



## 2SA1450/2SC3708

### Low-Frequency Driver Applications

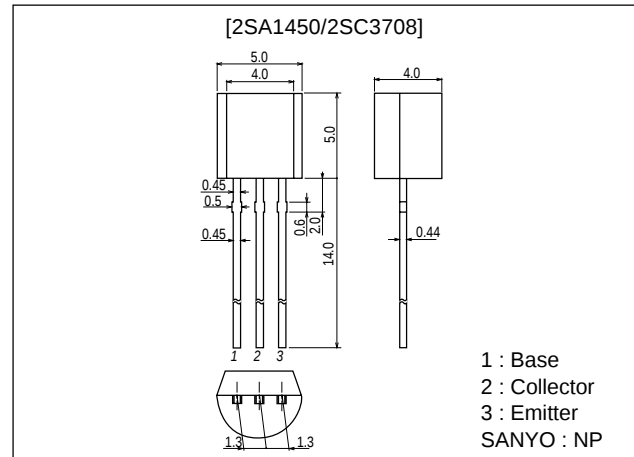
#### Features

- Adoption of FBET process.
- AF amp, AF power amp.
- High breakdown voltage :  $V_{CEO} > 80V$

#### Package Dimensions

unit:mm

2003B



() : 2SA1450

#### Specifications

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

| Parameter                    | Symbol    | Conditions | Ratings     | Unit       |
|------------------------------|-----------|------------|-------------|------------|
| Collector-to-Base Voltage    | $V_{CBO}$ |            | (-)100      | V          |
| Collector-to-Emitter Voltage | $V_{CEO}$ |            | (-)80       | V          |
| Emitter-to-Base Voltage      | $V_{EBO}$ |            | (-)5        | V          |
| Collector Current            | $I_C$     |            | (-)500      | mA         |
| Collector Current (Pulse)    | $I_{CP}$  |            | (-)800      | mA         |
| Base Current                 | $I_B$     |            | (-)100      | mA         |
| Collector Dissipation        | $P_C$     |            | 600         | 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 | $I_{CBO}$ | $V_{CB}=(-)60V, I_E=0$       |         |     | (-)0.1 | $\mu A$ |
| Emitter Cutoff Current   | $I_{EBO}$ | $V_{EB}=(-)4V, I_C=0$        |         |     | (-)0.1 | $\mu A$ |
| DC Current Gain          | $h_{FE1}$ | $V_{CE}=(-)5V, I_C=(-)50mA$  | 100*    |     | 400*   |         |
|                          | $h_{FE2}$ | $V_{CE}=(-)5V, I_C=(-)400mA$ | 60      |     |        |         |

\* : 2SA1450/2SC3708 are classified by 50mA  $h_{FE}$  as follows :

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| Rank     | R          | S          | T          |
|----------|------------|------------|------------|
| $h_{FE}$ | 100 to 200 | 140 to 280 | 200 to 400 |

