

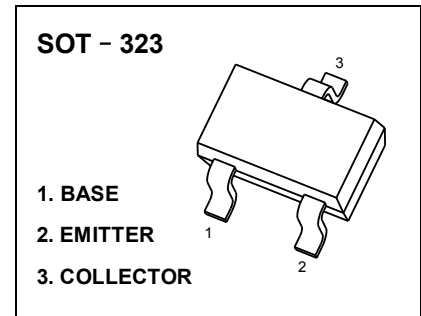
## 2SC4177 TRANSISTOR(NPN)

### FEATURES

- High DC Current Gain
- Complementary to 2SA1611
- High Voltage

### APPLICATIONS

- General Purpose Amplification



### MAXIMUM RATINGS (T<sub>A</sub>=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V <sub>CB0</sub>	Collector-Base Voltage	60	V
V <sub>CEO</sub>	Collector-Emitter Voltage	50	V
V <sub>EBO</sub>	Emitter-Base Voltage	5	V
I <sub>C</sub>	Collector Current	100	mA
P <sub>C</sub>	Collector Power Dissipation	150	mW
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~+150	°C

### ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless otherwise specified)

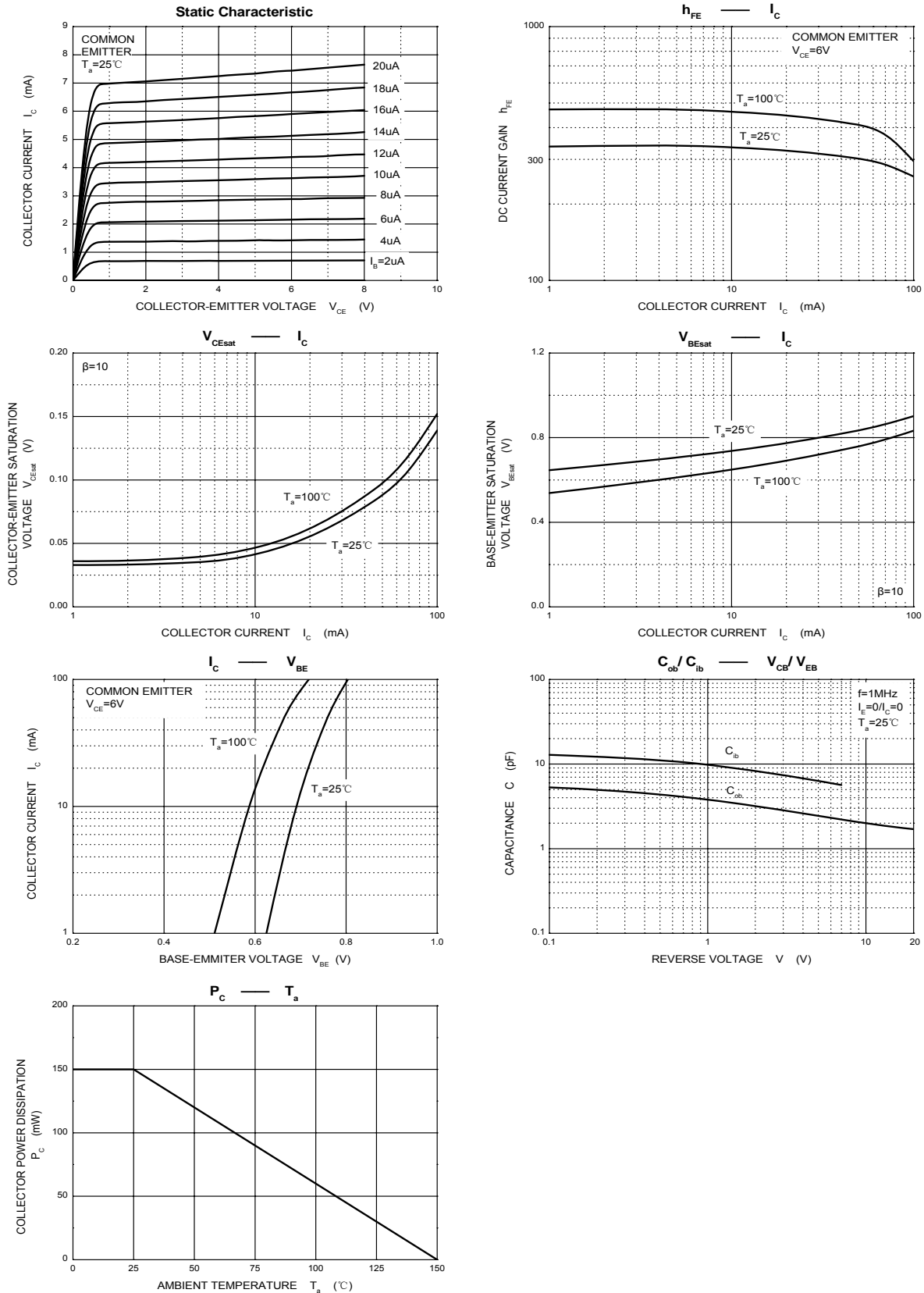
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =100μA, I <sub>E</sub> =0	60			V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =1mA, I <sub>B</sub> =0	50			V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =100μA, I <sub>C</sub> =0	5			V
Collector cut-off current	I <sub>CBO</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	90		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

