**ON Semiconductor®**

# FFB5551
# Dual-Chip NPN General-Purpose Amplifier

## Features

- This device is designed for general-purpose high voltage amplifier.
- E1 is Pin 1.

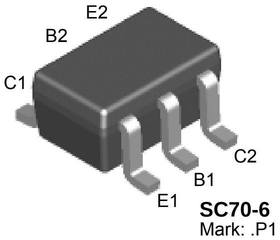

Figure 1. Device Package

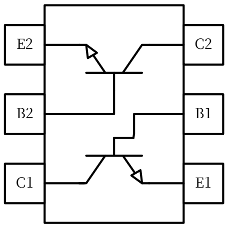

Figure 2. Internal Connection

## Ordering Information

| Part Number | Top Mark | Package | Packing Method |
|---|---|---|---|
| FFB5551 | P1 | SC70 6L | Tape and Reel |

## Absolute Maximum Ratings(1),(2)

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at $T_A$ = 25°C unless otherwise noted.

| Symbol | Parameter | Value | Unit |
|---|---|---|---|
| $V_{CEO}$ | Collector-Emitter Voltage | 160 | V |
| $V_{CBO}$ | Collector-Base Voltage | 180 | V |
| $V_{EBO}$ | Emitter-Base Voltage | 6.0 | V |
| $I_C$ | Collector Current - Continuous | 200 | mA |
| $T_J$, $T_{STG}$ | Operating and Storage Junction Temperature Range | -55 to 150 | °C |

**Notes:**

1. These ratings are based on a maximum junction temperature of 150°C.
2. These are steady-state limits. ON Semiconductor should be consulted on applications involving pulsed or low-duty-cycle operations.

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## Thermal Characteristics[3]

Values are at $T_A$ = 25°C unless otherwise noted.

| Symbol | Parameter | Max. | Unit |
|---|---|---|---|
| $P_D$ | Total Device Dissipation | 200 | mW |
| | Derate Above 25°C | 1.6 | mW/°C |
| $R_{\theta JA}$ | Thermal Resistance, Junction-to-Ambient | 625 | °C/W |

**Note:**

3. PCB size: FR-4, 76 mm x 114 mm x 1.57 mm (3.0 inch x 4.5 inch x 0.062 inch) with minimum land pattern size.

## Electrical Characteristics

Values are at $T_A$ = 25°C unless otherwise noted.

| Symbol | Parameter | Conditions | Min. | Max. | Unit |
|---|---|---|---|---|---|
| $BV_{CEO}$ | Collector-Emitter Breakdown Voltage[4] | $I_C$ = 1.0 mA, $I_B$ = 0 | 160 | | V |
| $BV_{CBO}$ | Collector-Base Breakdown Voltage | $I_C$ = 100 μA, $I_E$ = 0 | 180 | | V |
| $BV_{EBO}$ | Emitter-Base Breakdown Voltage | $I_E$ = 10 μA, $I_C$ = 0 | 6.0 | | V |
| $I_{CBO}$ | Collector Cut-Off Current | $V_{CB}$ = 120 V, $I_E$ = 0 | | 50 | nA |
| | | $V_{CB}$ = 120 V, $I_E$ = 0, $T_A$ = 100°C | | 50 | μA |
| $I_{EBO}$ | Emitter Cut-Off Current | $V_{EB}$ = 4.0 V, $I_C$ = 0 | | 50 | nA |
| $h_{FE}$ | DC Current Gain[4] | $V_{CE}$ = 5 V, $I_C$ = 1.0 mA | 80 | | |
| | | $V_{CE}$ = 5 V, $I_C$ = 10 mA | 80 | 250 | |
| | | $V_{CE}$ = 5 V, $I_C$ = 50 mA | 30 | | |
| $V_{CE}$(sat) | Collector-Emitter Saturation Voltage[4] | $I_C$ = 10 mA, $I_B$ = 1.0 mA | | 0.15 | V |
| | | $I_C$ = 50 mA, $I_B$ = 5.0 mA | | 0.20 | |
| $V_{BE}$(sat) | Base-Emitter Saturation Voltage[4] | $I_C$ = 10 mA, $I_B$ = 1.0 mA | | 1.0 | V |
| | | $I_C$ = 50 mA, $I_B$ = 5.0 mA | | 1.0 | |
| $f_T$ | Current Gain Bandwidth Product | $V_{CE}$ = 10 V, $I_C$ = 10 mA, f = 100 MHz | 100 | 300 | MHz |
| $C_{obo}$ | Output Capacitance | $V_{CB}$ = 10 V, $I_E$ = 0, f = 1.0 MHz | | 6.0 | pF |

