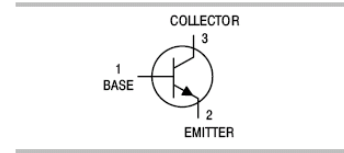




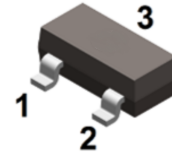
### Features

- Epitaxial planar die construction
- Complimentary to BCX17
- Ultra-small surface mount package



### Mechanical Data

- Case: SOT-23
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208



SOT-23

### Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BCX19	SOT-23	3000 pcs / Tape & Reel	U1

### Maximum Ratings (@ T<sub>A</sub> = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Collector-Base Breakdown Voltage	V <sub>CBO</sub>	50	V
Collector-Emitter Breakdown Voltage	V <sub>CEO</sub>	45	V
Emitter-Base Breakdown Voltage	V <sub>EBO</sub>	5	V
Collector Current (Continuous)	I <sub>C</sub>	0.5	A
Collector Current (Peak)	I <sub>CM</sub>	1	A

### Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation	P <sub>D</sub>	0.25	W
Thermal Resistance Junction-to-Air <sup>**1</sup>	R <sub>θJA</sub>	280	°C/W
Thermal Resistance Junction-to-Case <sup>**1</sup>	R <sub>θJC</sub>	160	°C/W
Thermal Resistance Junction-to-Lead <sup>**1</sup>	R <sub>θJL</sub>	210	°C/W
Junction Temperature Range	T <sub>J</sub>	-55 ~ +150	°C
Storage Temperature Range	T <sub>STG</sub>	-55 ~ +150	°C

Note 1: The data tested by surface mounted on a 1 inch<sup>2</sup> FR-4 board with 2OZ copper



### Electrical Characteristics (@ T<sub>A</sub> = 25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> = 100μA, I <sub>E</sub> = 0	50	-	-	V
Collector-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> = 10mA, I <sub>B</sub> = 0	45	-	-	V
Emitter-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> = 10μA, I <sub>C</sub> = 0	5	-	-	V
Collector Cut-off Current	I <sub>CBO</sub>	V <sub>CB</sub> = 20V, I <sub>E</sub> = 0	-	-	0.1	μA
Emitter Cut-off Current	I <sub>EBO</sub>	V <sub>EB</sub> = 5V, I <sub>C</sub> = 0	-	-	0.1	μA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> = 1V, I <sub>C</sub> = 100mA	100	-	600	-
		V <sub>CE</sub> = 1V, I <sub>C</sub> = 300mA	70	-	-	-
		V <sub>CE</sub> = 1V, I <sub>C</sub> = 500mA	40	-	-	-
Collector-emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = 500mA, I <sub>B</sub> = 50mA	-	-	0.62	V
Base-emitter On Voltage	V <sub>BE(on)</sub>	V <sub>CE</sub> = 1V, I <sub>C</sub> = 500mA	-	-	1.2	V
Transition Frequency	f <sub>T</sub>	I <sub>C</sub> = 10mA, V <sub>CE</sub> = 5V f = 100MHz	100	-	-	MHz
Collector Output Capacitance	C <sub>OBO</sub>	V <sub>CB</sub> = 10V, I <sub>E</sub> = 0, f = 1MHz	-	5	-	pF



