



## 2SA1753/2SC4577

### Low-Frequency General-Purpose Amplifier Applications

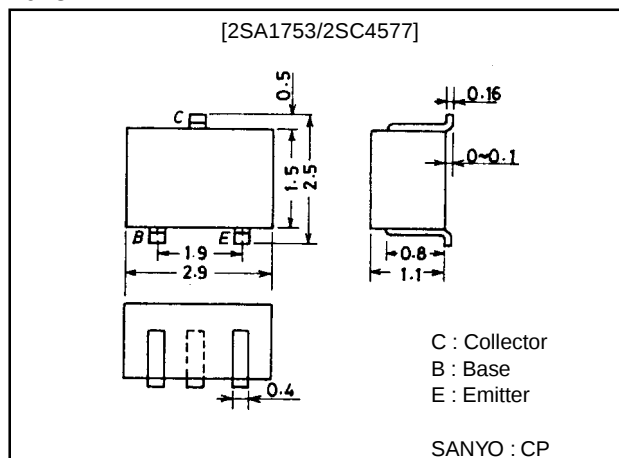
#### Features

- Small-sized package permitting the 2SA1753/2SC4577-applied sets to be made small and slim.
- Low collector-to-emitter saturation voltage.

#### Package Dimensions

unit:mm

2018A



() : 2SA1753

#### Specifications

##### Absolute Maximum Ratings at Ta = 25°C

| Parameter                    | Symbol    | Conditions | Ratings     | Unit |
|------------------------------|-----------|------------|-------------|------|
| Collector-to-Base Voltage    | $V_{CBO}$ |            | (-)20       | V    |
| Collector-to-Emitter Voltage | $V_{CEO}$ |            | (-)15       | V    |
| Emitter-to-Base Voltage      | $V_{EBO}$ |            | (-)5        | V    |
| Collector Current            | $I_C$     |            | (-)500      | mA   |
| Collector Current (Pulse)    | $I_{CP}$  |            | (-)1        | A    |
| Collector Dissipation        | $P_C$     |            | 200         | mW   |
| Junction Temperature         | $T_J$     |            | 150         | °C   |
| Storage Temperature          | $T_{stg}$ |            | -55 to +150 | °C   |

##### Electrical Characteristics at Ta = 25°C

| Parameter                | Symbol    | Conditions                   | Ratings |       |        | Unit |
|--------------------------|-----------|------------------------------|---------|-------|--------|------|
|                          |           |                              | min     | typ   | max    |      |
| Collector Cutoff Current | $I_{CBO}$ | $V_{CB}=(-)15V, I_E=0$       |         |       | (-)0.1 | μA   |
| Emitter Cutoff Current   | $I_{EBO}$ | $V_{EB}=(-)4V, I_C=0$        |         |       | (-)0.1 | μA   |
| DC Current Gain          | $h_{FE1}$ | $V_{CE}=(-)2V, I_C=(-)10mA$  | 135*    |       | 600*   |      |
|                          | $h_{FE2}$ | $V_{CE}=(-)2V, I_C=(-)400mA$ | (70)80  |       |        |      |
| Gain-Bandwidth Product   | $f_T$     | $V_{CE}=(-)2V, I_C=(-)50mA$  |         | 300   |        | MHz  |
|                          |           |                              |         | (400) |        | MHz  |
| Output Capacitance       | $C_{ob}$  | $V_{CB}=(-)10V, f=1MHz$      |         | (6.5) |        | pF   |
|                          |           |                              |         | 4.0   |        | pF   |

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83098HA (KT)/7149MO, TS No.3197-1/4