**Note:**

4. Pulse test: pulse width ≤ 300 μs, duty cycle ≤ 2.0%.

## Typical Performance Characteristics

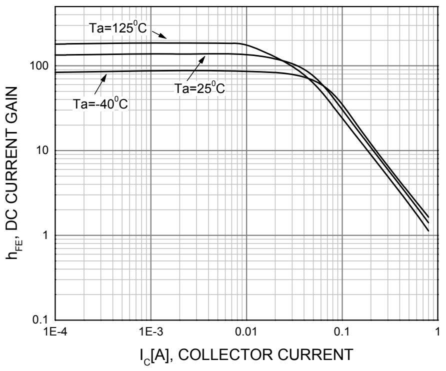


Figure 3. DC Current Gain

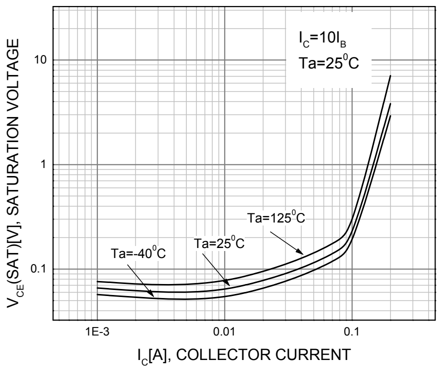


Figure 4. Collector-Emitter Saturation Voltage

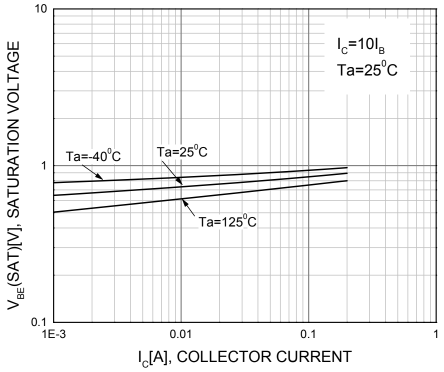


Figure 5. Base-Emitter Saturation Voltage

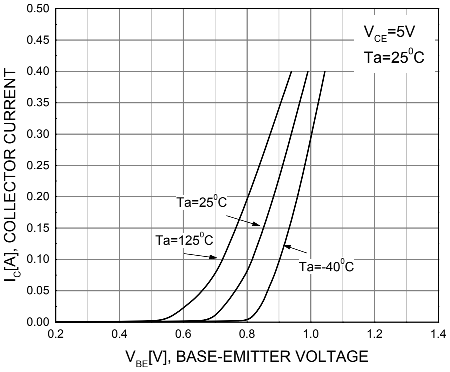
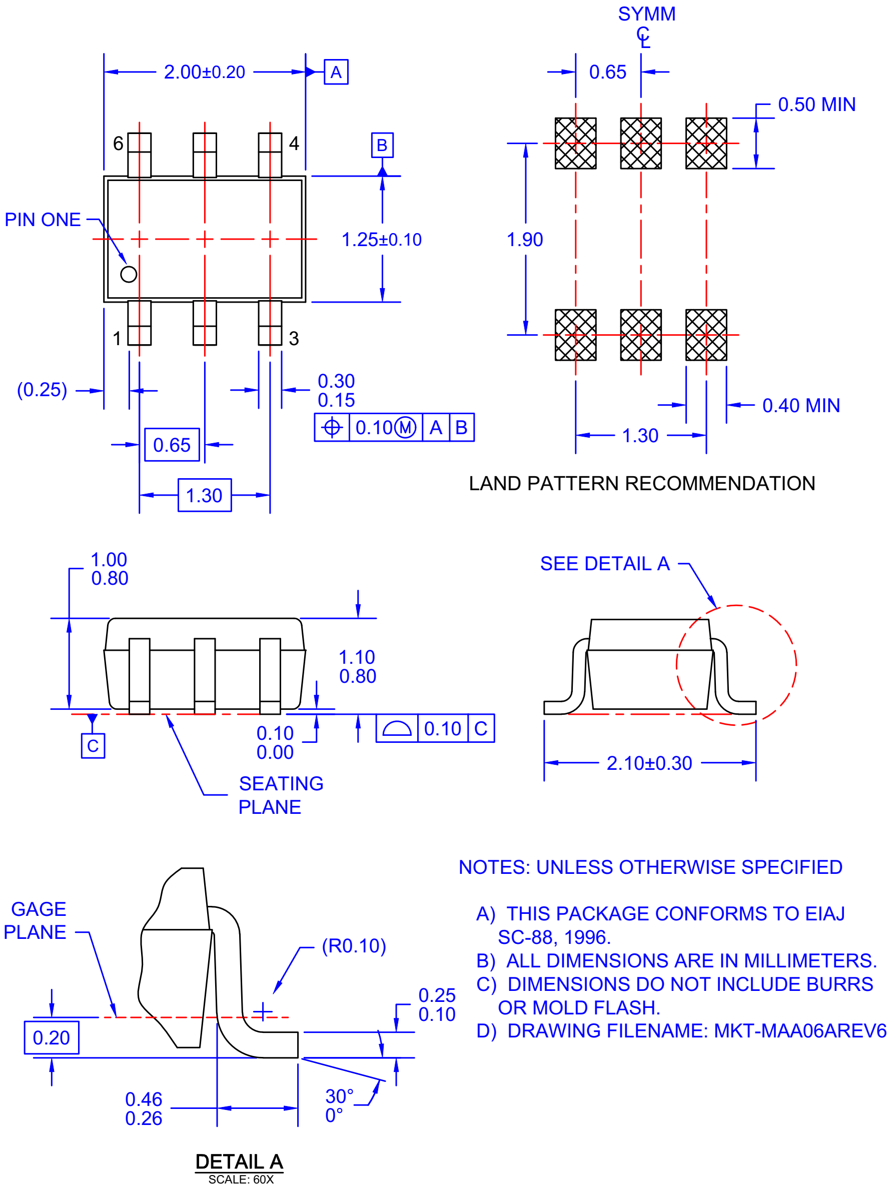


Figure 6. Base-Emitter On Voltage

## Physical Dimensions



NOTES: UNLESS OTHERWISE SPECIFIED

A) THIS PACKAGE CONFORMS TO EIAJ SC-88, 1996.
B) ALL DIMENSIONS ARE IN MILLIMETERS.
C) DIMENSIONS DO NOT INCLUDE BURRS OR MOLD FLASH.
D) DRAWING FILENAME: MKT-MAA06AREV6

**Figure 7. 6-LEAD, SC70, EIAJ SC-88, 1.25 MM WIDE**

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