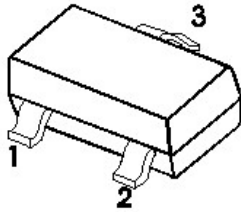


# S8050

## SOT-23 Plastic-Encapsulate Transistors

### SOT-23



- 1. BASE
- 2. EMITTER
- 3. COLLECTOR

### Features

- ◆ Complementary to S8550
- ◆ Power Dissipation of 300mW
- ◆ High Stability and High Reliability

### Mechanical Data

SOT-23 Small Outline Plastic Package  
 Epoxy UL: 94V-0  
 Mounting Position: Any  
 Marking: J3Y

### Maximum Ratings & Thermal Characteristics (Ratings at 25°C ambient temperature unless otherwise specified.)

Parameters	Symbol	Value	Unit
Collector-Base Voltage	V <sub>CB0</sub>	40	V
Collector-Emitter Voltage	V <sub>CEO</sub>	25	V
Emitter -Base Voltage	V <sub>EBO</sub>	5	V
Collector Current-Continuous	I <sub>c</sub>	500	mA
Collector Power Dissipation	P <sub>c</sub>	300	mW
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55-+150	°C
Thermal resistance From junction to ambient	R <sub>θJA</sub>	417	°C/W

### Electrical Characteristics (Ratings at 25°C ambient temperature unless otherwise specified).

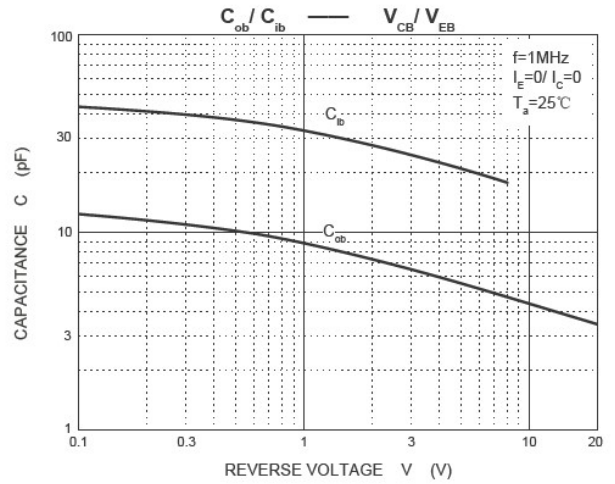
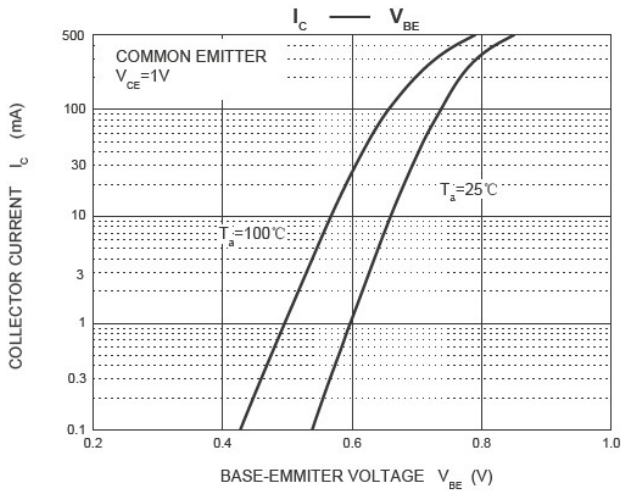