# 2SA1753/2SC4577

| Parameter                               | Symbol          | Conditions                  | Ratings |         |        | Unit |
|-----------------------------------------|-----------------|-----------------------------|---------|---------|--------|------|
|                                         |                 |                             | min     | typ     | max    |      |
| Collector-to-Emitter Saturation Voltage | $V_{CE(sat)}^1$ | $I_C=(-)5mA, I_B=(-)0.5mA$  |         | (-15)   | (-35)  | mV   |
|                                         |                 |                             |         |         | 30     | mV   |
|                                         |                 |                             |         | 160     | 300    | mV   |
|                                         | $V_{CE(sat)}^2$ | $I_C=(-)200mA, I_B=(-)10mA$ |         | (-200)  | (-360) | mV   |
| Base-to-Emitter Saturation Voltage      | $V_{BE(sat)}$   | $I_C=(-)200mA, I_B=(-)10mA$ |         | (-0.95) | (-1.2) | V    |
| Collector-to-Base Breakdown Voltage     | $V_{(BR)CBO}$   | $I_C=(-)10\mu A, I_E=0$     | (-20)   |         |        | V    |
| Collector-to-Emitter Breakdown Voltage  | $V_{(BR)CEO}$   | $I_C=(-)1mA, R_{BE}=\infty$ | (-15)   |         |        | V    |
| Emitter-to-Base Breakdown Voltage       | $V_{(BR)EBO}$   | $I_E=(-)10\mu A, I_C=0$     | (-5)    |         |        | V    |

