

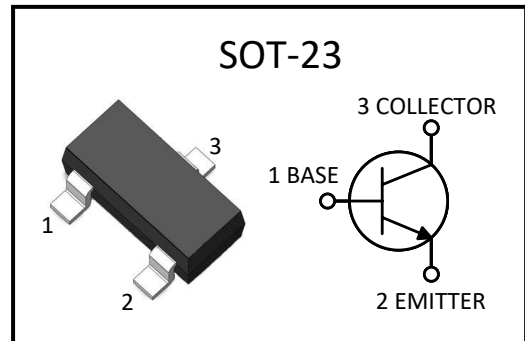
M8050

NPN Plastic-Encapsulate Transistor

Features

- $V_{CE}=25V$
- $I_C=0.8A$
- $f_T=150MHz$ @ $V_{CE}=6V$, $I_C=20mA$, $f=30MHz$

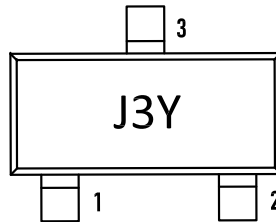
Package



Description

- Complementary to M8550
- SOT-23 Plastic Package.

Marking



Ordering information

Order code	Package	Marking	Base qty	Delivery mode
M8050	SOT-23	J3Y	3K	Tape and reel

Absolute Maximum Ratings @ $T_A=25^{\circ}C$ unless otherwise noted

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	40	V
V_{CEO}	Collector-Emitter Voltage	25	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current	0.8	A
P_C	Collector Power Dissipation	200	mW
T_J	Junction Temperature	150	$^{\circ}C$
T_{stg}	Storage Temperature	-55 to + 150	$^{\circ}C$



M8050

NPN Plastic-Encapsulate Transistor

Electrical Characteristics (T_A=+25°C, unless otherwise specified)

Symbol	Parameter	Test condition	Min.	Typ.	Max.	Unit
V _{(BR)CBO}	Collector-base breakdown voltage	I _C =100μA, I _E =0	40	—	—	V
V _{(BR)CEO}	Collector-emitter breakdown voltage	I _C =1mA, I _B =0	25	—	—	
V _{(BR)EBO}	Emitter-base breakdown voltage	I _E =100μA, I _C =0	6	—	—	
I _{CBO}	Collector cut-off current	V _{CB} =35V, I _E =0	—	—	0.1	uA
I _{CEO}	Collector cut-off current	V _{CE} =20V, I _B =0	—	—	0.1	
h _{FE(1)}	DC current gain	V _{CE} =1V, I _C =5mA	45	—	—	
h _{FE(2)}	DC current gain	V _{CE} =1V, I _C =100mA	80	—	400	
h _{FE(3)}	DC current gain	V _{CE} =1V, I _C =800mA	40	—	—	
V _{CE(sat)}	Collector-emitter saturation voltage	I _C =800mA, I _B =80mA	—	—	0.5	V
V _{BE(sat)}	Base-emitter saturation voltage	I _C =800mA, I _B =80mA	—	—	1.2	
f _T	Transition frequency	V _{CE} =6V, I _C =20mA, f=30MHZ	150	—	—	MHZ
h _{FE(2)} Rank	L(80-300)	H(300-400)				



Typical Performance Characteristics($T_J = 25^\circ\text{C}$, unless otherwise noted)

