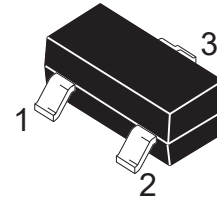


**SOT-23**
**■ Features**

- Low current (max. 100 mA)
- Low voltage (max. 45 V).



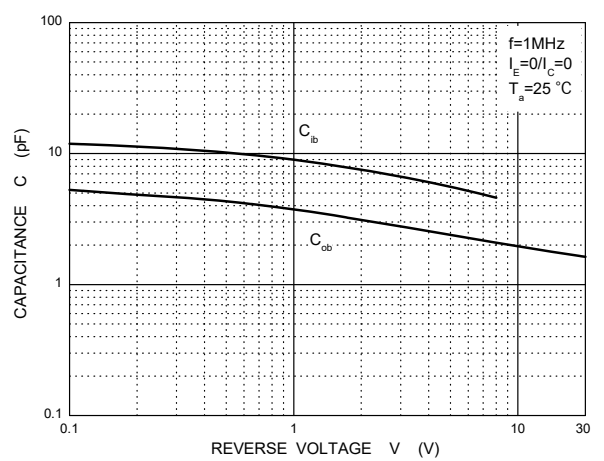
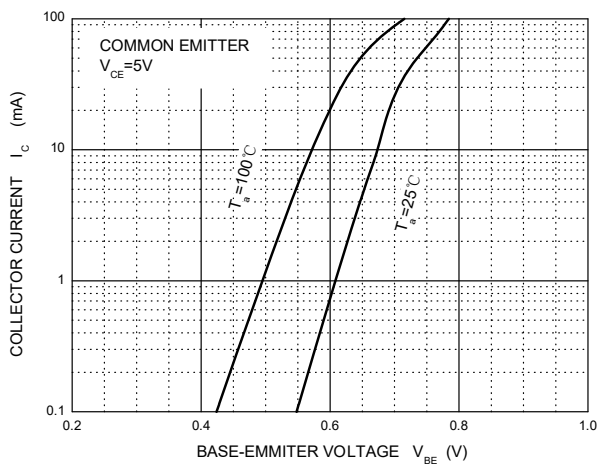
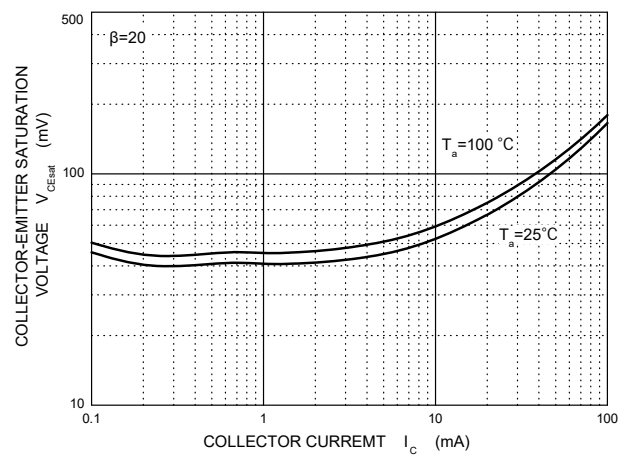
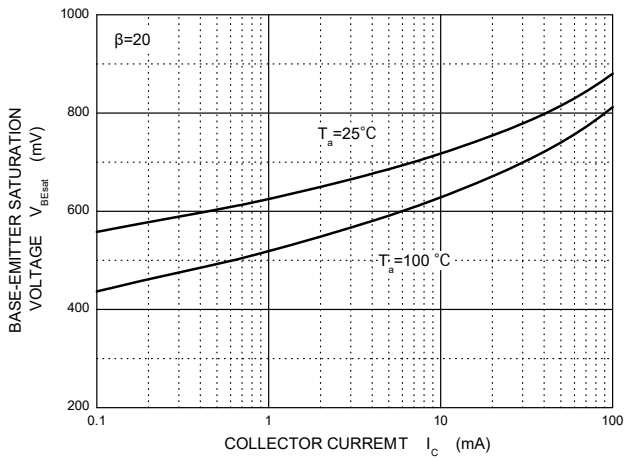
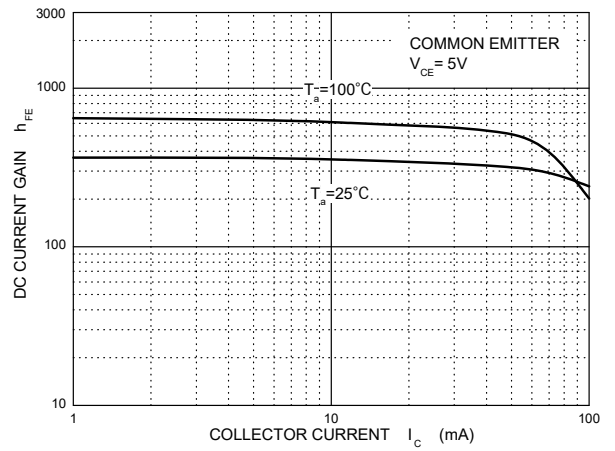
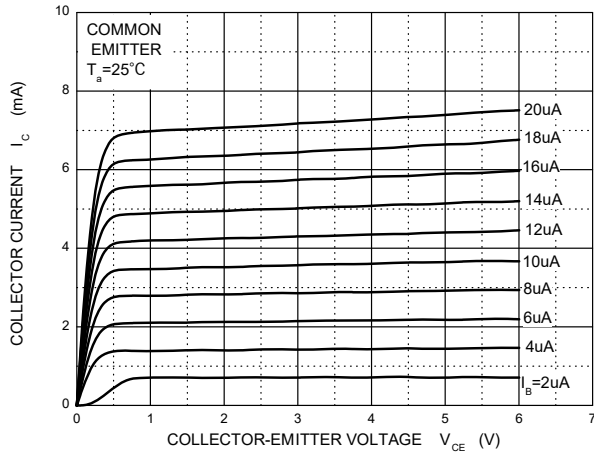
1. Base 2. Emitter 3. Collector

