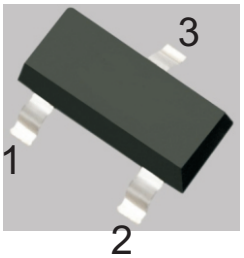
S8050

NPN TRANSISTOR

SOT-23



1.BASE
2.EMITTER
3.COLLECTOR

FEATURES
- Complimentary to S8550
- Collector Current: IC=0.5A

MAXIMUM RATINGS (Ta=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector–Base Voltage	V_{CBO}	40	V
Collector–Emitter Voltage	V_{CEO}	25	V
Emitter–Base Voltage	V_{EBO}	5	V
Collector Current — Continuous	I_C	500	mA
Collector Power Dissipation	P_C	300	mW
Thermal Resistance From Junction To Ambient	R_{thJA}	417	℃/W
Operation Junction and Storage Temperature Range	T_J, T_{stg}	-55~+150	℃

CLASSIFICATION OF h_{FE1}

Rank	L	H	J
Range	120-200	200-350	300-400

ELECTRICAL CHARACTERISTICS (TA = 25°C unless otherwise noted.)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C = 100uA, I_E = 0	40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C = 1 mA, I_B = 0	25			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E = 100uA, I_C = 0	5			V
Collector cut-off current	I_{CBO}	V_{CB} = 40V, I_E = 0			0.1	uA
Collector cut-off current	I_{CEO}	V_{CE} = 20V, I_B=0			0.1	uA
Emitter cut-off current	I_{EBO}	V_{EB} = 5V, I_C =0			0.1	uA
DC current gain	h_{FE1}	V_{CE} = 1V, I_C = 50mA	120		400	
	h_{FE2}	V_{CE} = 1V, I_C = 500mA	50			
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C = 500mA, I_B = 50mA			0.6	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C = 500mA,I_B=50mA			1.2	V
Transition frequency	f_T	V_{CE} = 6V, I_C = 20mA, f=30MHz	150			MHz