Figure 1 : Static Characteristic

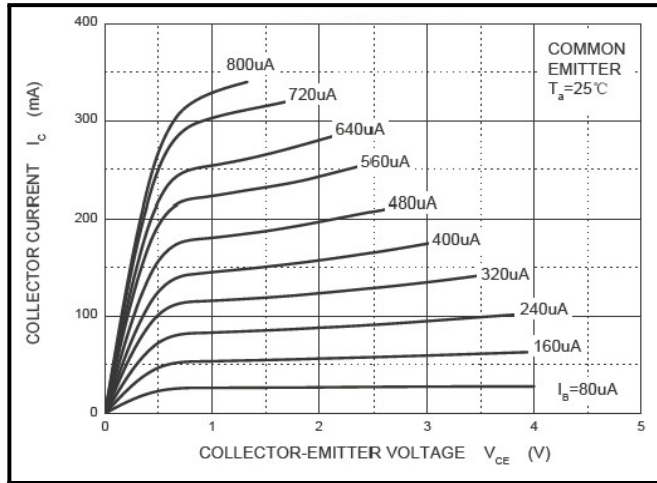


Figure 2 : $h_{FE} \sim I_C$

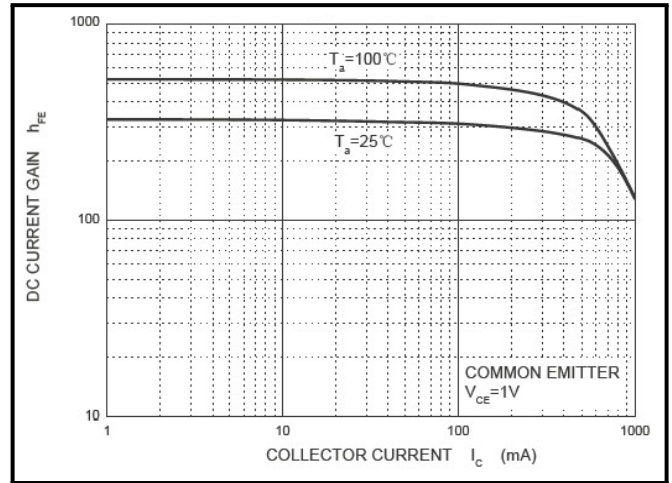


Figure 3 : $V_{CE(sat)} \sim I_C$

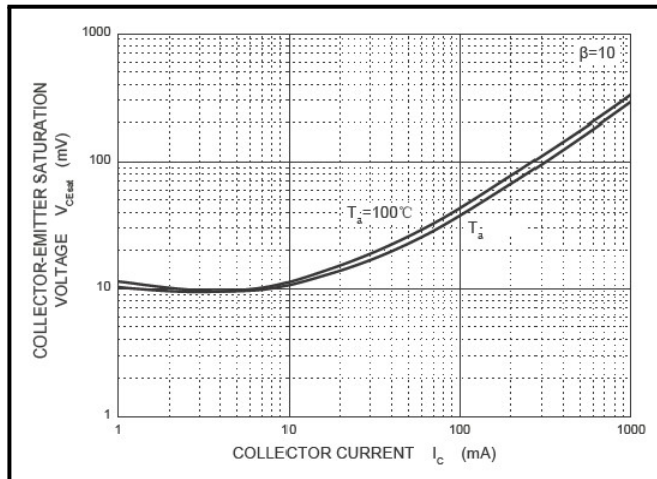


Figure 4 : $V_{BE(sat)} \sim I_C$

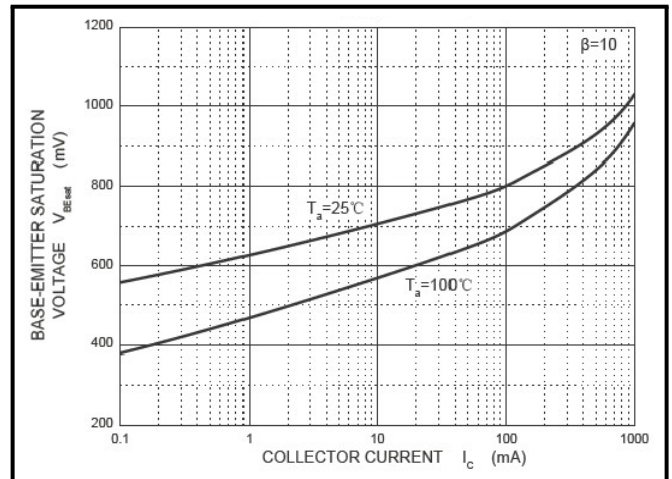


Figure 6 : $f_T \sim I_C$

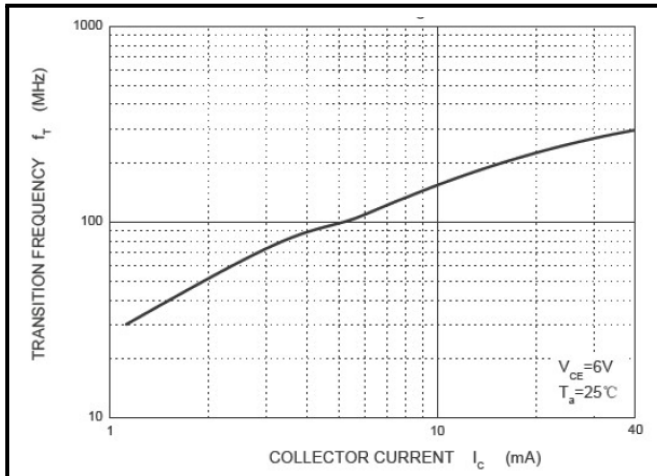
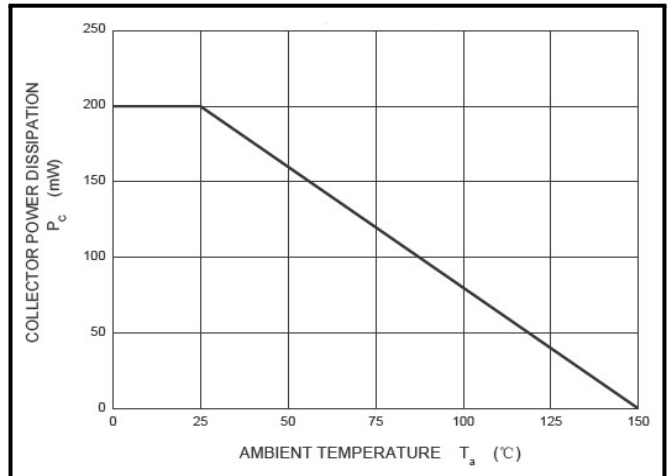


