

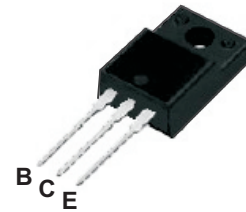
## High Frequency PNP Power Transistor -1A/-230V/20W

### FEATURES

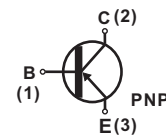
- High transition frequency:  
 $f_T = 70\text{MHz}$  (typ.)
- Complementary to 2SC4793AF
- TO-220F package which can be installed to the heat sink with one screw

### APPLICATIONS

- Power amplifier
- Driver stage amplifier



TO-220F  
(2SA1837AF)



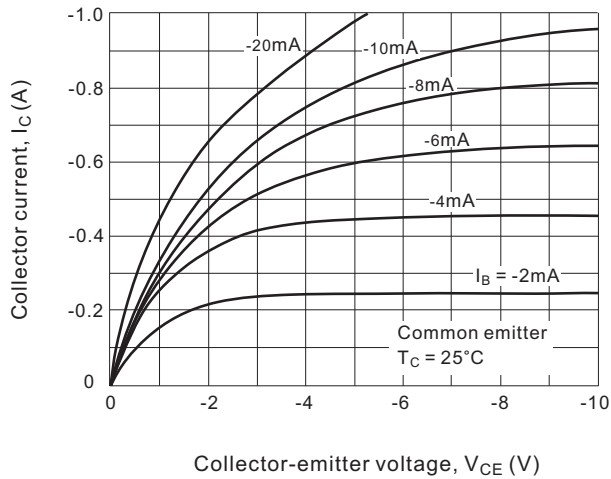
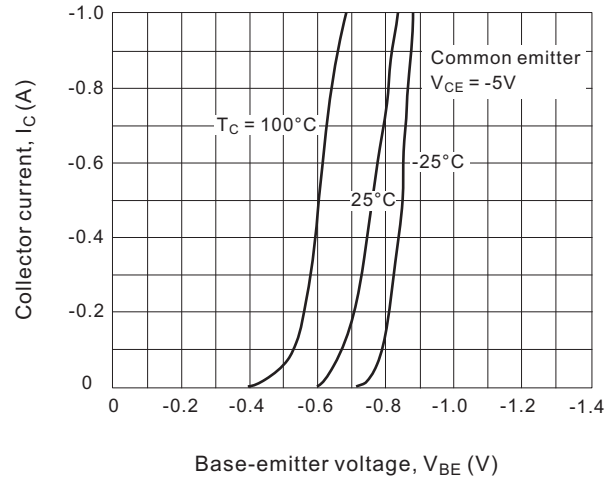
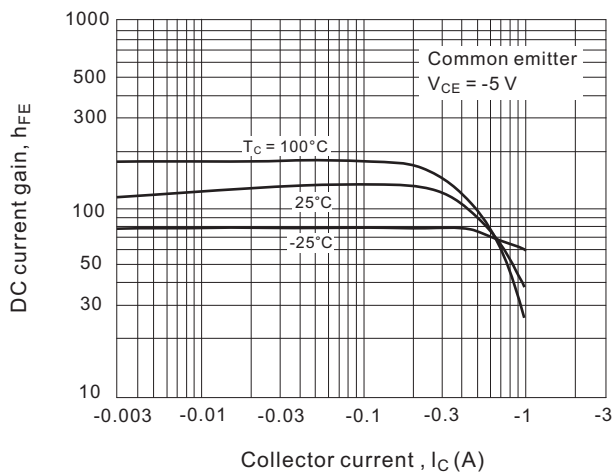
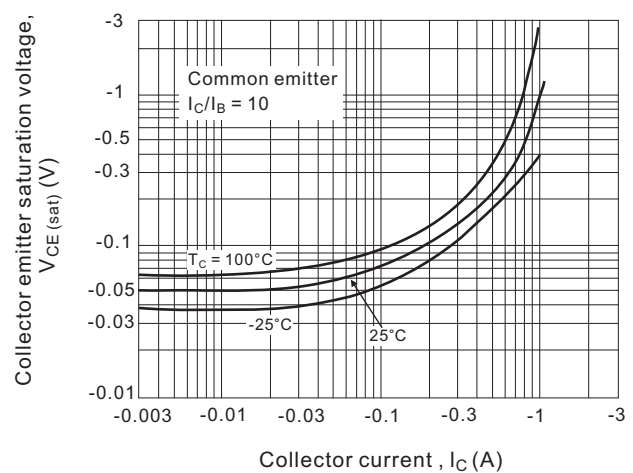
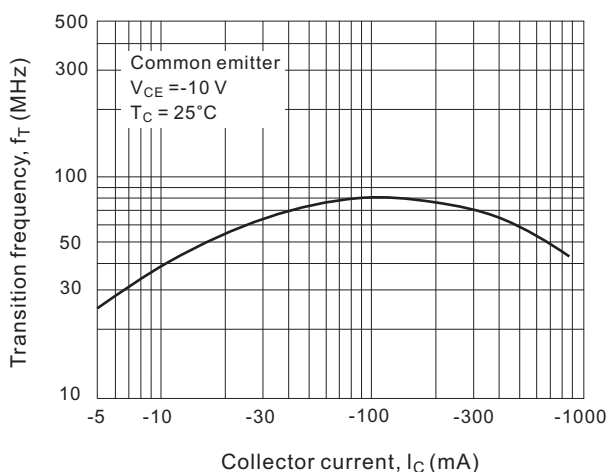
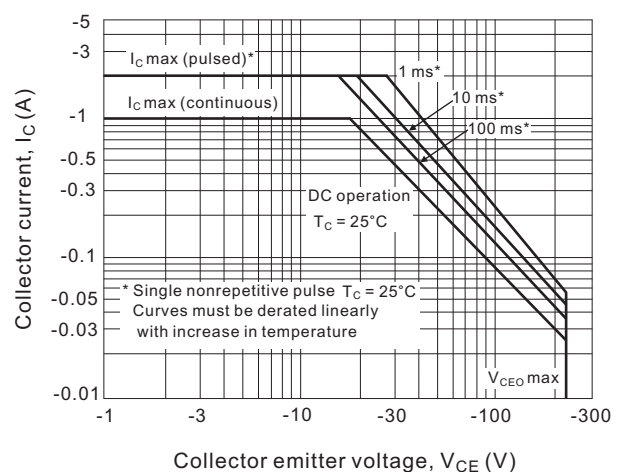
### ABSOLUTE MAXIMUM RATINGS ( $T_C = 25^\circ\text{C}$ unless otherwise specified)