TYPICAL CHARACTERICS

Fig.1 Static characteristics

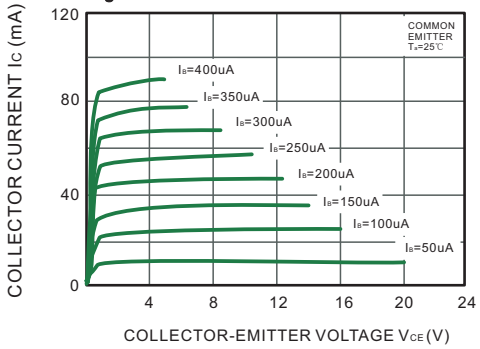


Fig.2 Pc —— Ta

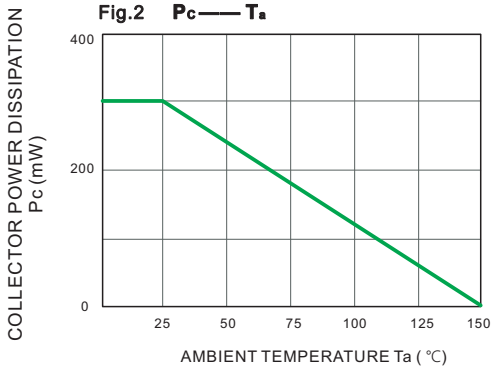


Fig.3 Cob / Cib —— VCB / VEB

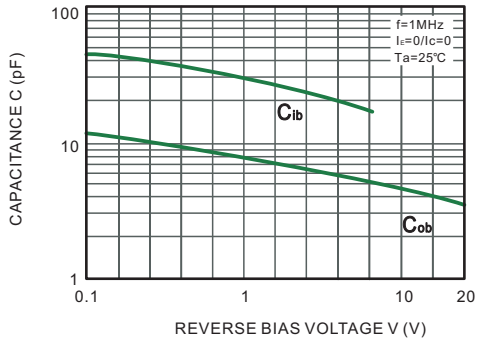


Fig.4 VCEsat —— Ic

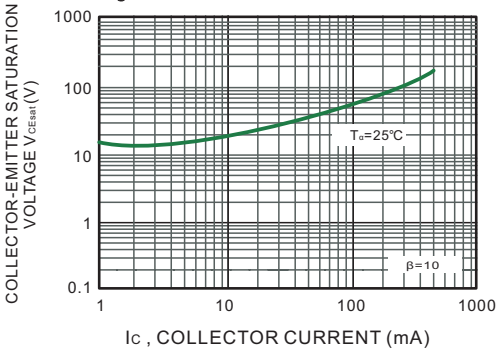


Fig.5 hFE--Ic

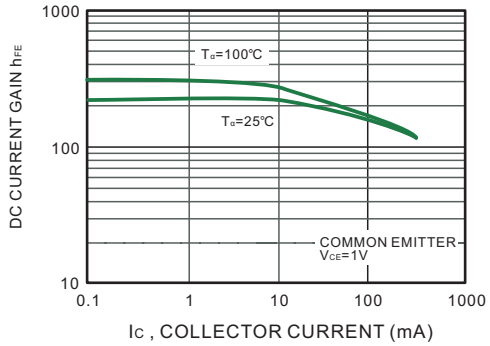


Fig.6 VBEsat —— Ic

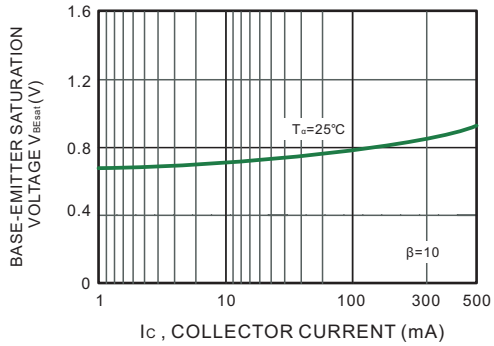


Fig.7 Ic —— VBE

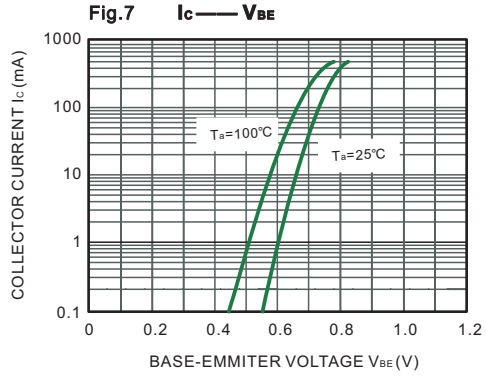
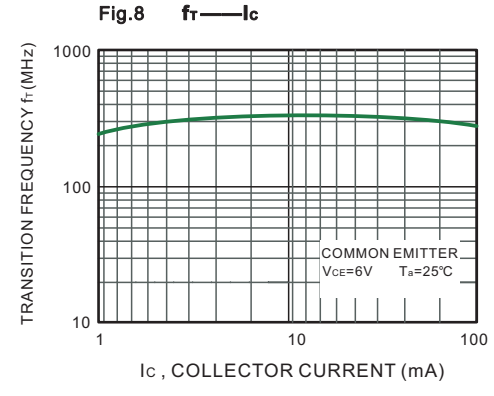
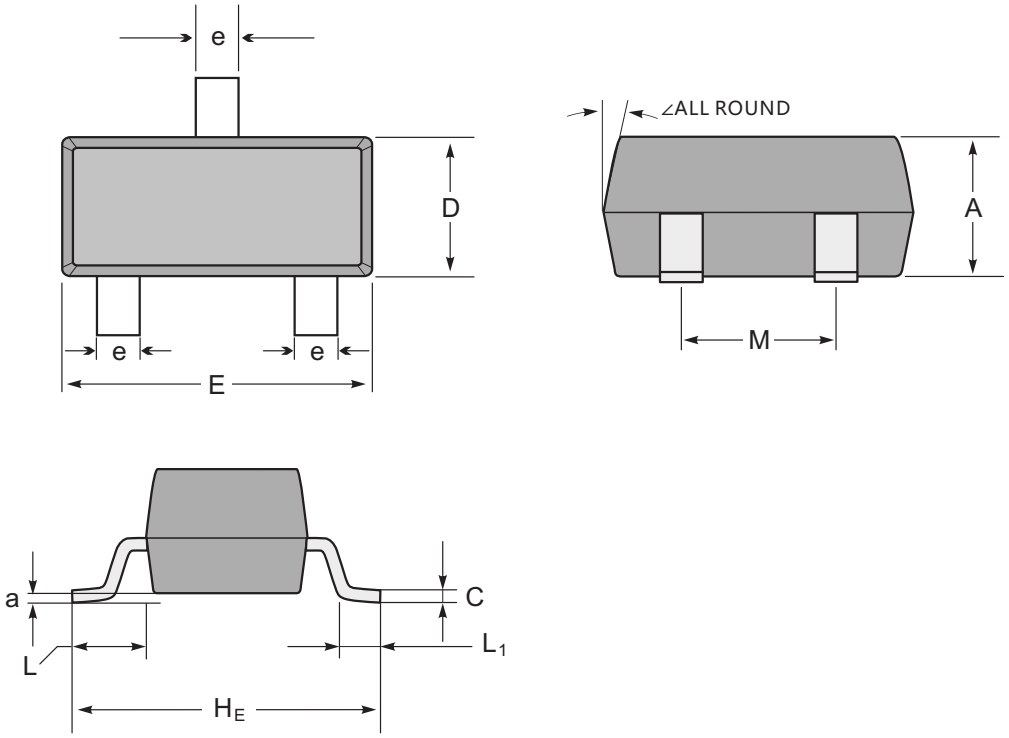