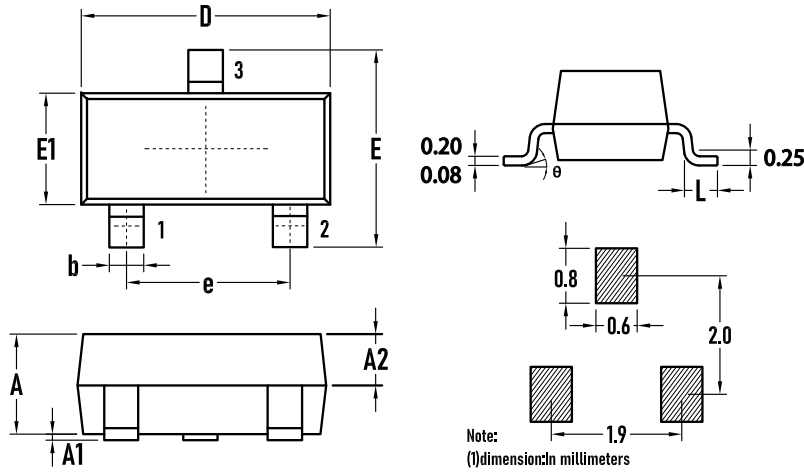
Figure 6 : $P_C \sim T_a$



M8050

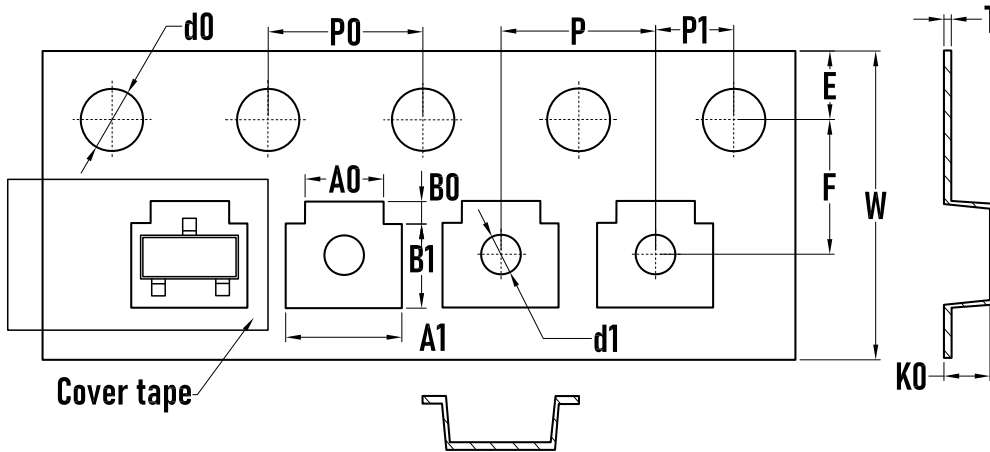
NPN Plastic-Encapsulate Transistor

Outline Drawing - SOT-23



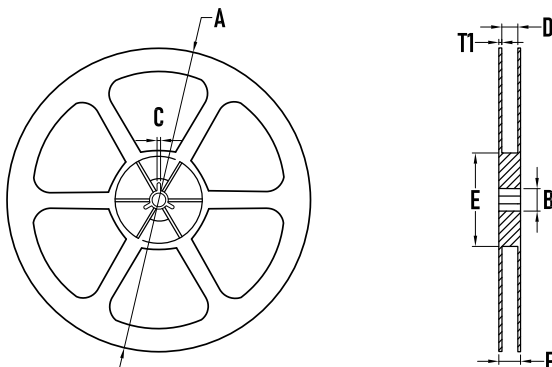
SYMBOL	MILLIMETER		
	MIN.	Typ	MAX
A	0.90	1.00	1.10
A1	0.01	—	0.10
A2	0.50	0.60	0.70
D	2.80	2.90	3.00
b	0.25	0.35	0.45
E	2.10	2.30	2.50
E1	1.20	1.30	1.40
e	1.80	1.90	2.00
L	0.25	0.35	0.45
θ	0	—	8°

Packaging Tape - SOT-23



SYMBOL	MILLIMETER
A0	2.10±0.10
A1	3.10±0.10
B0	0.65±0.10
B1	2.75±0.10
d0	1.55±0.10
d1	1.00±0.05
E	1.75±0.10
F	3.50±0.10
K0	1.10±0.10
P	4.00±0.10
P0	4.00±0.10
P1	2.00±0.10
W	8.00±0.30
T	0.20 ±0.05

Packaging Reel



SYMBOL	MILLIMETER
A	177.8±0.2
B	3.1
C	13.50
D	9.6±0.3
E	75±0.2
F	12.3±0.3
T1	1.0±0.2
Quantity	3000PCS

**BORN SEMICONDUCTOR, INC. ALL
RIGHT RESERVED**

Specifications are subject to change without notice.

Please refer to <http://www.born-tw.com> for current information.

Revision: 2022-Jan-1-A

