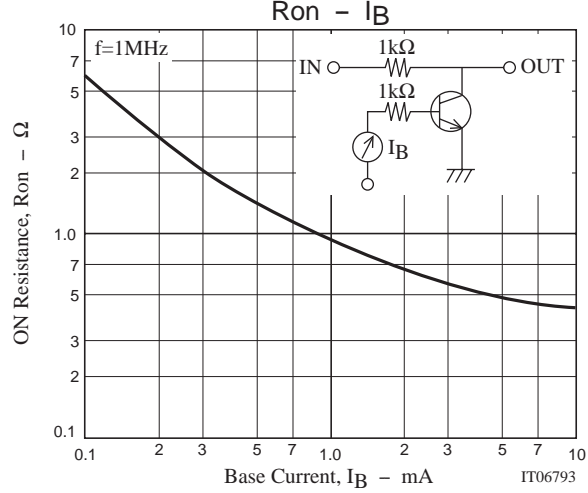
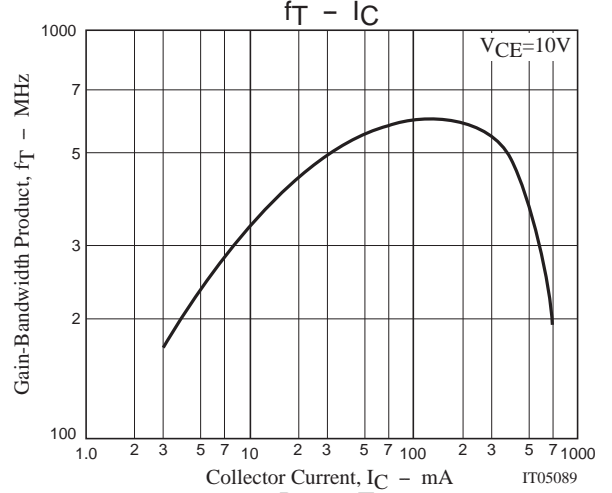
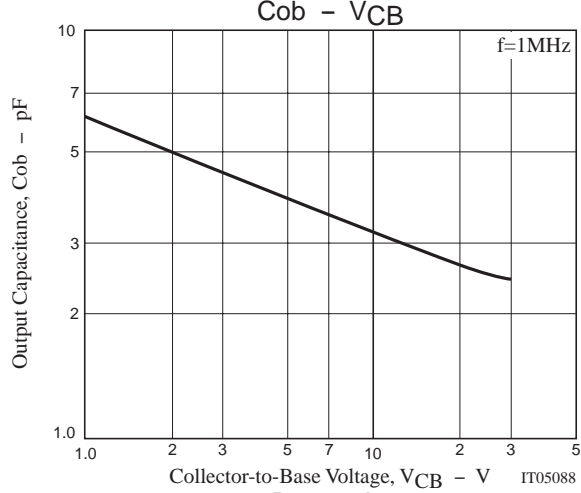
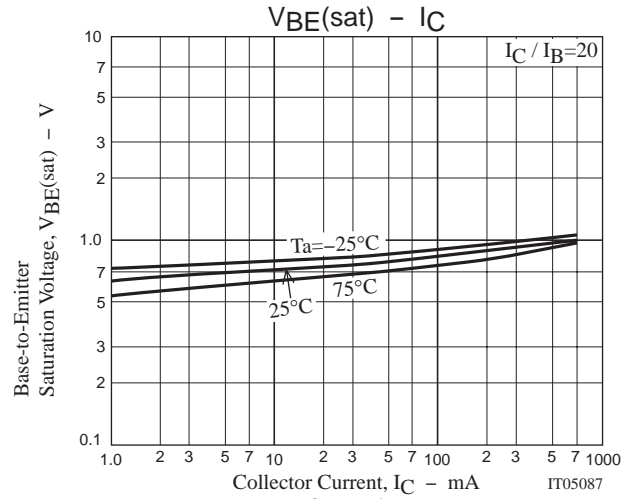
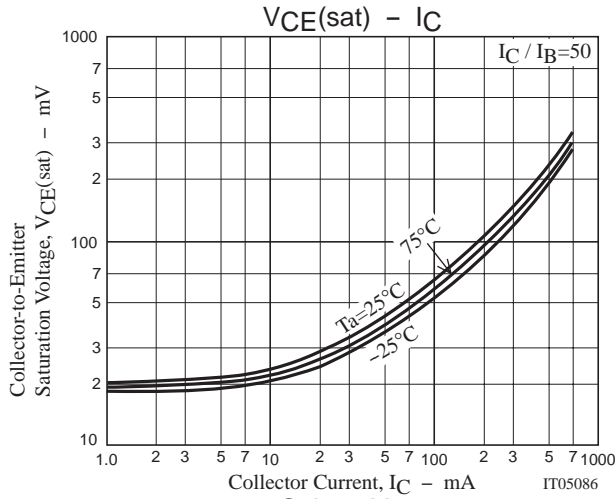
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|---------------|-----------------------------|---------|-----|-----|------|
| | | | min | typ | max | |
| Output Capacitance | C_{ob} | $V_{CB}=10V, f=1MHz$ | | 3.3 | | pF |
| Collector-to-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=200mA, I_B=10mA$ | | 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 | $V_{(BR)CBO}$ | $I_C=10\mu A, I_E=0$ | 40 | | | V |
| Collector-to-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C=1mA, R_{BE}=\infty$ | 30 | | | V |
| Emitter-to-Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E=10\mu A, I_C=0$ | 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. | | 45 | | ns |

Switching Time Test Circuit



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





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