

**2SA1689**

TV Camera Deflection High-Voltage Driver Applications

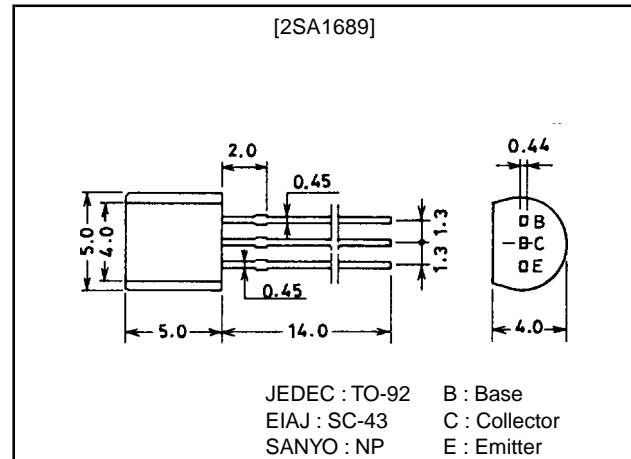
Features

- High breakdown voltage.
- Small reverse transfer capacitance and excellent high frequency characteristic.
- Excellent DC current gain.
- Adoption of FBET process.

Package Dimensions

unit:mm

2003A



Specifications

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

| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------|-----------|------------|-------------|------------------|
| Collector-to-Base Voltage | V_{CB0} | | -300 | V |
| Collector-to-Emitter Voltage | V_{CEO} | | -300 | V |
| Emitter-to-Base Voltage | V_{EBO} | | -5 | V |
| Collector Current | I_C | | -50 | mA |
| Collector Current (Pulse) | I_{CP} | | -100 | mA |
| Collector Dissipation | P_C | | 600 | mW |
| Junction Temperature | T_j | | 150 | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | | -55 to +150 | $^\circ\text{C}$ |

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

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|---------------|--|---------|-----|------|---------------|
| | | | min | typ | max | |
| Collector Cutoff Current | I_{CB0} | $V_{CB}=-200\text{V}, I_E=0$ | | | -0.1 | μA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB}=-4\text{V}, I_C=0$ | | | -0.1 | μA |
| DC Current Gain | h_{FE1} | $V_{CE}=-6\text{V}, I_C=-0.1\text{mA}$ | 100 | | 320 | |
| | h_{FE2} | $V_{CE}=-6\text{V}, I_C=-1\text{mA}$ | 100 | | | |
| Gain-Bandwidth Product | f_T | $V_{CE}=-30\text{V}, I_C=-10\text{mA}$ | | 70 | | MHz |
| Collector-to-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=-10\text{mA}, I_B=-1\text{mA}$ | | | -1.0 | V |
| Base-to-Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C=-10\text{mA}, I_B=-1\text{mA}$ | | | -1.0 | V |

