



## DESCRIPTION

The 2SC4177 is available in SC-70 package

## ORDERING INFORMATION

Package Type	Part Number
SC-70	2SC4177-LX
Note	LX: $h_{FE}$ X: 4~7 Please refer to page 2 SPQ: 3,000pcs/Reel
AiT provides all RoHS Compliant Products	

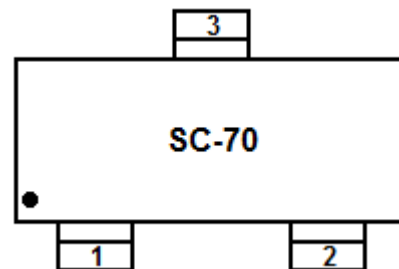
## FEATURES

- High DC Current Gain
- Complementary to 2SA1611
- High Voltage
- Available in SC-70 package

## APPLICATIONS

- General Purpose Amplification

## PIN DESCRIPTION



1. BASE
2. EMITTER
3. COLLECTOR



## ABSOLUTE MAXIMUM RATINGS

T<sub>A</sub>=25°C, unless otherwise noted

V <sub>CBO</sub> , Collector-Base Voltage	60V
V <sub>CEO</sub> , Collector-Emitter Voltage	50V
V <sub>EBO</sub> , Emitter-Base Voltage	5V
I <sub>C</sub> , Collector Current	100mA
P <sub>C</sub> , Collector Power Dissipation	150mW
R <sub>θJA</sub> , Thermal Resistance from Junction to Ambient	833°C/W
T <sub>J</sub> , Junction Temperature	150°C
T <sub>STG</sub> , Storage Temperature	-55°C ~150°C

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

## ELECTRICAL CHARACTERISTICS

T<sub>A</sub>=25°C, unless otherwise noted

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit	
Collector-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> = 100μA, I <sub>E</sub> =0	60	-	-	V	
Collector-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =1mA, I <sub>B</sub> =0	50	-	-	V	
Emitter-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =100μA, I <sub>C</sub> =0	5	-	-	V	
Collector Cut-Off Current	I <sub>CB0</sub>	V <sub>CB</sub> =60V, I <sub>E</sub> =0	-	-	100	nA	
Emitter Cut-Off Current	I <sub>EBO</sub>	V <sub>EB</sub> =5V, I <sub>C</sub> =0	-	-	100	nA	
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> =6V, I <sub>C</sub> =1mA	L4	90	-	180	-
			L5	135	-	270	
			L6	200	-	400	
			L7	300	-	600	
Collector- Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =100mA, I <sub>B</sub> =10mA	-	-	0.3	V	
Base-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =100mA, I <sub>B</sub> =10mA	-	-	1	V	
Base-Emitter Voltage	V <sub>BE</sub>	V <sub>CE</sub> =6V, I <sub>C</sub> =1mA	0.55	-	0.65	V	
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> =6V, I <sub>C</sub> =10mA	-	250	-	MHz	
Collector Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =6V, I <sub>E</sub> =0, f=1MHz	-	3	-	pF	

NOTE: Pulse test; pulse width≤350μs, duty cycle≤2.0%.



