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January 2015

FFB5551
Dual-Chip NPN General-Purpose Amplifier

Features

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

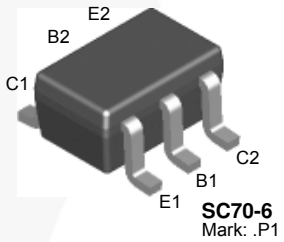

Figure 1. Device Package

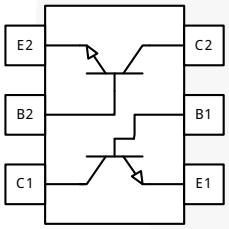

Figure 2. Internal Connection

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. Fairchild Semiconductor should be consulted on applications involving pulsed or low-duty-cycle operations.

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

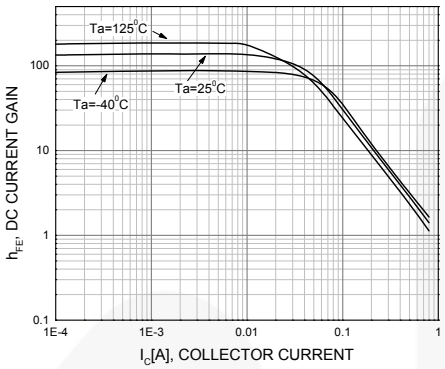

Figure 3. DC Current Gain

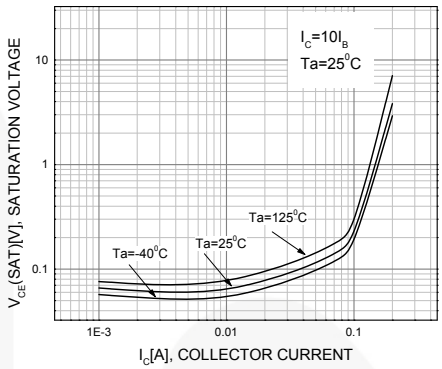

Figure 4. Collector-Emitter Saturation Voltage

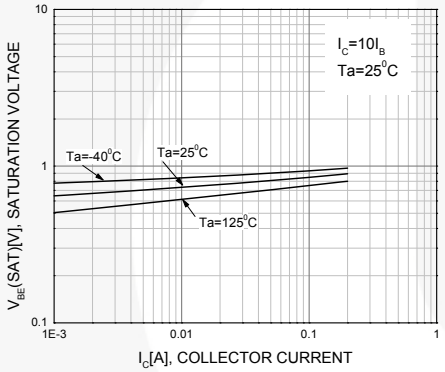

Figure 5. Base-Emitter Saturation Voltage

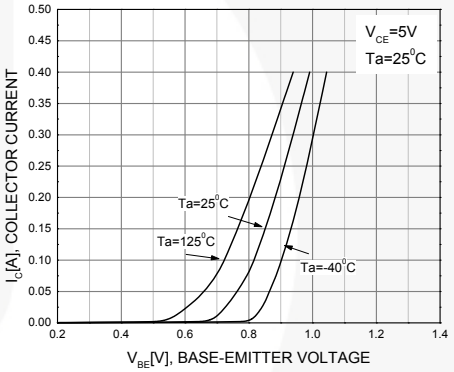

Figure 6. Base-Emitter On Voltage

Physical Dimensions

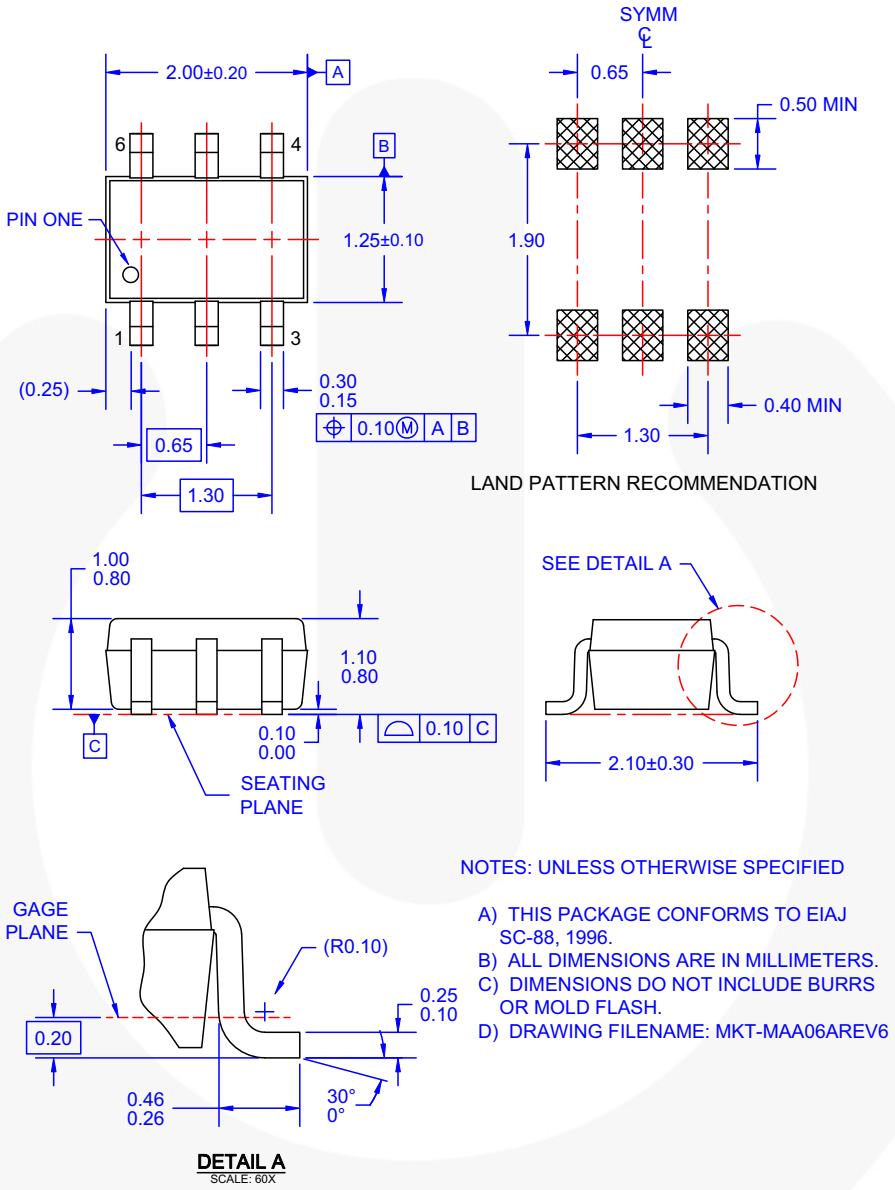

Figure 7. 6-LEAD, SC70, EIAJ SC-88, 1.25 MM WIDE

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