\*Pulse test: pulse width ≤350μs, duty cycles ≤ 2.0%.

### CLASSIFICATION OF h<sub>FE</sub>

RANK	L4	L5	L6	L7
RANGE	90 - 180	135 - 270	200 - 400	300 - 600
MARKING	L4	L5	L6	L7

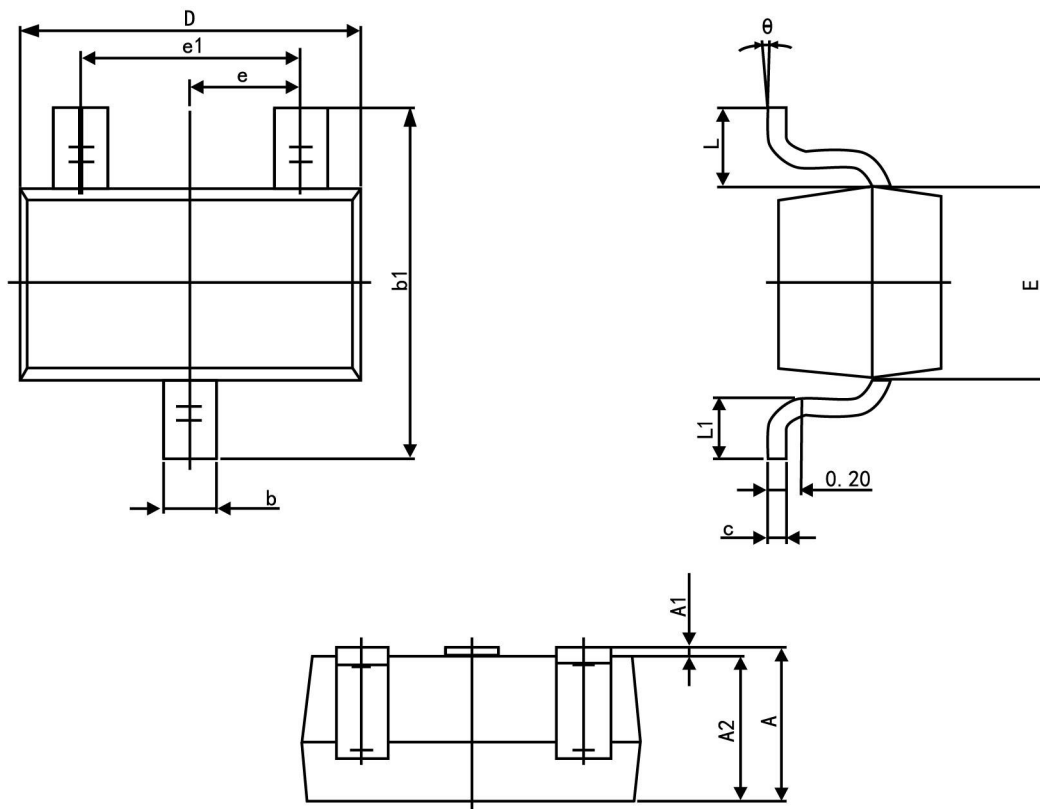
TYPICAL CHARACTERISTICS



**PACKAGE OUTLINE**

Plastic surface mounted package; 3 leads

SOT-323



Symbol	Dimension in Millimeters	
	Min	Max
A	0.900	1.100
A1	0.000	0.100
A2	0.900	1.000
b	0.200	0.400
c	0.080	0.150
D	2.000	2.200
E	1.150	1.350
E1	2.150	2.450
e	0.650 TYP.	
e1	1.200	1.400
L	0.525 REF.	
L1	0.260	0.460
theta	0°	8°

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