SS8050

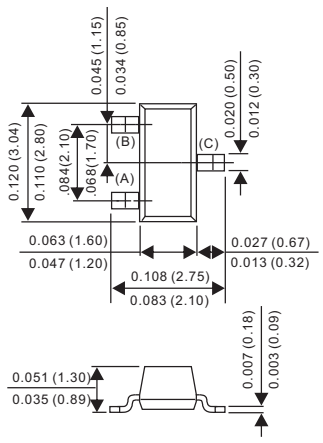
General Purpose Transistors
NPN Silicon

Features

- High current capacity in compact package I_C = 1.5A.
- Epitaxial planar type
- Pb-Free package is available
- Suffix "-H" indicates Halogen free parts, ex. SS8050-H.

Package outline

SOT-23



Dimensions in inches and (millimeters)

Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, SOT-23
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Mounting Position : Any
- Weight : Approximated 0.008 gram

Maximum ratings (AT T_A=25°C unless otherwise noted)

PARAMETER	Symbol	MAX.	UNIT
Collector-base voltage	V_{CBO}	40	V
Collector-emitter voltage	V_{CEO}	25	V
Emitter-base voltage	V_{EBO}	5.0	V
Collector current-continuoun	I_C	1500	mAdc

Thermal Characteristics

PARAMETER		Symbol	MIN.	TYP.	MAX.	UNIT
Total device dissipation FR-5 board (1)	T_A = 25°C	P_D			225	mW
	Derate above 25°C				1.8	mW/°C
Thermal resistance	Junction to ambient	$R_{\theta JA}$			556	°C/W
Total device dissipation alumina substrate(2)	T_A = 25°C	P_D			300	mW
	Derate above 25°C				2.4	mW/°C
Thermal resistance	Junction to ambient	$R_{\theta JA}$			417	°C/W
Operating Junction temperature Range		T_J	-55		+150	°C
Storage temperature Range		T_{STG}	-55		+150	°C

1.FR-5 = 1.0 X 0.75 X0.062 in.
2.Alumina = 0.4 X 0.3 X 0.024 in. 99.5% alumina.

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Electrical Characteristics (AT T_A=25°C unless otherwise noted)

Off characteristics

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Collector-base breakdown voltage	I_c = 100uA	$V_{(BR)CBO}$	40			V
Collector-emitter breakdown voltage	I_c = 1.0mA	$V_{(BR)CEO}$	25			V
Emitter-base breakdown voltage	I_E = 100uA	$V_{(BR)EBO}$	5.0			V
Collector cutoff current	V_{CB} = 35V	I_{CBO}			150	nA
Emitter cutoff current	V_{EB} = 4.0V	I_{EBO}			150	nA

On characteristics

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
DC current gain	I_c = 100mA, V_{CE} = 1.0V	h_{FE} *Note	80		400	
Collector-emitter saturation voltage	I_c = 800mA, I_B = 80mA	$V_{CE(sat)}$			0.5	V

Note

*	L	H	J
h_{FE}	80~200	200~350	300~400

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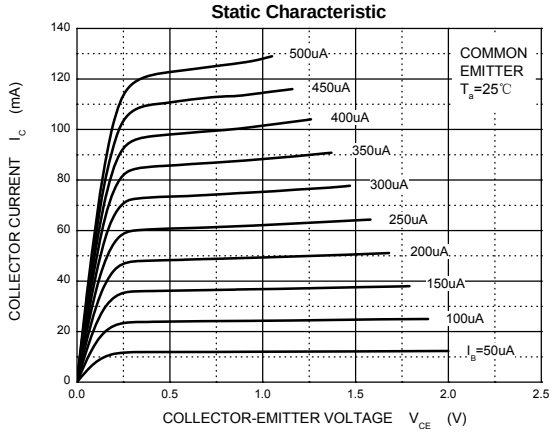
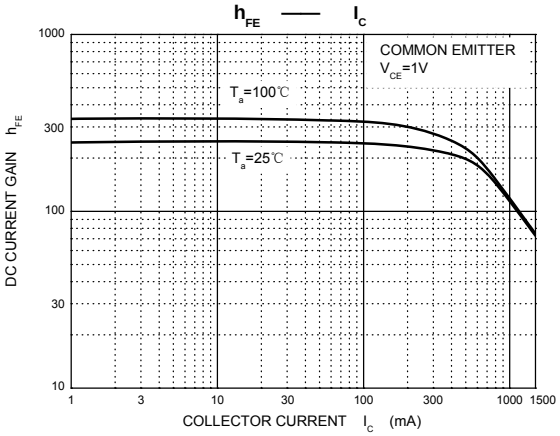
Rating and characteristic curves