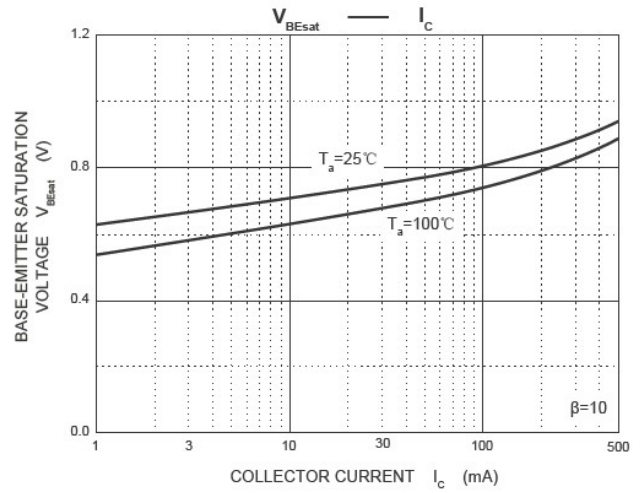
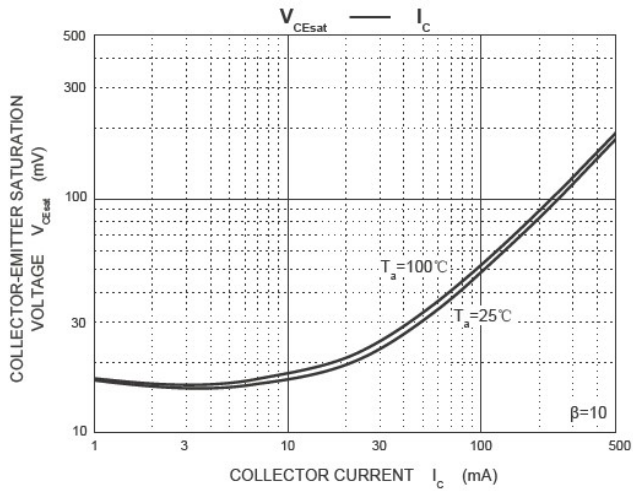
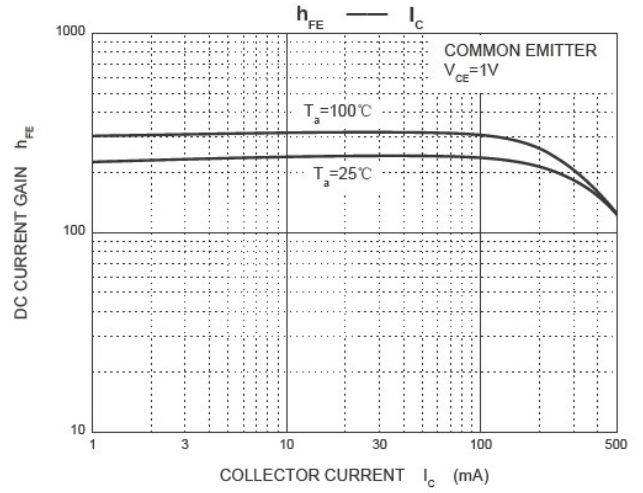
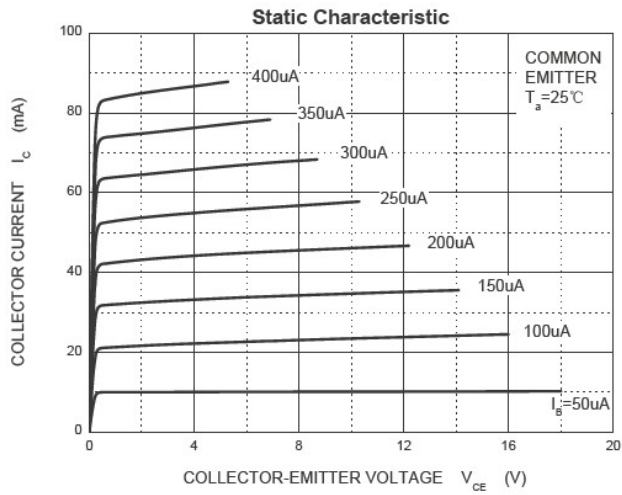
Parameter	Symbols	Test Condition	Limits		Unit
			Min	Max	
Collector-base breakdown voltage	V(BR)CBO	I <sub>C</sub> =100uA, I <sub>E</sub> =0	40		V
Collector-emitter breakdown voltage	V(BR)CEO	I <sub>C</sub> =1mA, I <sub>B</sub> =0	25		V
Emitter-base breakdown voltage	V(BR)EBO	I <sub>E</sub> =100uA, I <sub>C</sub> =0	5		V
Collector cut-off current	I <sub>CEO</sub>	V <sub>CE</sub> =20V, I <sub>B</sub> =0		100	nA
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> =40V, 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> (1)	V <sub>CE</sub> =1V, I <sub>C</sub> =50mA	120	400	
	h <sub>FE</sub> (2)	V <sub>CE</sub> =1V, I <sub>C</sub> =500mA	50		
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =500mA, I <sub>B</sub> =50mA		0.60	V
Base -emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =500mA, I <sub>B</sub> =50mA		1.20	V
Transition frequency	f <sub>t</sub>	V <sub>CE</sub> =6V, I <sub>C</sub> =20mA, f=30MHz	150		MHz