| SYMBOL           | PARAMETER                    | TEST CONDITIONS          | VALUE      | UNIT             |
|------------------|------------------------------|--------------------------|------------|------------------|
| $V_{CBO}$        | Collector to base voltage    |                          | -230       | V                |
| $V_{CEO}$        | Collector to emitter voltage | $I_B = 0$                | -230       |                  |
| $V_{EBO}$        | Emitter to base voltage      | $I_C = 0$                | -5         |                  |
| $I_C$            | Collector current-continuous |                          | -1         | A                |
| $I_{CM}(I_{cp})$ | Peak collector current       | $t_p < 5\text{ ms}$      | -2         |                  |
| $I_B$            | Base Current                 |                          | -0.1       |                  |
| $P_C$            | Collector power dissipation  | $T_C = 25^\circ\text{C}$ | 20         | W                |
|                  |                              | $T_a = 25^\circ\text{C}$ | 2.0        |                  |
| $T_J$            | Junction temperature         |                          | 150        | $^\circ\text{C}$ |
| $T_{STG}$        | Storage temperature          |                          | -55 to 150 |                  |

### ELECTRICAL CHARACTERISTICS ( $T_C = 25^\circ\text{C}$ unless otherwise specified)

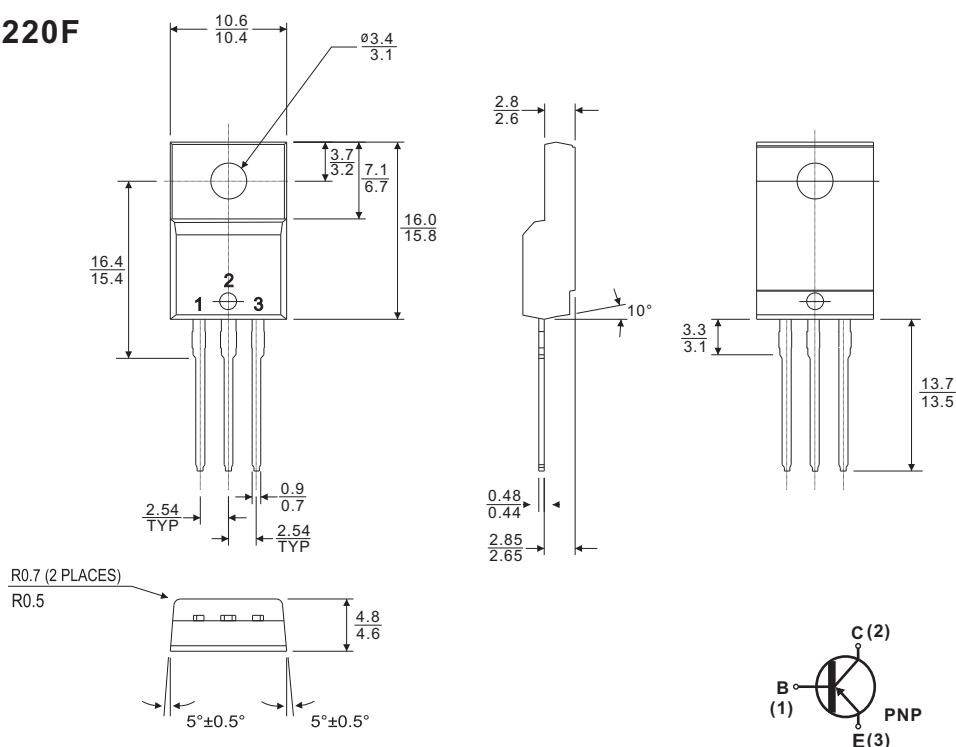
| SYMBOL         | PARAMETER                                        | TEST CONDITIONS                                               | Min. | Typ. | Max. | UNIT          |
|----------------|--------------------------------------------------|---------------------------------------------------------------|------|------|------|---------------|
| $I_{CBO}$      | Collector cutoff current                         | $V_{CBO} = -230\text{V}, I_E = 0$<br>$T_C = 25^\circ\text{C}$ |      |      | -1.0 | $\mu\text{A}$ |
|                |                                                  | $T_C = 125^\circ\text{C}$                                     |      |      | -100 |               |
| $I_{EBO}$      | Emitter cutoff current                           | $V_{EBO} = -5\text{V}, I_C = 0$                               |      |      | -1.0 |               |
| $V_{(BR)CEO}$  | Collector to emitter breakdown voltage           | $I_B = 0, I_C = -100\text{mA}$                                | -230 |      |      | V             |
| $V_{CE(sat)*}$ | Collector to emitter saturation voltage          | $I_C = -0.5\text{A}, I_B = -50\text{mA}$                      |      |      | -1.5 |               |
| $V_{BE}$       | Base to emitter voltage                          | $I_C = -0.5\text{A}, V_{CE} = -5\text{V}$                     |      |      | -1.0 |               |
| $h_{FE*}$      | Forward current transfer ratio (DC current gain) | $I_C = -0.1\text{A}, V_{CE} = -5\text{V}$                     | 100  |      | 320  |               |
| $f_T$          | Transition frequency                             | $V_{CE} = -10\text{V}, I_C = -100\text{mA}$                   |      | 70   |      | MHz           |
| $C_{ob}$       | Collector output capacitance                     | $V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$              |      | 30   |      | pF            |

\*Pulsed: Pulse duration= 300 $\mu\text{s}$ , duty cycle= 1.5%.

**Fig.1  $I_C$ - $V_{CE}$  Characteristics**

**Fig.2  $I_C$ - $V_{BE}$  Temperature characteristics**

**Fig.3  $h_{FE}$ - $I_C$  Characteristics**

**Fig.4  $V_{CE(sat)}$  -  $I_C$  Temperature characteristics**

**Fig.5  $f_T$ - $I_C$  Characteristics**

**Fig.6 Safe operating area (SOA)**


## Case Style

### TO-220F



All dimensions in millimeters