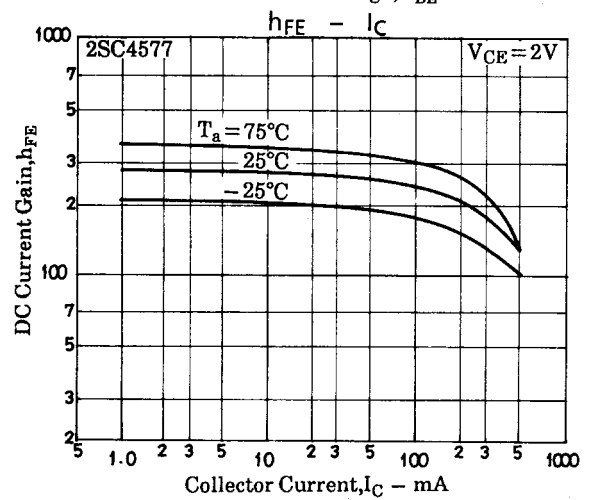
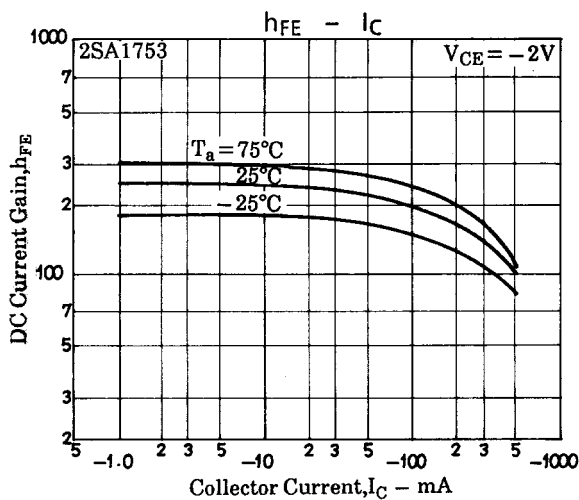
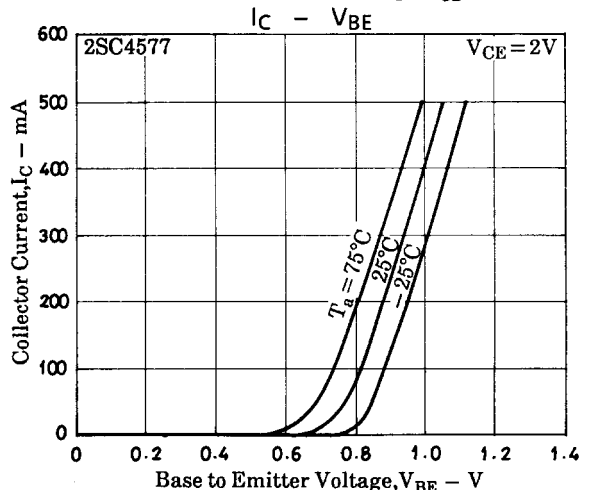
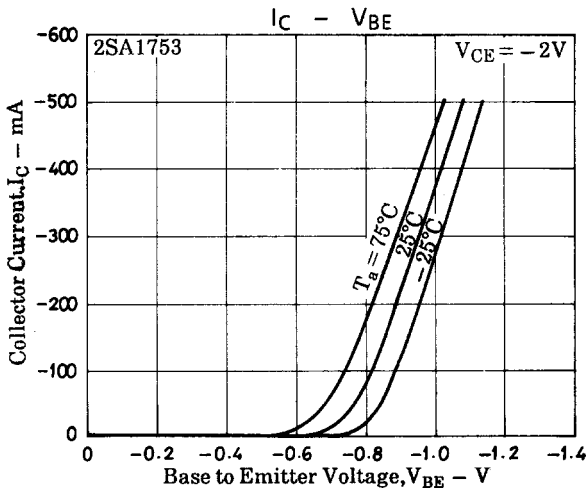
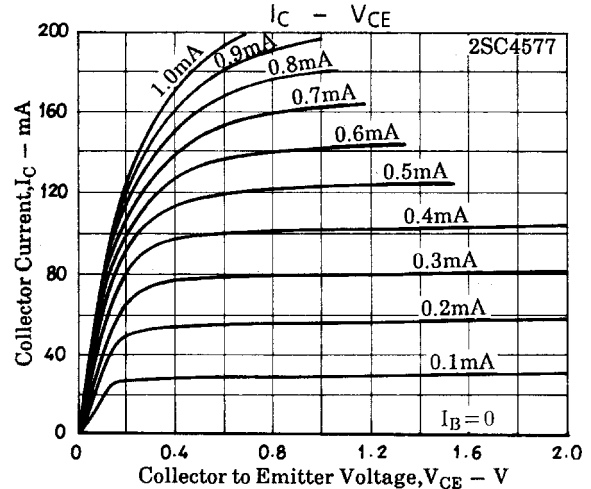
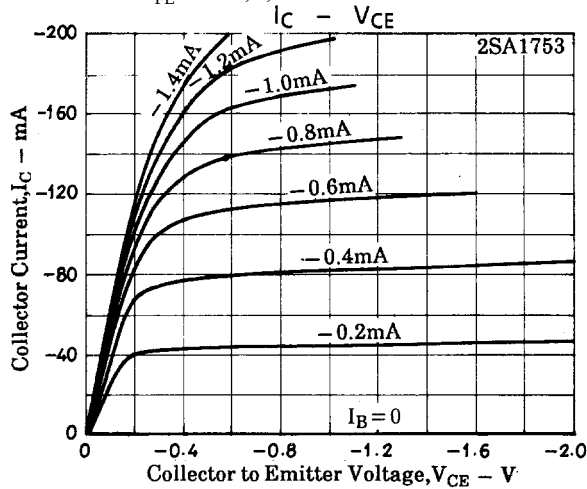
\* : The 2SA1753/2SC4577 are classified by 10mA  $h_{FE}$  as follows :