### CLASSIFICATION OF h<sub>FE</sub>(1)

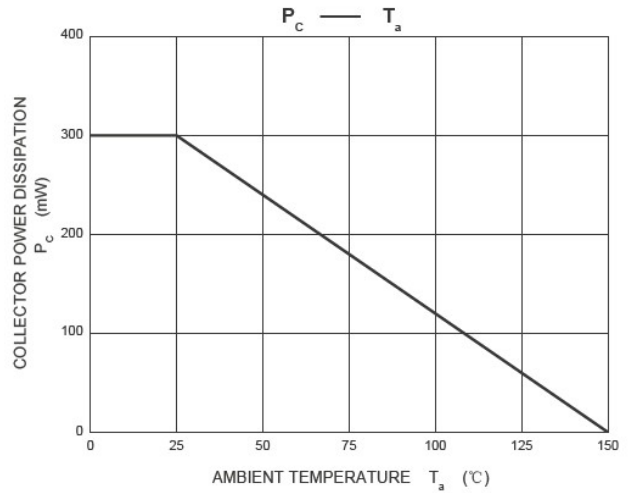
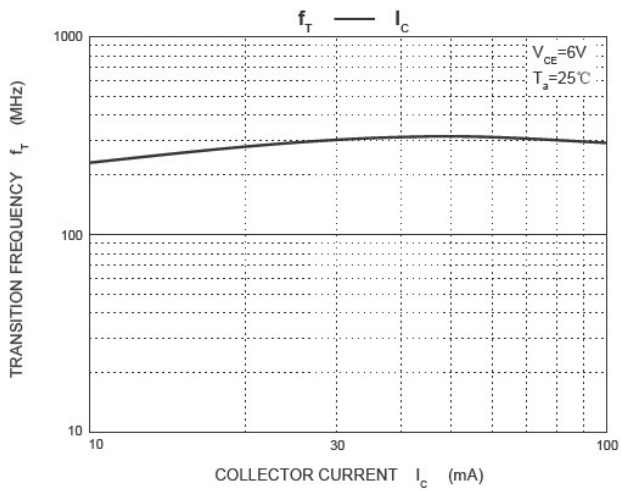
RANK	L	H	J
RANGE	120-200	200-350	300-400

# RATINGS AND CHARACTERISTIC CURVES S8050

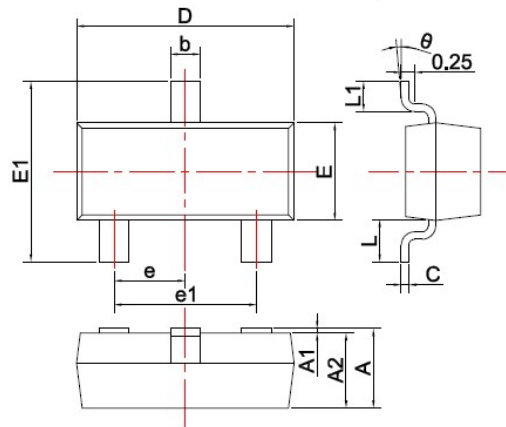
## Typical Characteristics



# RATINGS AND CHARACTERISTIC CURVES S8050



## SOT-23 PACKAGE OUTLINE Plastic surface mounted package

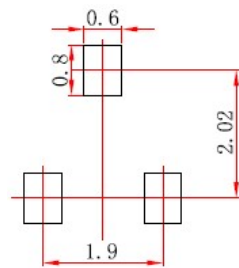


SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
$\theta$	0 $^\circ$	8 $^\circ$

Unit: mm

### Precautions: PCB Design

Recommended land dimensions for SOT-23 diode. Electrode patterns for PCBs



#### Note:

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