

**2SC3689**

High h_{FE} , Low-Frequency General-Purpose Amplifier Applications

Applications

- Low frequency general-purpose amplifiers, drivers, muting circuits.

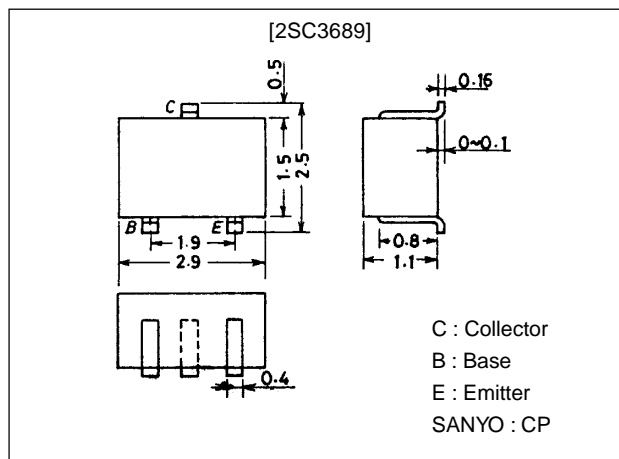
Features

- Small C_{ob} ($C_{ob}=1.5\text{pF}$ typ).
- Very small-sized package permitting 2SC3689-used sets to be made smaller, slimmer.
- Adoption of FBET process.
- High DC current gain ($h_{FE}=800$ to 3200).
- Low collector-to-emitter saturation voltage ($V_{CE(sat)}\leq 0.5\text{V}$).
- High V_{EBO} ($V_{EBO}\geq 15\text{V}$).

Package Dimensions

unit:mm

2018A



Specifications

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

| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------|-----------|------------|-------------|------------------|
| Collector-to-Base Voltage | V_{CB0} | | 60 | V |
| Collector-to-Emitter Voltage | V_{CE0} | | 50 | V |
| Emitter-to-Base Voltage | V_{EBO} | | 15 | V |
| Collector Current | I_C | | 100 | mA |
| Collector Current (Pulse) | I_{CP} | | 200 | mA |
| Collector Dissipation | P_C | | 200 | mW |
| Junction Temperature | T_J | | 125 | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | | -55 to +125 | $^\circ\text{C}$ |

Electrical Characteristics at $T_a = 25^\circ\text{C}$

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|---------------|--------------------------------------|---------|------|------|---------------|
| | | | min | typ | max | |
| Collector Cutoff Current | I_{CBO} | $V_{CB}=40\text{V}, I_E=0$ | | | 0.1 | μA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB}=10\text{V}, I_C=0$ | | | 0.1 | μA |
| DC Current Gain | h_{FE} | $V_{CE}=5\text{V}, I_C=10\text{mA}$ | 800 | 1500 | 3200 | |
| Gain-Bandwidth Product | f_T | $V_{CE}=10\text{V}, I_C=10\text{mA}$ | | 200 | | MHz |
| Output Capacitance | C_{ob} | $V_{CB}=10\text{V}, f=1\text{MHz}$ | | 1.5 | | pF |
| Collector-to-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=50\text{mA}, I_B=1\text{mA}$ | | 0.1 | 0.5 | V |
| Base-to-Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C=50\text{mA}, I_B=1\text{mA}$ | | 0.8 | 1.1 | V |

