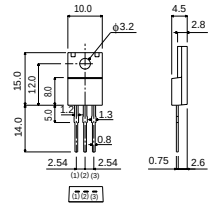
# High-voltage Switching (Audio output amplifier transistor, TV velocity modulation transistor) (–160V, –1.5A)

## 2SA2005

### ●Features

1) Flat DC current gain characteristics.
2) High breakdown voltage. ($BV_{CEO}$ = –160V)
3) High $f_T$. (Typ. 150MHz)
4) Wide SOA (safe operating area).
5) Complements the 2SC5511.

### ●External dimensions (Units : mm)




(1) Base(Gate)
(2) Collector(Drain)
(3) Emitter(Source)

ROHM : TO-220FN

### ●Absolute maximum ratings (Ta = 25°C)

| Parameter | Symbol | Limits | Unit |
|---|---|---|---|
| Collector-base voltage | $V_{CBO}$ | –160 | V |
| Collector-emitter voltage | $V_{CEO}$ | –160 | V |
| Emitter-base voltage | $V_{EBO}$ | –5 | V |
| Collector current | $I_C$ | –1.5 | A |
| Collector power dissipation | $P_C$ | 2 | W |
| | | 20 | W (Tc = 25°C) |
| Junction temperature | Tj | 150 | °C |
| Storage temperature | Tstg | –55~+150 | °C |

### ●Packaging specifications and $h_{FE}$

| Type | 2SA2005 |
|---|---|
| Package | TO-220FN |
| $h_{FE}$ | DE |
| Code | - |
| Basic ordering unit | 500 |

### ●Electrical characteristics (Ta = 25°C)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|---|---|---|---|---|---|---|
| Collector-emitter breakdown voltage | $BV_{CEO}$ | –160 | – | – | V | $I_C$ = –1mA |
| Collector-base breakdown voltage | $BV_{CBO}$ | –160 | – | – | V | $I_C$ = –50μA |
| Emitter-base breakdown voltage | $BV_{EBO}$ | –5 | – | – | V | $I_E$ = –50μA |
| Collector cutoff current | $I_{CBO}$ | – | – | –1 | μA | $V_{CB}$ = –160V |
| Emitter cutoff current | $I_{EBO}$ | – | – | –1 | μA | $V_{EB}$ = –4V |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | – | – | –1 | V | $I_C/I_B$ = –1A/–0.1A |
| DC current transfer ratio | $h_{FE}$ | 60 | – | 200 | – | $V_{CE}$ = –5V , $I_C$ = –0.1A |
| Transition frequency | $f_T$ | – | 150 | – | MHz | $V_{CE}$ = –10V , $I_E$ = –0.2A , f = 100MHz |
| Output capacitance | Cob | – | 35 | – | pF | $V_{CB}$ = –10V , $I_E$ = 0A , f = 1MHz |