Fig.8 fT ——Ic



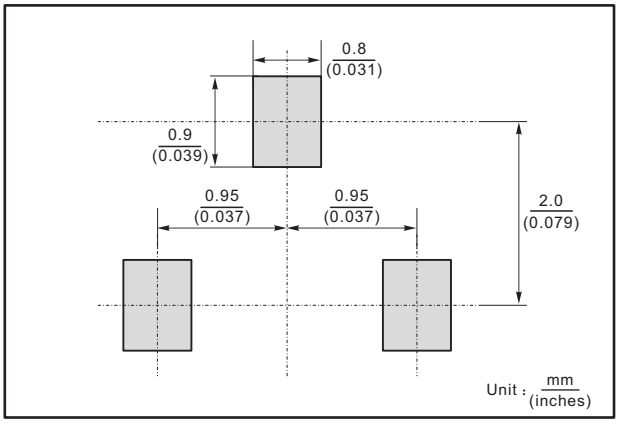
SOT-23 Package Outline Dimensions



SOT-23 mechanical data

UNIT		A	C	D	E	H_E	e	M	L	L_1	a	∠
mm	max	1.1	0.15	1.4	3.0	2.6	0.5	1.95	0.55 (ref)	0.36 (ref)	0.0	12°
	min	0.9	0.08	1.2	2.8	2.2	0.3	1.7			0.15	
mil	max	43	6	55	118	102	20	77	22 (ref)	14 (ref)	0.0	
	min	35	3	47	110	87	12	67			6	

The recommended mounting pad size

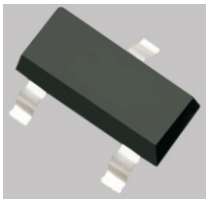


Marking

Type number	Marking code
S8050	J3Y

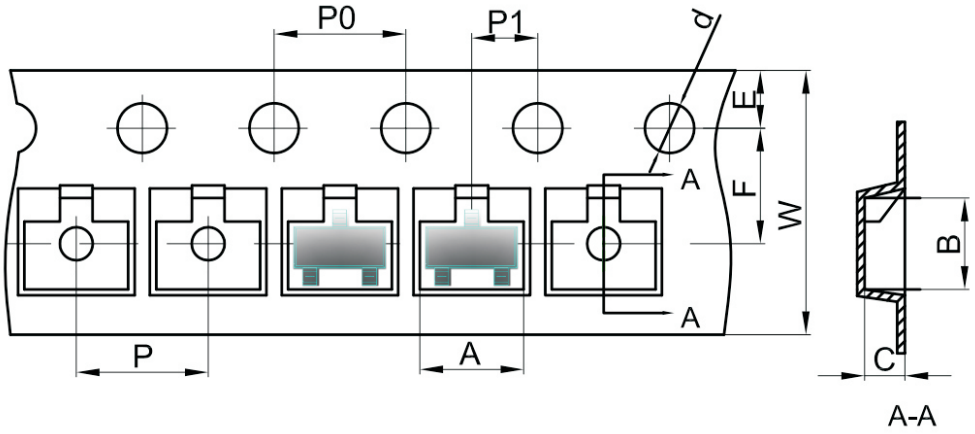
SOT-23 Packing

1.The method of packaging and dimension are shown as below figure. (Dimension in mm)



SOT-23

SOT-23 Embossed Carrier Tape



Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

SOT-23 Tape Leader and Trailer