Marking : GY

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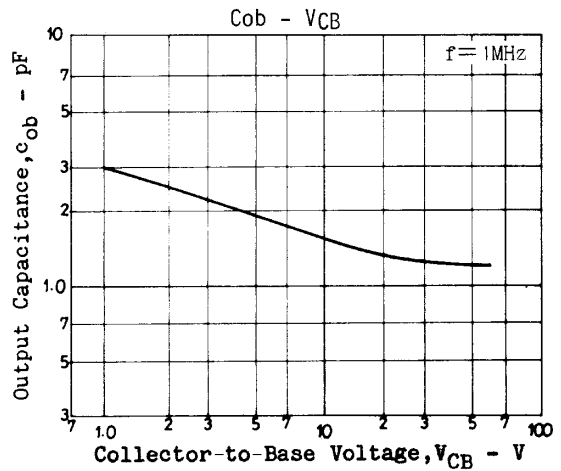
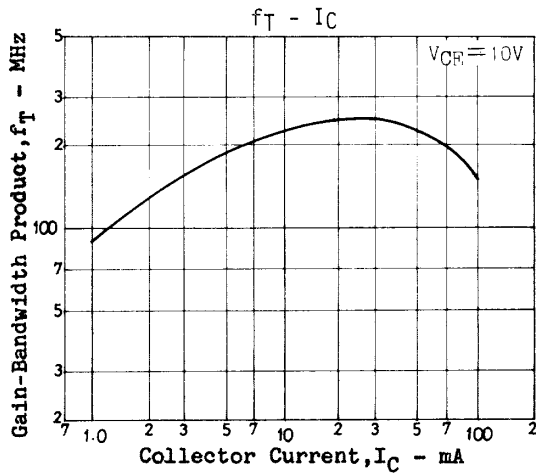
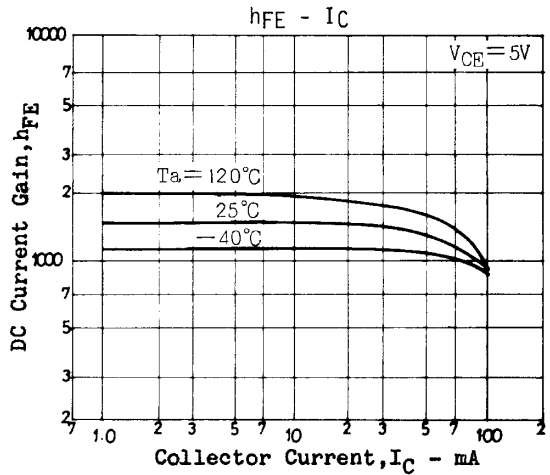
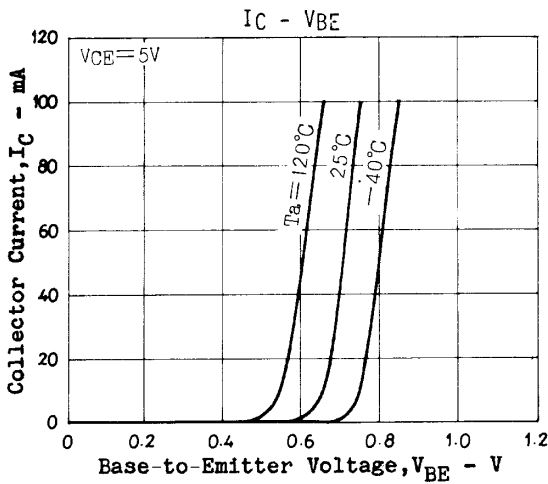
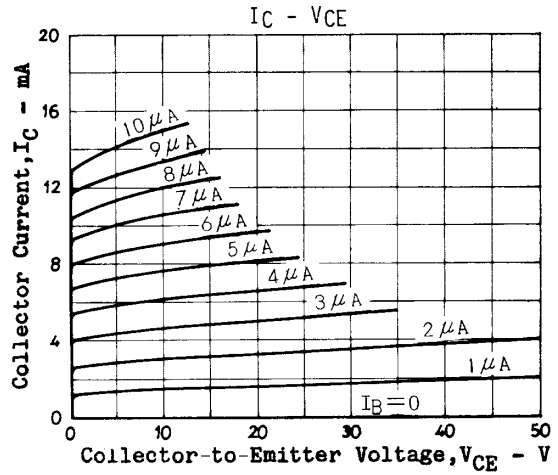
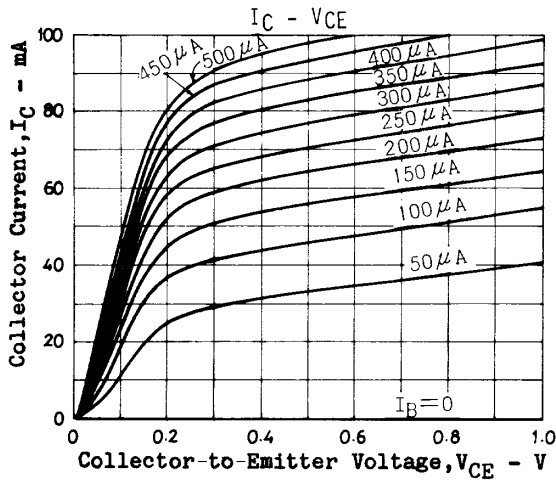
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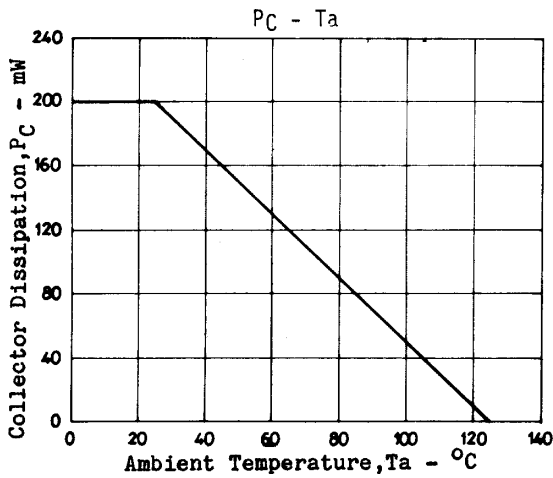
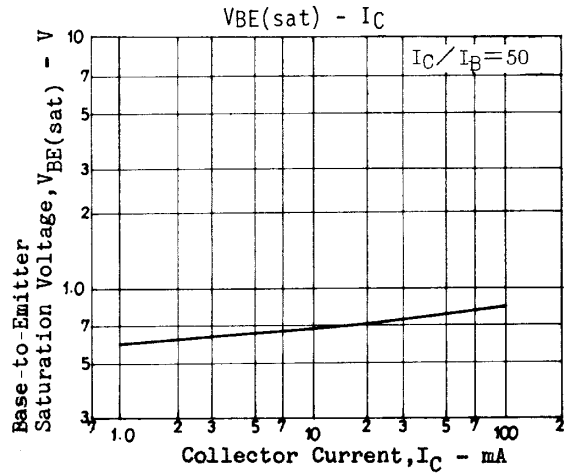
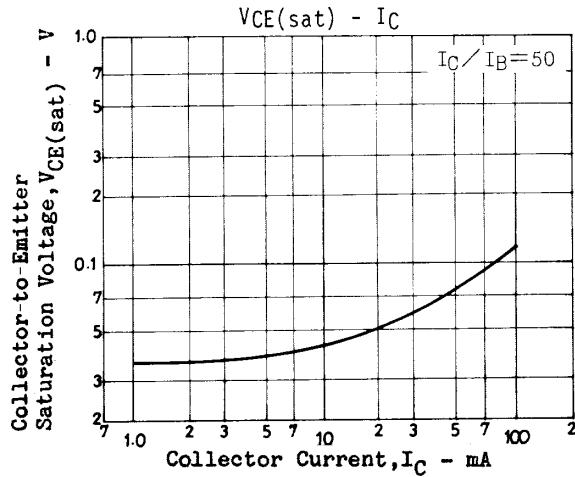
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2SC3689

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--|---------------|--------------------------|---------|-----|-----|------|
| | | | min | typ | max | |
| Collector-to-Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C=10\mu A, I_E=0$ | 60 | | | V |
| Collector-to-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C=1mA, R_{BE}=\infty$ | 50 | | | V |
| Emitter-to-Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E=10\mu A, I_C=0$ | 15 | | | V |





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