## TYPICAL CHARACTERISTICS

Figure 1. Static Characteristic

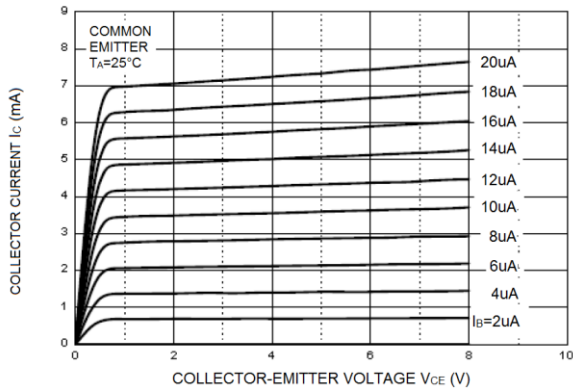


Figure 2.  $h_{FE} - I_c$

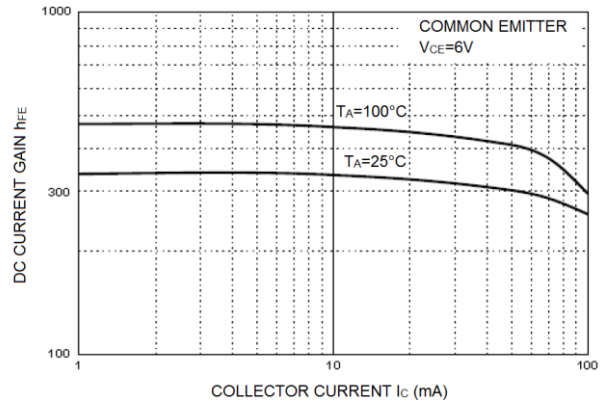


Figure 3.  $V_{CE(sat)} - I_c$

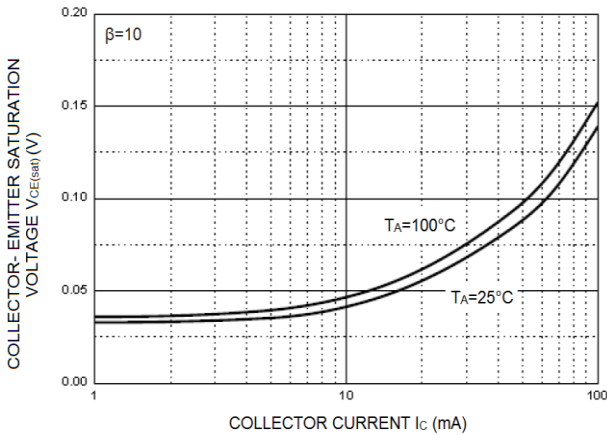


Figure 4.  $V_{BE(sat)} - I_c$

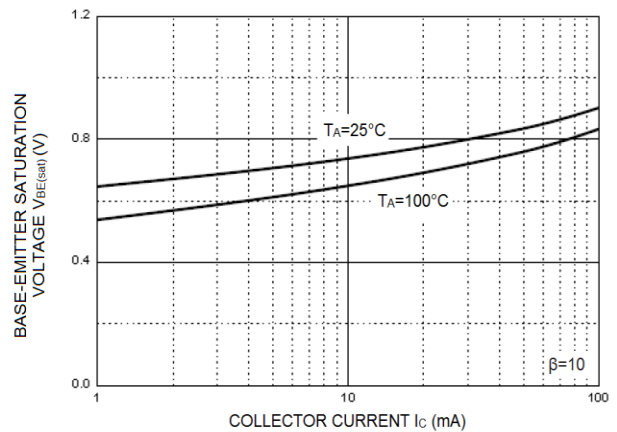


Figure 5.  $I_c - V_{BE}$

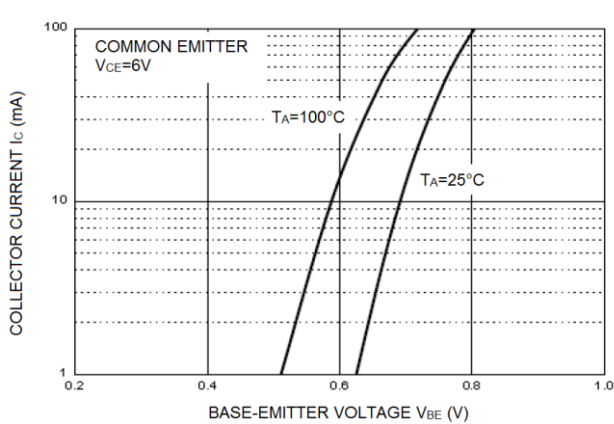


Figure 6.  $C_{ob} / C_{ib} - V_{CB} / V_{EB}$