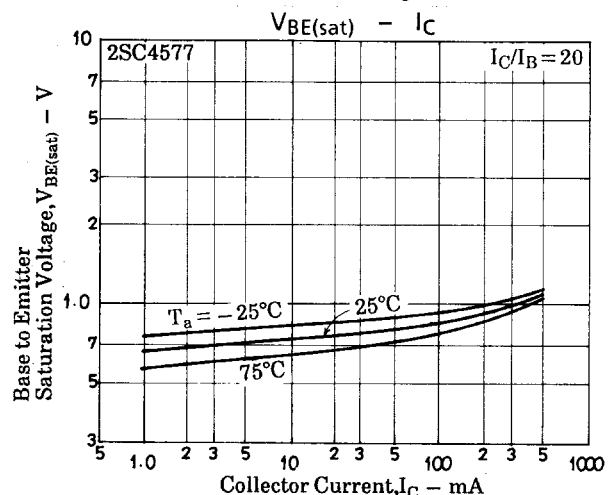
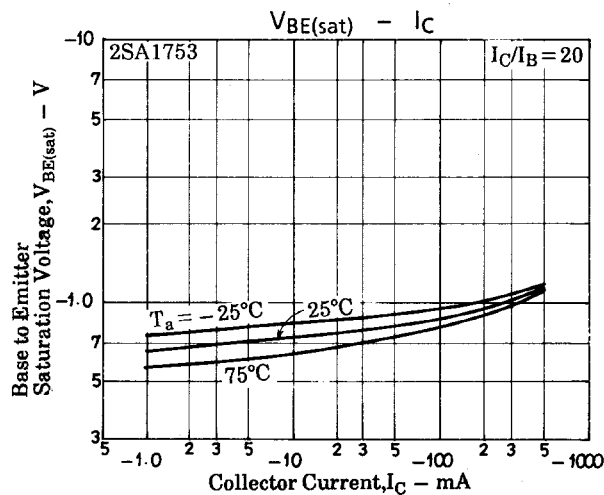
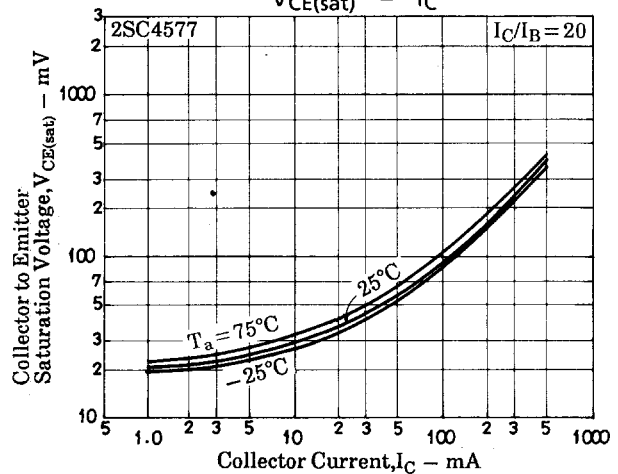
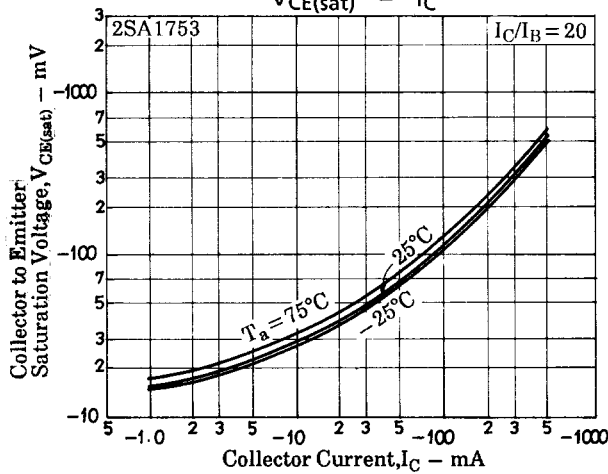
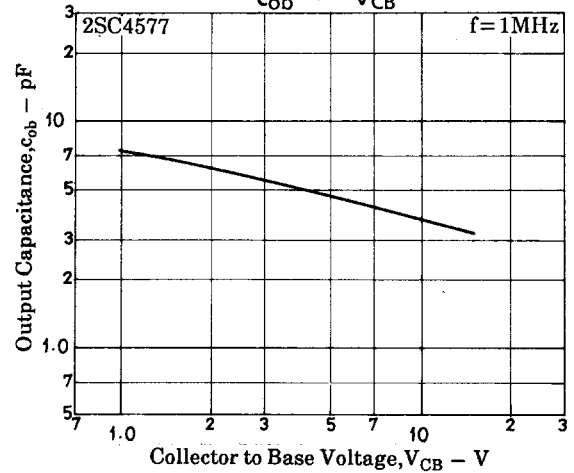
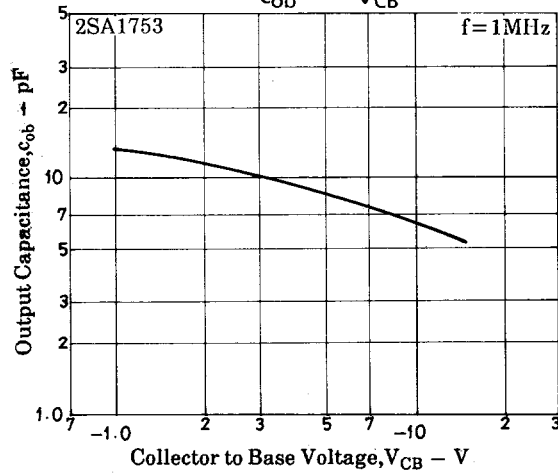
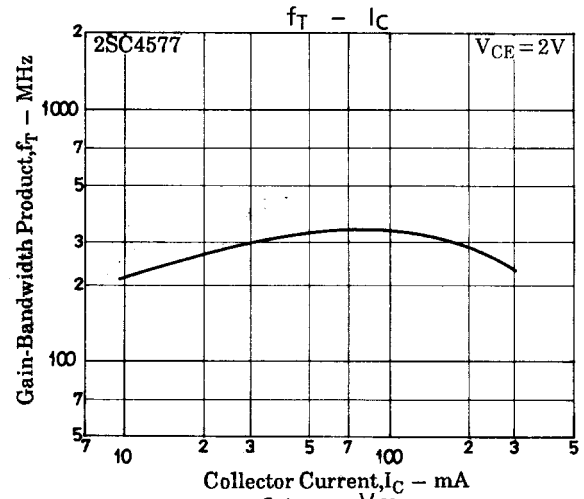
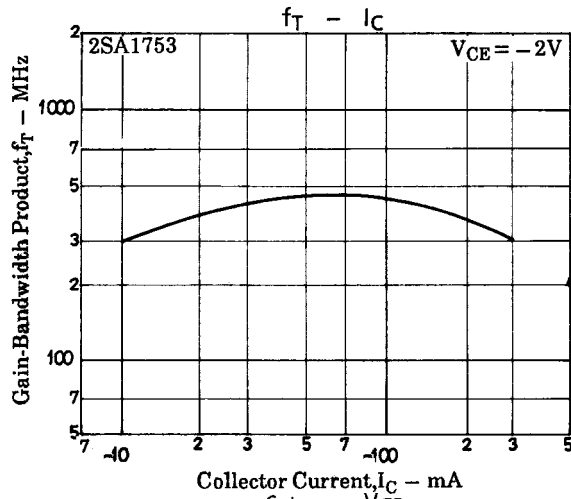