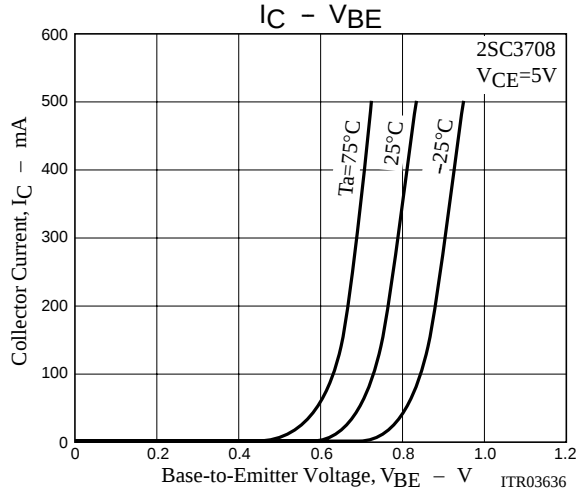
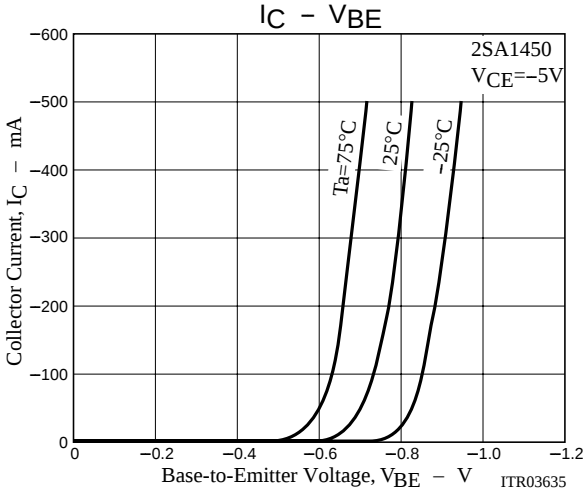
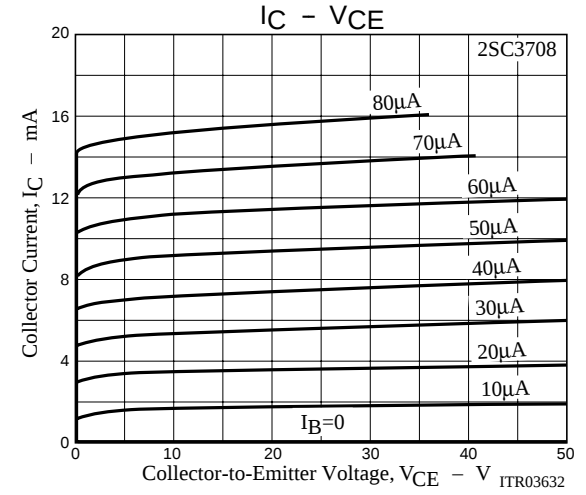
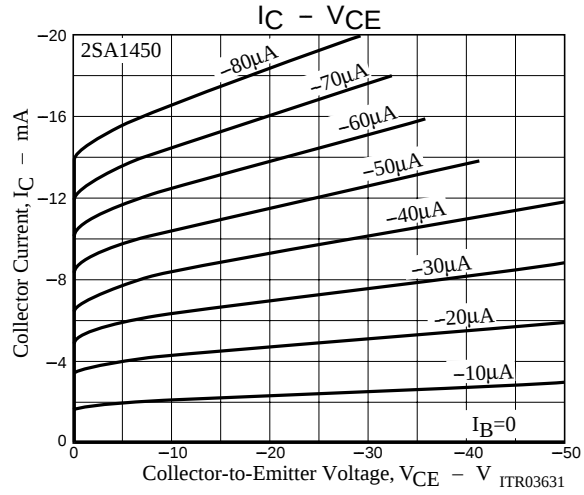
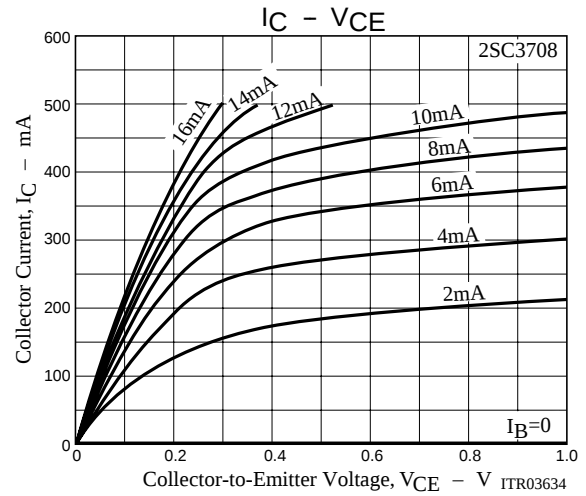
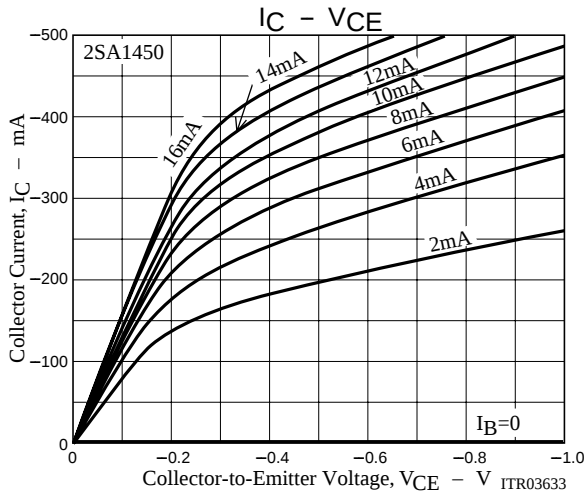
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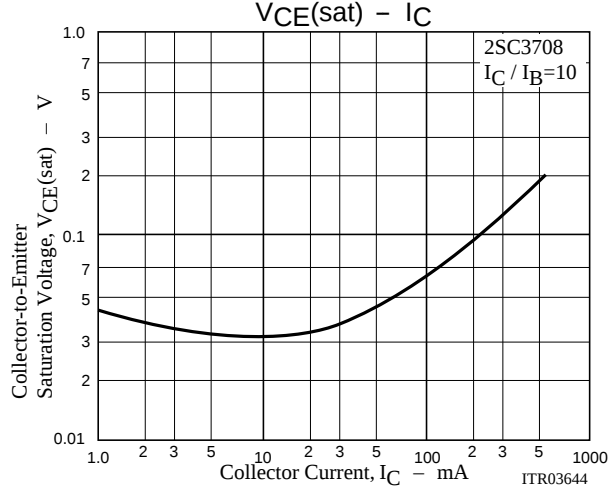
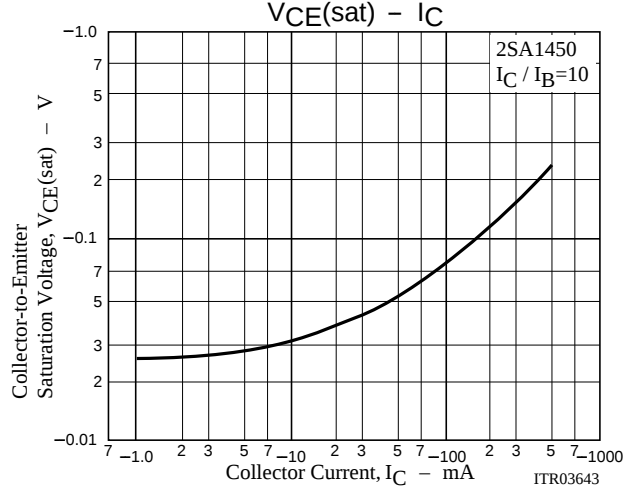
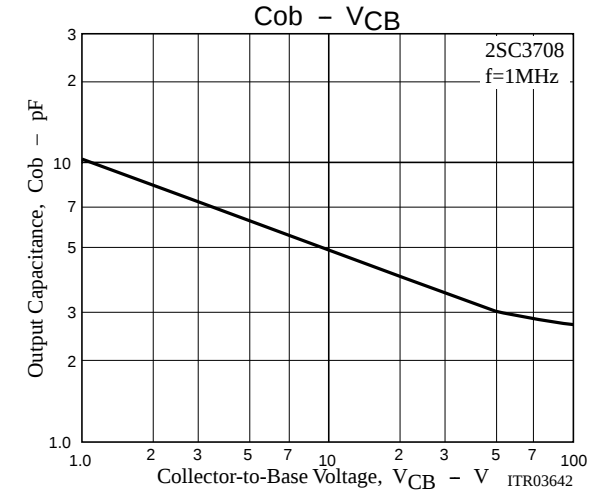
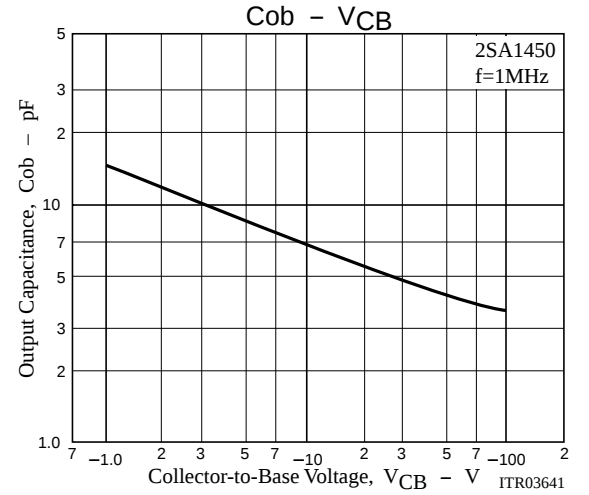
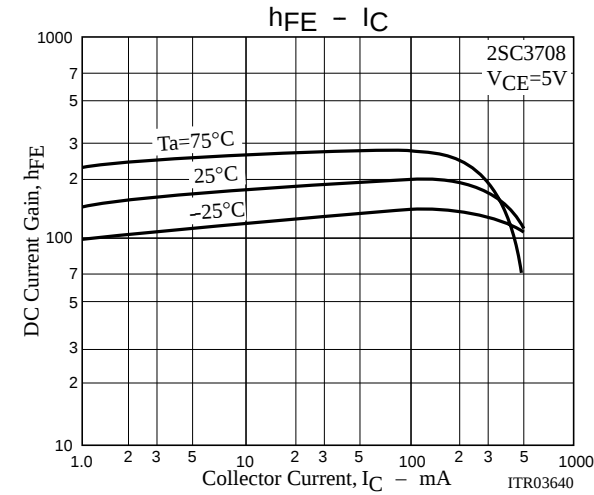
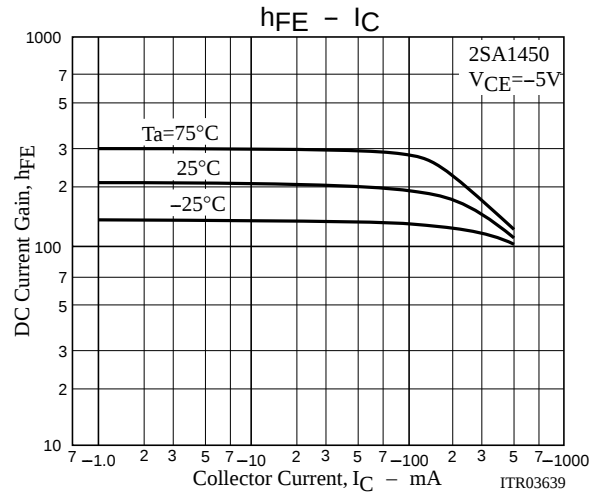
