

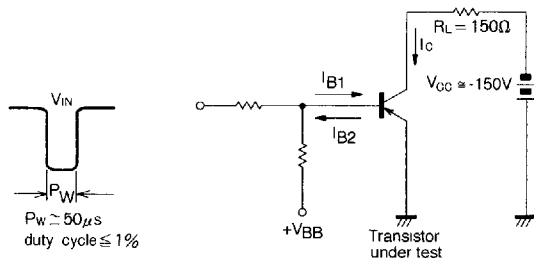
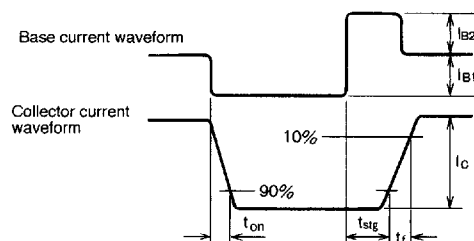


**Electrical characteristics (unless otherwise noted,  $T_a = 25^\circ\text{C}$ )**

| Parameter                               | Symbol        | Min  | Typical | Max  | Unit          | Conditions                                                                                                       |
|-----------------------------------------|---------------|------|---------|------|---------------|------------------------------------------------------------------------------------------------------------------|
| Collector-to-base breakdown voltage     | $BV_{CBO}$    | -400 |         |      | V             | $I_C = -50\ \mu\text{A}$                                                                                         |
| Collector-to-emitter breakdown voltage  | $BV_{CEO}$    | -400 |         |      | V             | $I_C = -1\ \text{mA}$                                                                                            |
| Emitter-to-base breakdown voltage       | $BV_{EBO}$    | -7   |         |      | V             | $I_E = -50\ \mu\text{A}$                                                                                         |
| Collector cutoff current                | $I_{CBO}$     |      |         | -1.0 | $\mu\text{A}$ | $V_{CB} = -400\ \text{V}$                                                                                        |
| Emitter cutoff current                  | $I_{EBO}$     |      |         | -1.0 | $\mu\text{A}$ | $V_{EB} = -5\ \text{V}$                                                                                          |
| DC current gain                         | $h_{FE1}$     | 56   | 100     | 180  |               | $V_{CE} = -5\ \text{V}$ , $I_C = -100\ \text{mA}$                                                                |
|                                         | $h_{FE2}$     | 6    |         |      |               | $V_{CE} = -5\ \text{V}$ , $I_C = -0.5\ \text{mA}$                                                                |
| Collector-to-emitter saturation voltage | $V_{CE(sat)}$ |      | -0.3    | -0.5 | V             | $I_C/I_B = -500\ \text{mA}/-100\ \text{mA}$                                                                      |
| Base-to-emitter saturation voltage      | $V_{BE(sat)}$ |      |         | -1.2 | V             | $I_C/I_B = -500\ \text{mA}/-100\ \text{mA}$                                                                      |
| Transition frequency                    | $f_T$         |      | 18      |      | MHz           | $V_{CE} = -10\ \text{V}$ , $I_E = 100\ \text{mA}$ , $f = 5\ \text{MHz}$                                          |
| Output capacitance                      | $C_{ob}$      |      | 30      |      | pF            | $V_{CB} = -10\ \text{V}$ , $I_E = 0\ \text{mA}$ , $f = 1\ \text{MHz}$                                            |
| Turn on time                            | $t_{on}$      |      | 0.2     |      | $\mu\text{s}$ | $I_C = -1\ \text{A}$ , $R_L = 150\ \Omega$ ,<br>$I_{B1} = -I_{B2} = -200\ \text{mA}$ , $V_{CC} = -150\ \text{V}$ |
| Storage time                            | $t_{stg}$     |      | -1.8    |      | $\mu\text{s}$ |                                                                                                                  |
| Fall time                               | $t_f$         |      | 0.4     |      | $\mu\text{s}$ |                                                                                                                  |

 **$h_{FE}$  rankings**

| Item     | N        | P        |
|----------|----------|----------|
| $h_{FE}$ | 56 ~ 120 | 82 ~ 180 |

