

Transistors

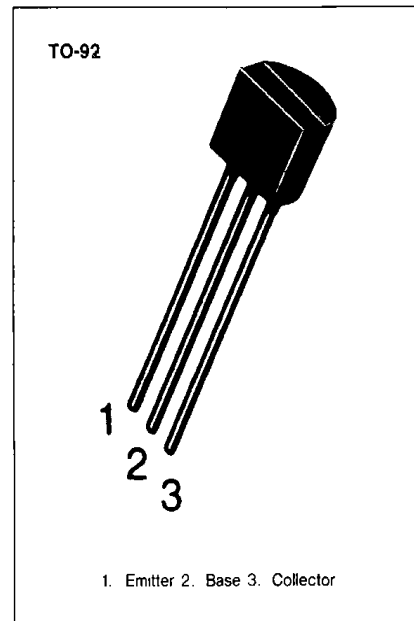
2SC1009

HIGH VOLTAGE AMPLIFIER

- High Collector-Base Voltage $V_{CBO} = 160V$
- Collector Current $I_C = 700mA$
- Collector Dissipation $P_C = 800mW$
- Complement to KSA709

ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ C$)

| Characteristic | Symbol | Rating | Unit |
|---------------------------|-----------|-----------|------------|
| Collector-Base Voltage | V_{CBO} | 160 | V |
| Collector-Emitter Voltage | V_{CEO} | 140 | V |
| Emitter-Base Voltage | V_{EBO} | 8 | V |
| Collector Current | I_C | 700 | mA |
| Collector Dissipation | P_C | 800 | mW |
| Junction Temperature | T_j | 150 | $^\circ C$ |
| Storage Temperature | T_{stg} | -55 ~ 150 | $^\circ C$ |



ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ C$)

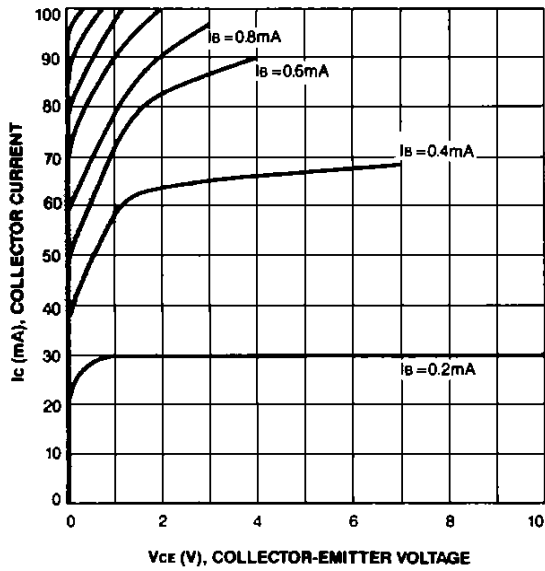
| Characteristic | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--|---------------|---------------------------------------|-----|------|-----|---------|
| Collector-Base Breakdown Voltage | BV_{CBO} | $I_C = 100\mu A, I_E = 0$ | 160 | | | V |
| Collector-Emitter Breakdown Voltage | BV_{CEO} | $I_C = 10mA, I_B = 0$ | 140 | | | V |
| Emitter-Base Breakdown Voltage | BV_{EBO} | $I_E = 10\mu A, I_C = 0$ | 8 | | | V |
| Collector Cut-off Current (Continuous) | I_{CBO} | $V_{CB} = 60V, I_E = 0$ | | | 0.1 | μA |
| Emitter Cut-off Current | I_{EBO} | $V_{EB} = 5V, I_C = 0$ | | | 0.1 | μA |
| DC Current Gain | h_{FE} | $V_{CE} = 2V, I_C = 50mA$ | 40 | | 400 | |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = 200mA, I_B = 20mA$ | | 0.2 | 0.7 | V |
| Base-Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C = 200mA, I_B = 20mA$ | | 0.86 | 1.0 | V |
| Current Gain-Bandwidth Product | f_T | $V_{CE} = 10V, I_C = 50mA$ | 30 | 50 | | MHz |
| Output Capacitance | C_{ob} | $V_{CB} = 10V, I_E = 0$ $f = 1MHz$ | | 8 | | pF |