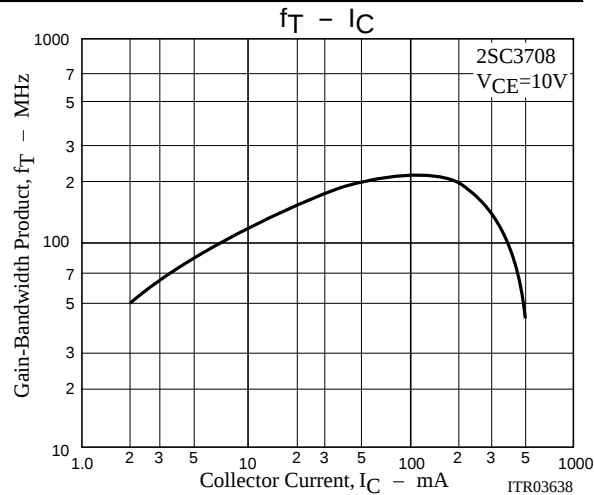
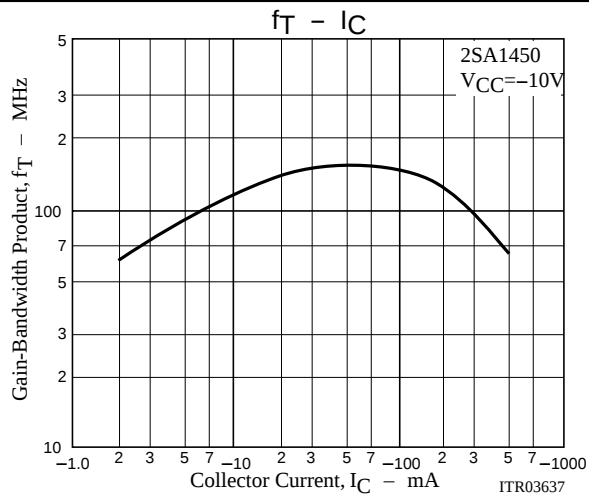
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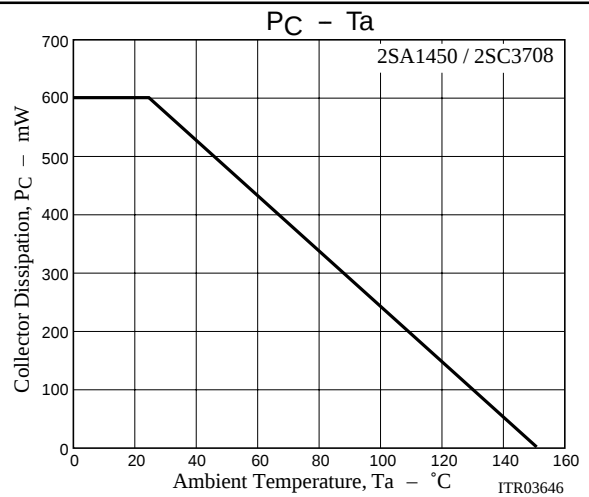
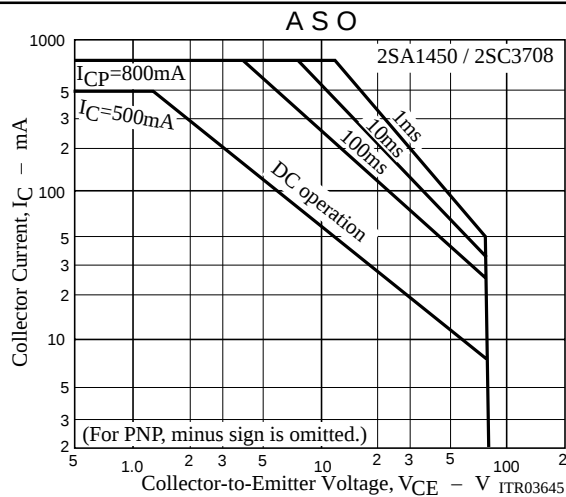
| Parameter                               | Symbol        | Conditions                   | Ratings |        |        | Unit |
|-----------------------------------------|---------------|------------------------------|---------|--------|--------|------|
|                                         |               |                              | min     | typ    | max    |      |
| Gain-Bandwidth Product                  | $f_T$         | $V_{CE}=(-)10V, I_C=(-)10mA$ |         | 120    |        | MHz  |
| Output Capacitance                      | $C_{ob}$      | $V_{CB}=(-)10V, f=1MHz$      |         | (7)5   |        | pF   |
| Collector-to-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=(-)400mA, I_B=(-)40mA$  |         | 0.16   |        | V    |
| Base-to-Emitter Saturation Voltage      | $V_{BE(sat)}$ | $I_C=(-)400mA, I_B=(-)40mA$  |         | (-0.2) | (-0.5) | V    |
| Collector-to-Base Breakdown Voltage     | $V_{(BR)CBO}$ | $I_C=(-)10\mu A, I_E=0$      | -100    |        |        | V    |
| Collector-to-Emitter Breakdown Voltage  | $V_{(BR)CEO}$ | $I_C=(-)1mA, R_{BE}=\infty$  | -80     |        |        | V    |
| Emitter-to-Base Breakdown Voltage       | $V_{(BR)EBO}$ | $I_E=(-)10\mu A, I_C=0$      | -5      |        |        | V    |



2SA1450/2SC3708



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