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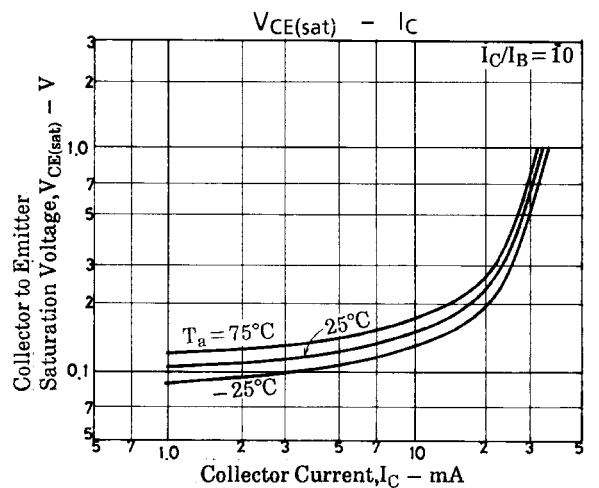
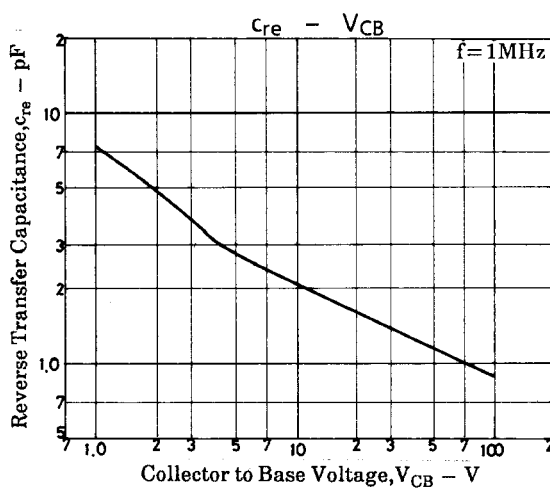
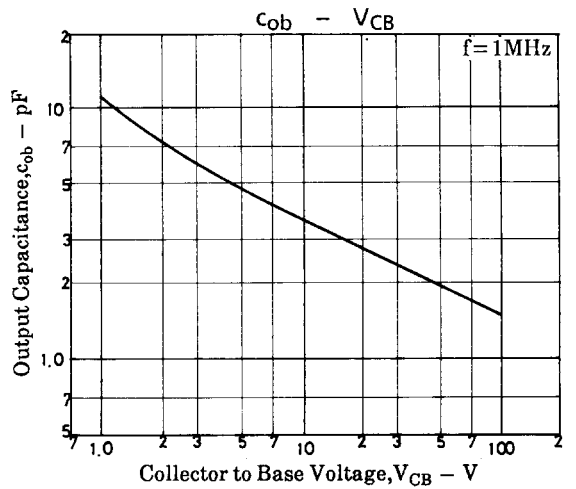
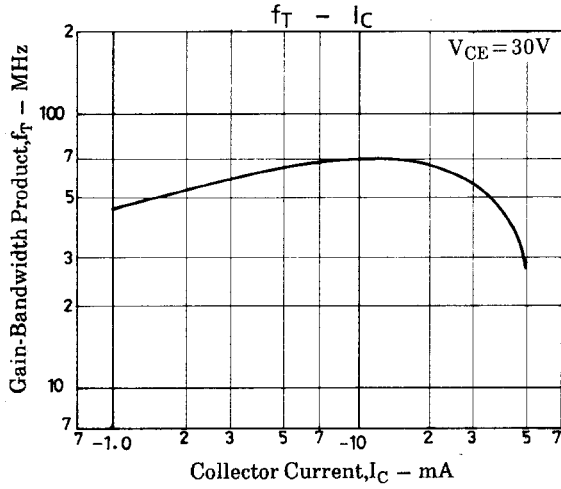
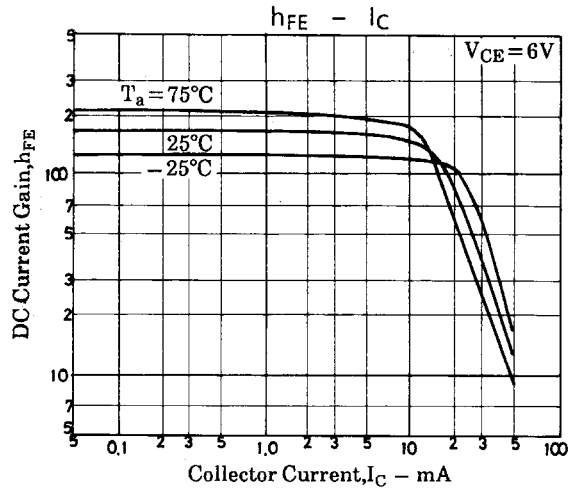
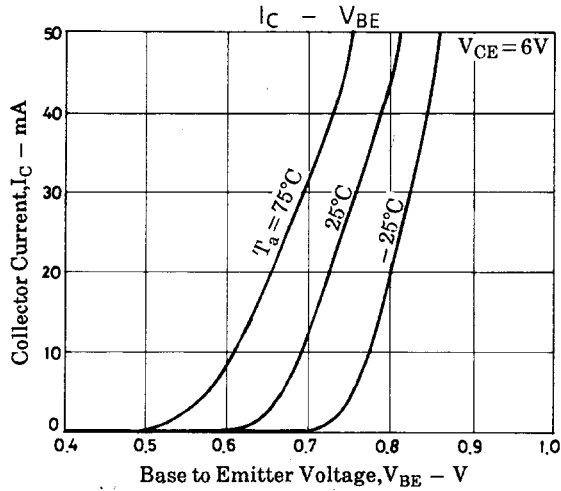
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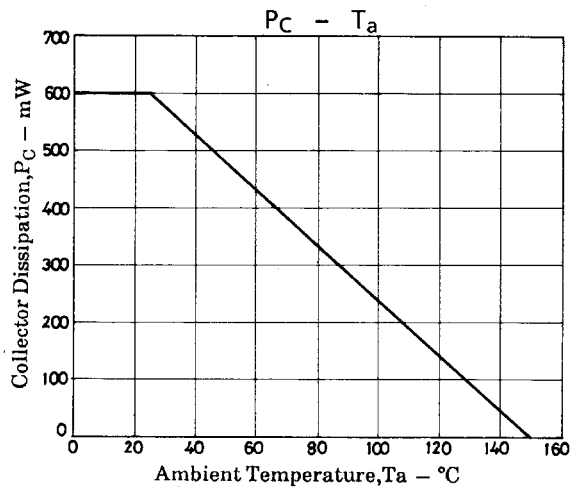
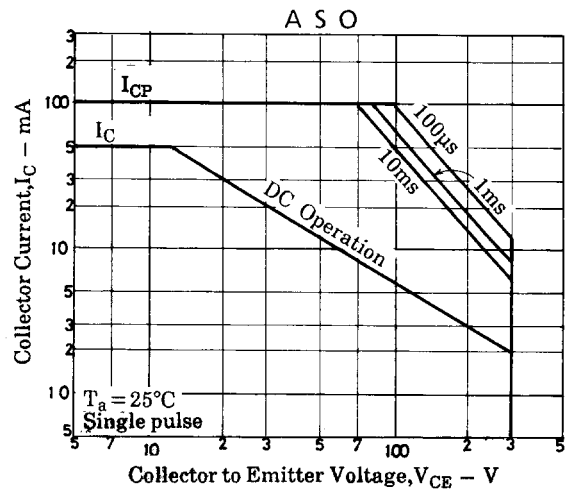
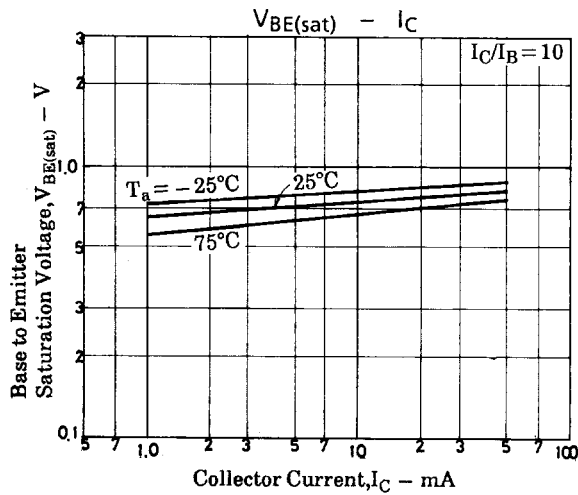
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--|----------------|-------------------------------|---------|-----|-----|------|
| | | | min | typ | max | |
| Collector-to-Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C = -10\mu A, I_E = 0$ | -300 | | | V |
| Collector-to-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C = -1mA, R_{BE} = \infty$ | -300 | | | V |
| Emitter-to-Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E = -10\mu A, I_C = 0$ | -5 | | | V |
| Collector Output Capacitance | C_{ob} | $V_{CB} = -30V, f = 1MHz$ | | 2.4 | | pF |
| Reverse Transfer Capacitance | C_{re} | $V_{CB} = -30V, f = 1MHz$ | | 1.5 | | pF |
| DC Current Gain Ratio | h_{FE} ratio | h_{FE1}/h_{FE2} | | 1.0 | | |

* : The 2SA1689 is classified by 0.1mA h_{FE} as follows :

| | | | | | |
|-----|---|-----|-----|---|-----|
| 100 | E | 200 | 160 | F | 320 |
|-----|---|-----|-----|---|-----|



2SA1689



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