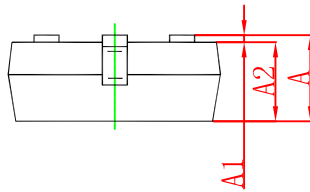
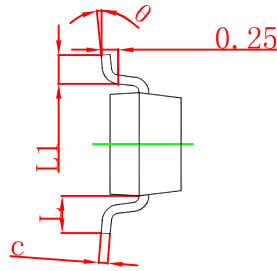
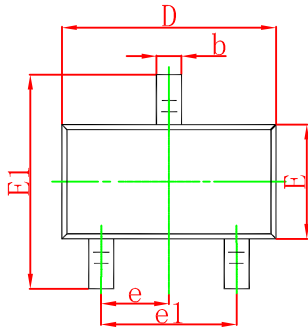
**Absolute Maximum Ratings (Ta=25°C)**

Parameter		Symbol	Value	Unit
Collector Base Voltage	BC846	$V_{CBO}$	80	V
	BC847 BC850	$V_{CBO}$	50	V
	BC848 BC849	$V_{CBO}$	30	V
Collector Emitter Voltage	BC846	$V_{CEO}$	65	V
	BC847 BC850	$V_{CEO}$	45	V
	BC848 BC849	$V_{CEO}$	30	V
Emitter Base Voltage	BC846, BC847	$V_{EBO}$	6	V
	BC848, BC849, BC850	$V_{EBO}$	5	V
Collector Current		$I_C$	100	mA
Peak Collector Current		$I_{CM}$	200	mA
Power Dissipation		$P_{tot}$	300	mW
Junction Temperature		$T_J$	150	°C
Storage Temperature Range		$T_{STG}$	- 65 to + 150	°C

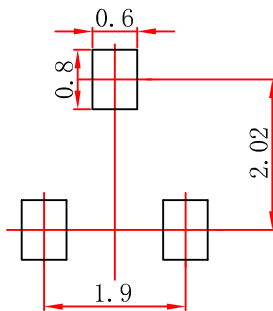
**ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless otherwise specified)**

Parameter	Symbol	Min.	Typ.	Max.	Unit	
DC Current Gain at V <sub>CE</sub> = 5 V, I <sub>C</sub> = 2 mA	Current Gain Group A B C	h <sub>FE</sub> h <sub>FE</sub> h <sub>FE</sub>	110 200 420	- - -	220 450 800	- - -
Collector Base Cutoff Current at V <sub>CB</sub> = 30 V	I <sub>CBO</sub>	-	-	15	nA	
Collector Base Breakdown Voltage at I <sub>C</sub> = 100 μA	BC846 BC847 BC850 BC848 BC849	V <sub>(BR)CBO</sub> V <sub>(BR)CBO</sub> V <sub>(BR)CBO</sub>	80 50 30	- - -	- - -	V V V
Collector Emitter Breakdown Voltage at I <sub>C</sub> = 2 mA	BC846 BC847 BC850 BC848 BC849	V <sub>(BR)CEO</sub> V <sub>(BR)CEO</sub> V <sub>(BR)CEO</sub>	65 45 30	- - -	- - -	V V V
Collector Emitter Breakdown Voltage at I <sub>C</sub> = 100 μA	BC846, BC847 BC848, BC849, BC850	V <sub>(BR)EBO</sub> V <sub>(BR)EBO</sub>	6 5	- -	- -	V V
Collector Emitter Saturation Voltage at I <sub>C</sub> = 10 mA, I <sub>B</sub> = 0.5 mA at I <sub>C</sub> = 100 mA, I <sub>B</sub> = 5 mA	V <sub>CEsat</sub> V <sub>CEsat</sub>	- -	- -	250 600	mV mV	
Base Emitter On Voltage at V <sub>CE</sub> = 5 V, I <sub>C</sub> = 2 mA at V <sub>CE</sub> = 5 V, I <sub>C</sub> = 10 mA	V <sub>BE(on)</sub> V <sub>BE(on)</sub>	- -	- -	700 720	mV mV	
Transition Frequency at V <sub>CE</sub> = 5 V, I <sub>C</sub> = 10 mA, f = 100 MHz	f <sub>T</sub>	-	300	-	MHz	
Output Capacitance at V <sub>CB</sub> = 10 V, f = 1 MHz	C <sub>ob</sub>	-	-	6	pF	
Input Capacitance at V <sub>EB</sub> = 0.5 V, f = 1 MHz	C <sub>ib</sub>	-	9	-	pF	

**Rating And Characteristics Curves**


**SOT-23 Package Outline Dimensions**


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
$\theta$	0°	8°	0°	8°

**SOT-23 Suggested Pad Layout**

**Note:**

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.