**Test circuits****Figure 1 Switching time test circuit****Figure 2 Switching time waveforms**

Electrical characteristic curves

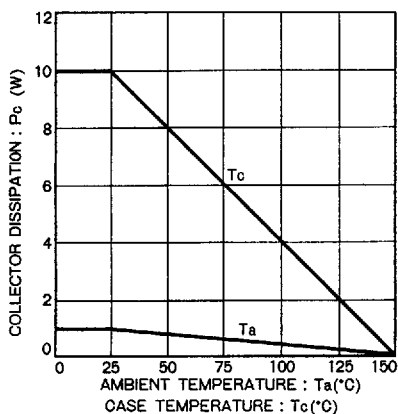


Figure 3

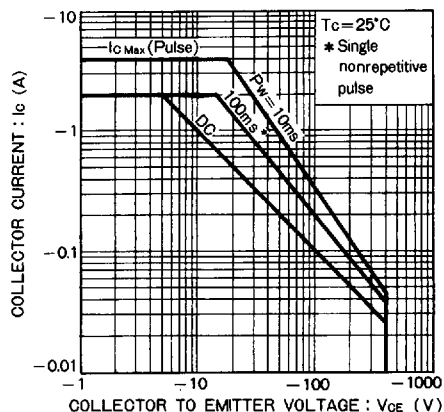


Figure 4

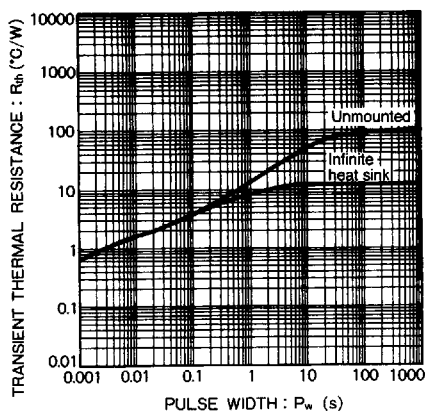


Figure 5

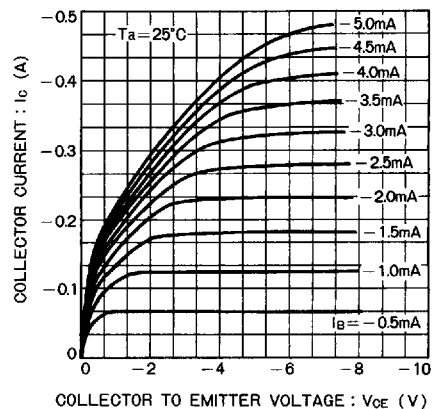


Figure 6

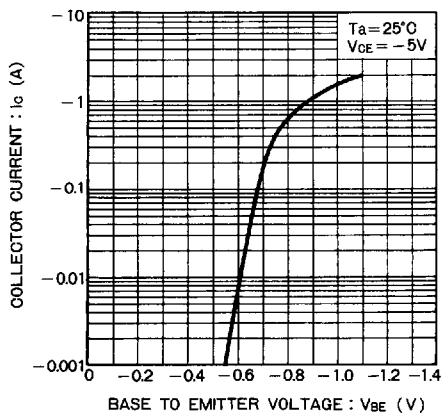


Figure 7

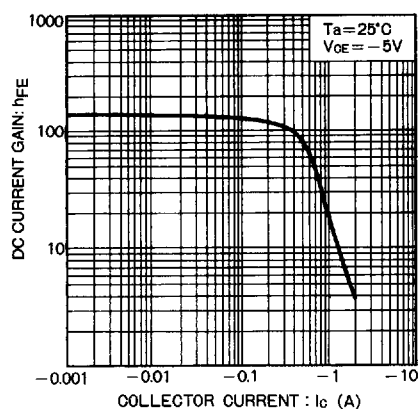
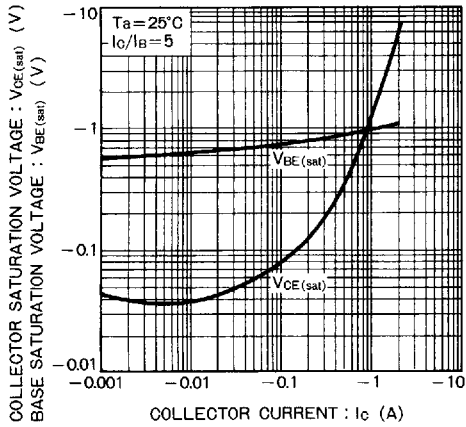
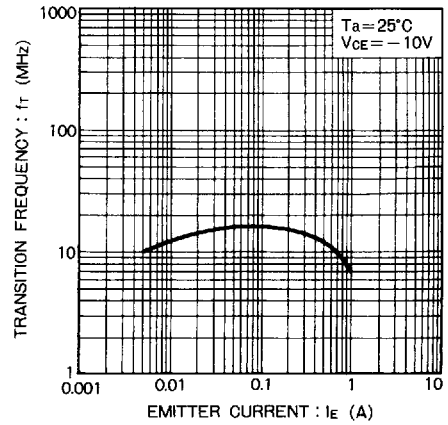


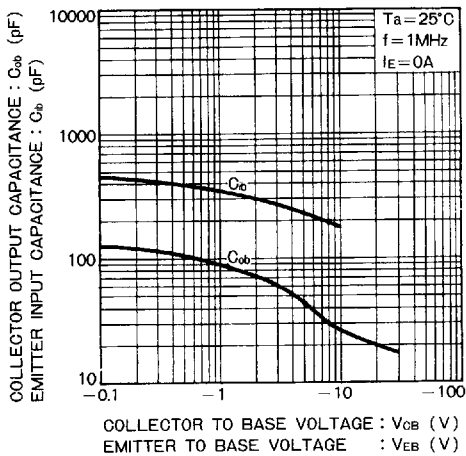
Figure 8



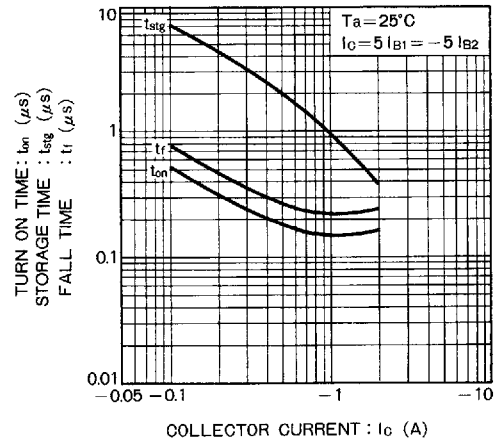
**Figure 9**



**Figure 10**



**Figure 11**



**Figure 12**

## Ordering information

|                                                    |      |
|----------------------------------------------------|------|
| Package                                            | Tape |
| Code                                               | TL   |
| Basic order quantity                               | 2500 |
| 2SA1862F5                                          | ★    |
| ★ = Standard, ☆ = Semi-standard, * = Special order |      |