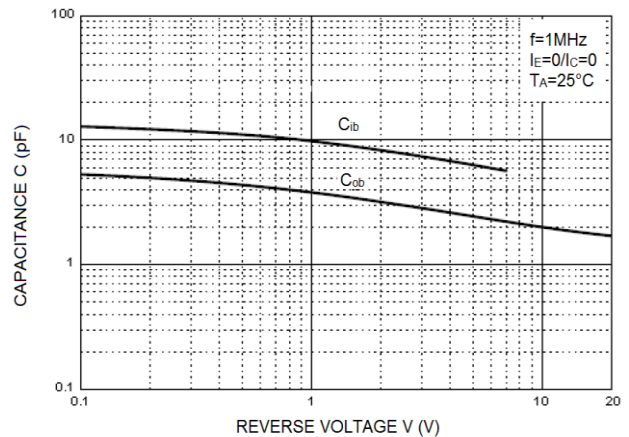
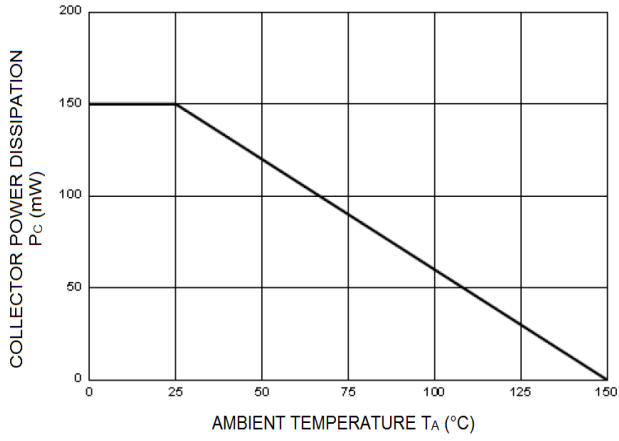




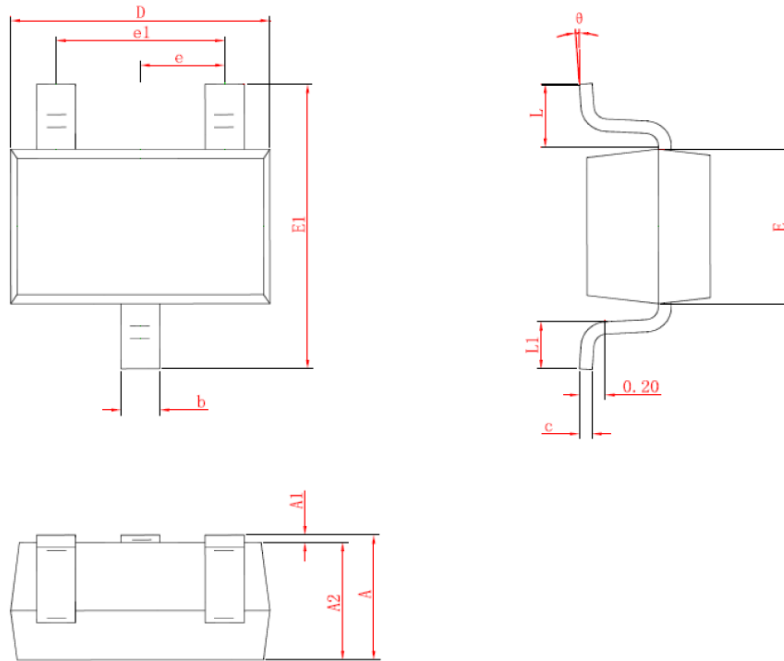
Figure 7.  $P_c - T_A$





**PACKAGE INFORMATION**

Dimension in SC-70 (Unit: mm)



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.082	0.096
e	0.650 TYP.		0.026 TYP.	
e1	1.200	1.400	0.047	0.055
L	0.525 REF.		0.021 REF.	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°



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