|     |   |     |     |   |     |     |   |     |
|-----|---|-----|-----|---|-----|-----|---|-----|
| 135 | 5 | 270 | 200 | 6 | 400 | 300 | 7 | 600 |
|-----|---|-----|-----|---|-----|-----|---|-----|

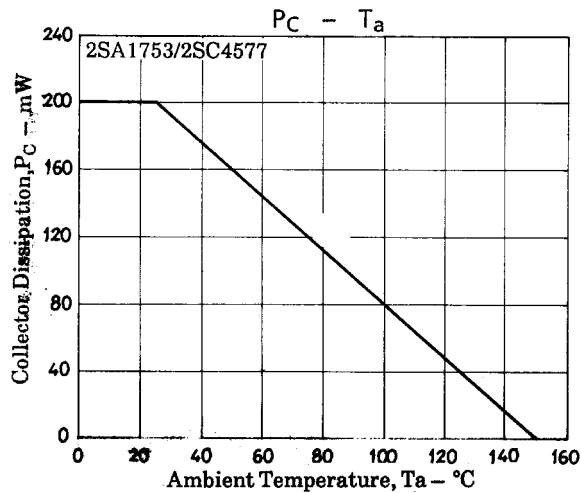
Marking 2SA1753 : ES

2SC4577 : UT

$h_{FE}$  rank : 5, 6, 7







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