

# Power Transistor (−50V, −3A)

## 2SA1797

### ●Features

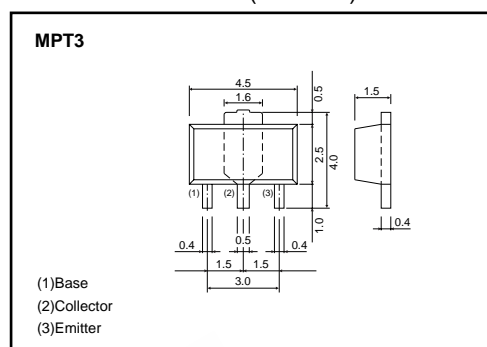
- 1) Low saturation voltage.  
 $V_{CE(sat)} = -0.35V$  (Max.) at  $I_C / I_B = -1A / -50mA$ .
- 2) Excellent DC current gain characteristics.
- 3) Complements the 2SC4672.

### ●Packaging specifications

|                              |         |
|------------------------------|---------|
| Type                         | 2SA1797 |
| Package                      | MPT3    |
| hFE                          | PQ      |
| Marking                      | AG *    |
| Code                         | T100    |
| Basic ordering unit (pieces) | 1000    |

\*Denotes hFE

### ●External dimensions (Unit : mm)



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

| Parameter                   | Symbol           | Limits   | Unit         |
|-----------------------------|------------------|----------|--------------|
| Collector-base voltage      | $V_{CBO}$        | −50      | V            |
| Collector-emitter voltage   | $V_{CEO}$        | −50      | V            |
| Emitter-base voltage        | $V_{EBO}$        | −6       | V            |
| Collector current           | $I_C$            | −3       | A (DC)       |
|                             |                  | −6       | A (Pulse) *1 |
| Collector power dissipation | 2SA1797<br>$P_C$ | 0.5      | W *2         |
|                             |                  | 2        |              |
| Junction temperature        | $T_J$            | 150      | °C           |
| Storage temperature         | $T_{stg}$        | −55~+150 | °C           |

\*1 Single pulse,  $P_w=10ms$

\*2 When mounted on a  $40 \times 40 \times 0.7mm$  ceramic board.

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

| Parameter                            | Symbol        | Min. | Typ.  | Max.  | Unit    | Conditions                               |
|--------------------------------------|---------------|------|-------|-------|---------|--|
| Collector-base breakdown voltage     | $BV_{CBO}$    | −50  | −     | −     | V       | $I_C = -50\mu A$                         |
| Collector-emitter breakdown voltage  | $BV_{CEO}$    | −50  | −     | −     | V       | $I_C = -1mA$                             |
| Emitter-base breakdown voltage       | $BV_{EBO}$    | −6   | −     | −     | V       | $I_E = -50\mu A$                         |
| Collector cutoff current             | $I_{CBO}$     | −    | −     | −0.1  | $\mu A$ | $V_{CB} = -50V$                          |
| Emitter cutoff current               | $I_{EBO}$     | −    | −     | −0.1  | $\mu A$ | $V_{EB} = -5V$                           |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | −    | −0.15 | −0.35 | V       | $I_C / I_B = -1A / -50mA$ *              |
| DC current transfer ratio            | hFE           | 82   | −     | 270   | −       | $V_{CE} / I_C = -2V / -0.5A$             |
| Transition frequency                 | $f_T$         | −    | 200   | −     | MHz     | $V_{CE} = -2V, I_E = 0.5A, f = 100MHz$ * |
| Output capacitance                   | $C_{ob}$      | −    | 36    | −     | pF      | $V_{CB} = -10V, I_E = 0A, f = 1MHz$      |

\* Measured using pulse current

Transistors

● Electrical characteristic curves

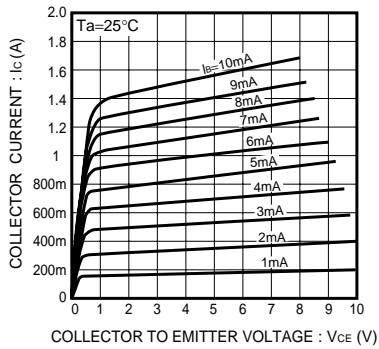


Fig.1 Grounded emitter output characteristics

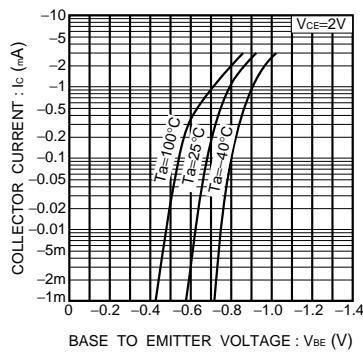


Fig.2 Grounded emitter propagation characteristics

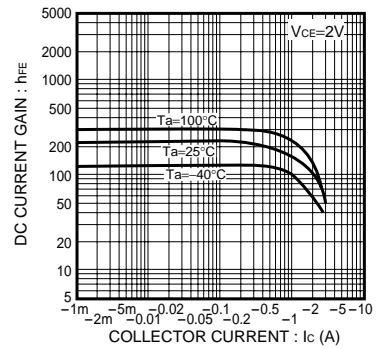


Fig.3 DC current gain vs. collector current

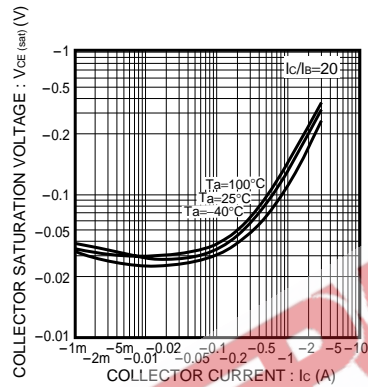


Fig.4 Collector-emitter saturation voltage vs. collector current

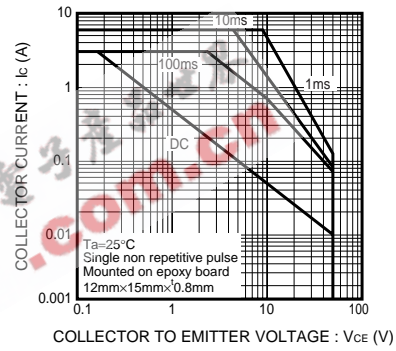


Fig.5 Safe operating area

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