h_{FE} CLASSIFICATION

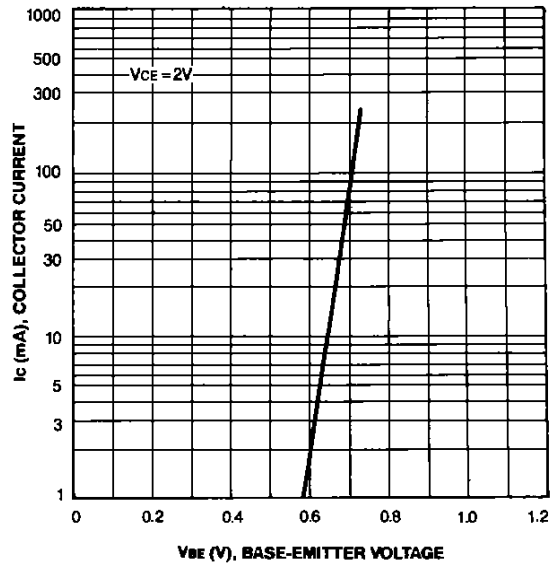
| Classification | R | O | Y | G |
|----------------|-------|--------|---------|---------|
| h_{FE} | 40-80 | 70-140 | 120-240 | 200-400 |



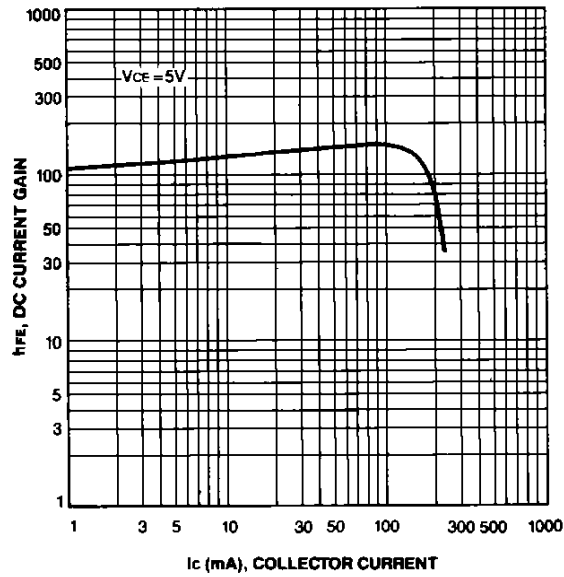
STATIC CHARACTERISTIC



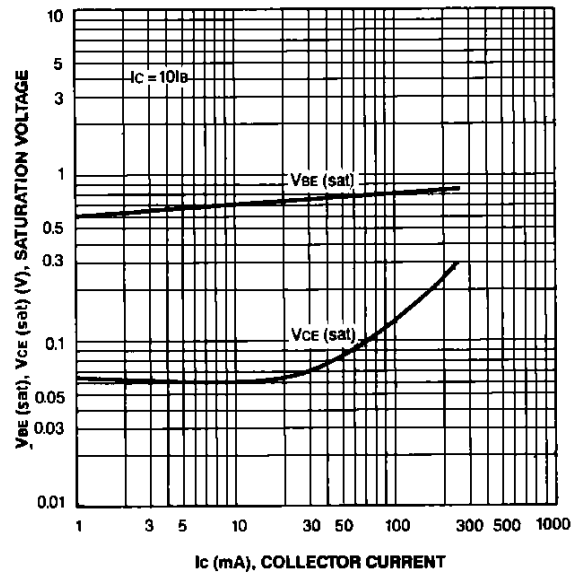
BASE-EMITTER ON VOLTAGE



DC CURRENT GAIN



**BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE**



COLLECTOR OUTPUT CAPACITANCE