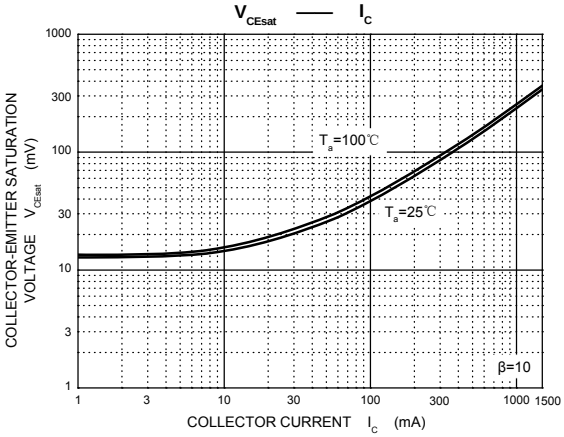
Static Characteristic



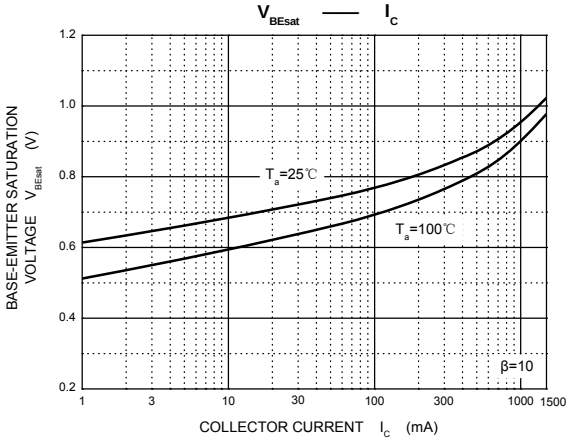
h_{FE} —— I_C



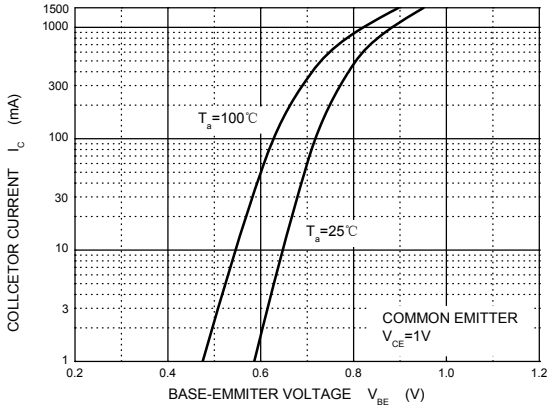
V_{CEsat} —— I_C



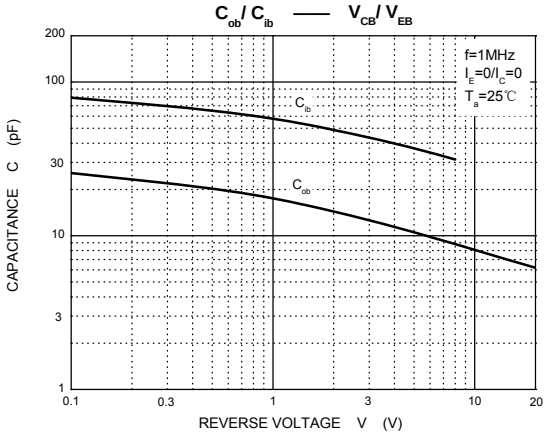
V_{BEsat} —— I_C



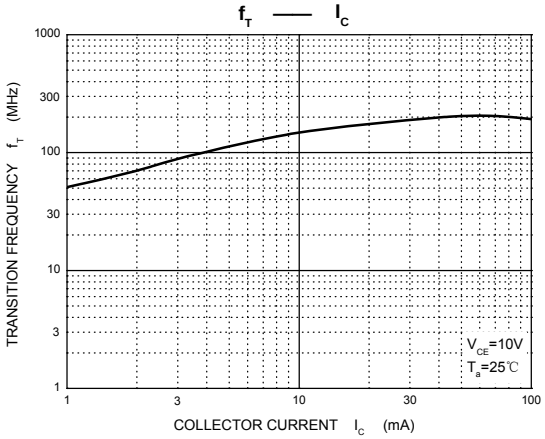
V_{BE} —— I_C



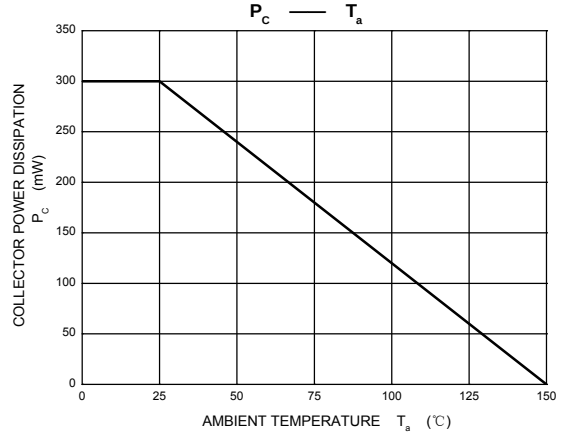
C_{ob} / C_{ib} —— V_{CB} / V_{EB}



f_T —— I_C



P_C —— T_a



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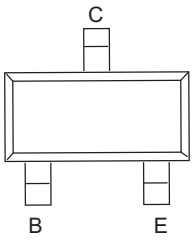
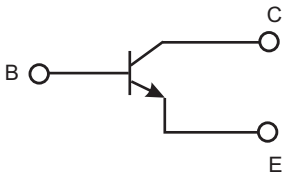
Pinning information

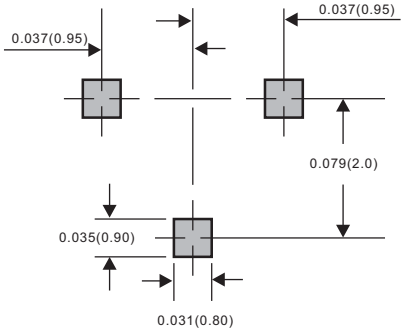
Pin	Simplified outline	Symbol
PinB Base PinC Collector PinE Emitter		

Marking

Type number	Marking code
SS8050	Y1

Suggested solder pad layout

SOT-23



Dimensions in inches and (millimeters)

Reel packing

PACKAGE	REEL SIZE	REEL (pcs)	COMPONENT SPACING (m/m)	BOX (pcs)	INNER BOX (m/m)	REEL DIA, (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
SOT-23	7"	3,000	4.0	30,000	183*123*183	178	382*257*387	240,000	11.6

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