### Ratings and Characteristics Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

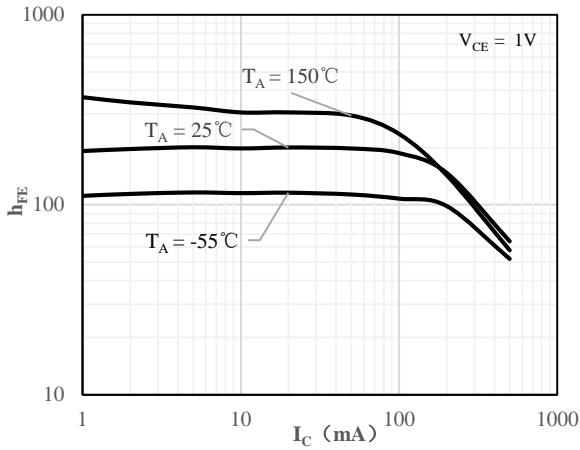


Fig 1  $h_{FE}$  vs.  $I_C$

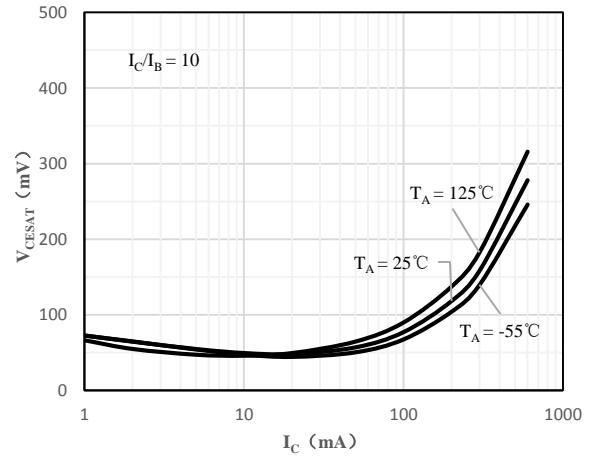


Fig 2  $V_{CE(sat)}$  vs.  $I_C$

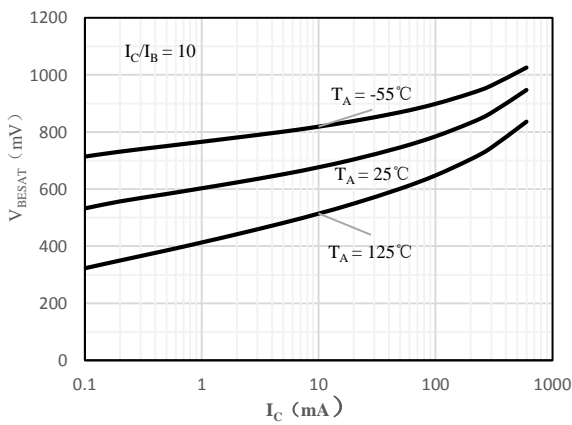


Fig 3  $V_{BE(sat)}$  vs.  $I_C$

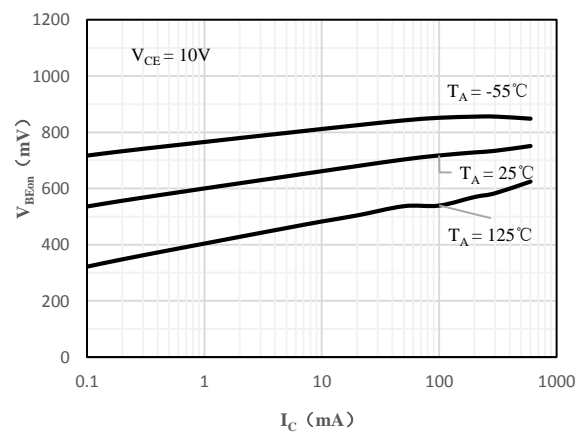
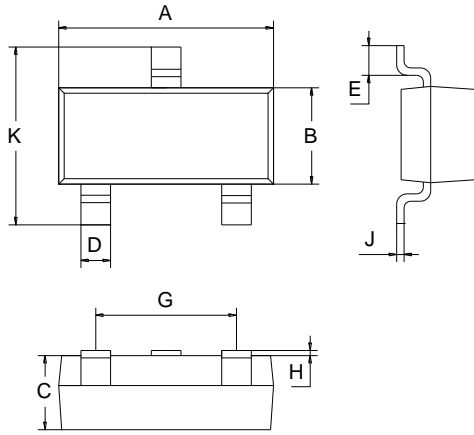


Fig 4  $V_{BE(on)}$  vs.  $I_C$



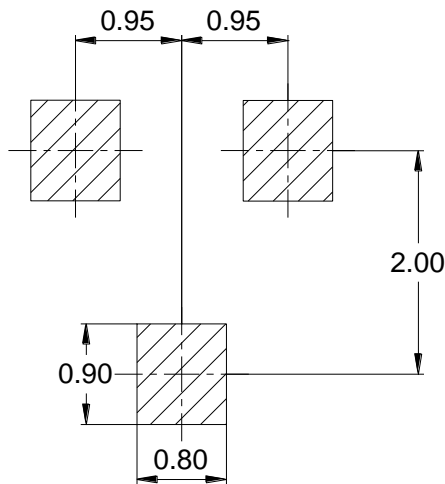
### Package Outline Dimensions (Unit: mm)



SOT-23		
Dimension	Min.	Max.
A	2.70	3.10
B	1.10	1.50
C	0.9	1.1
D	0.3	0.5
E	0.35	0.48
G	1.80	2.00
H	0.02	0.1
J	0.05	0.15
K	2.20	2.60

### Package Outline Dimensions (Unit: mm)

#### SOT-23



Package	Reel	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)
SOT-23	3000pcs	7inch	45,000pcs	203×203×195	180,000pcs	438×438×220