

H8050

General Purpose Transistors NPN Silicon

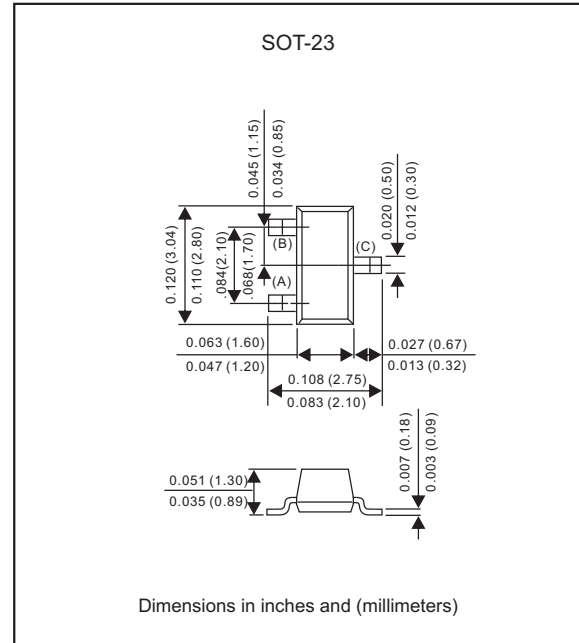
Features

- High current capacity in compact package $I_c = 0.5A$.
- Epitaxial planar type
- Pb-Free package is available
- Suffix "-H" indicates Halogen free parts, ex. H8050-H.

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

Package outline



Maximum ratings (AT $T_A = 25^\circ C$ 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	500	mAdc

Thermal Characteristics

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

1.FR-5 = 1.0 X 0.75 X 0.062 in.

2.Alumina = 0.4 X 0.3 X 0.024 in. 99.5% alumina.

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Electrical Characteristics (AT $T_A = 25^\circ\text{C}$ unless otherwise noted)

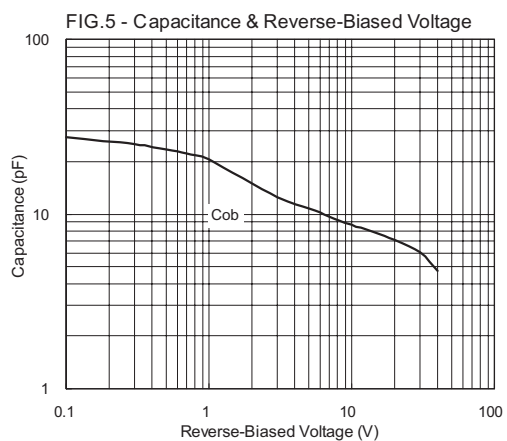
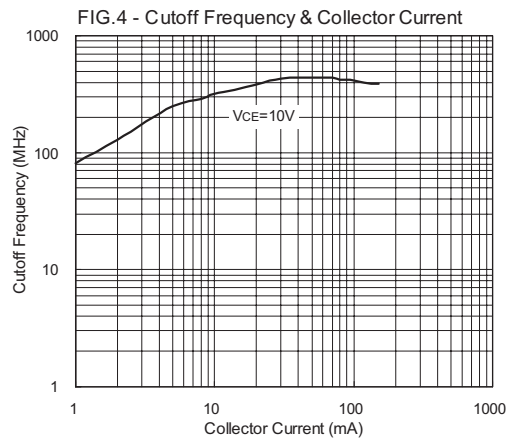
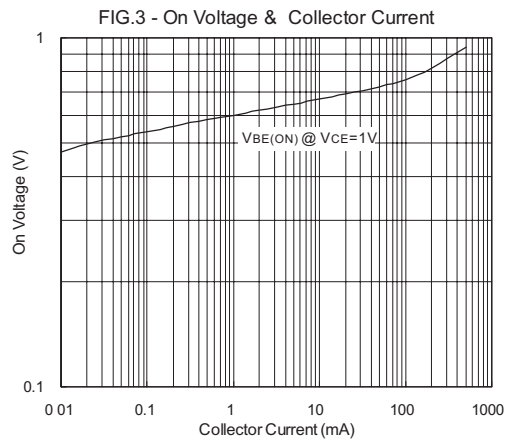
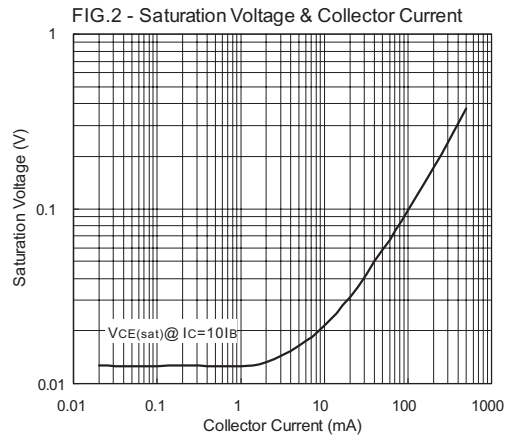
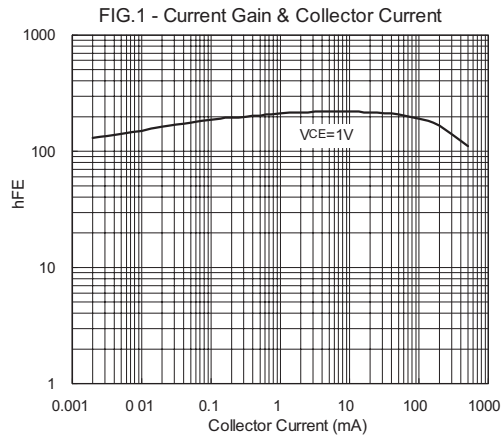
Off characteristics

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Collector-base breakdown voltage	$I_c = 100\mu\text{A}$	$V_{(BR)CBO}$	40			V
Collector-emitter breakdown voltage	$I_c = 1.0\text{mA}$	$V_{(BR)CEO}$	25			V
Emitter-base breakdown voltage	$I_E = 100\mu\text{A}$	$V_{(BR)EBO}$	5.0			V
Collector cutoff current	$V_{CB} = 20\text{V}$	I_{CEO}			100	nA
Collector cutoff current	$V_{CB} = 40\text{V}$	I_{CBO}			100	nA
Emitter cutoff current	$V_{EB} = 5.0\text{V}$	I_{EBO}			100	nA

On characteristics

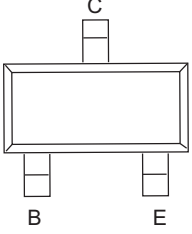
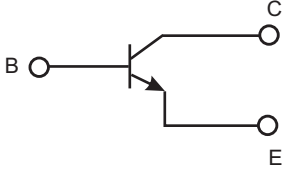
PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
DC current gain	$I_c = 50\text{mA}, V_{CE} = 1.0\text{V}$	h_{FE}	200		350	
	$I_c = 500\text{mA}, V_{CE} = 1.0\text{V}$	h_{FE}	50			
Collector-emitter saturation voltage	$I_c = 500\text{mA}, I_B = 50\text{mA}$	$V_{CE(sat)}$			0.6	V
Base-emitter saturation voltage	$I_c = 500\text{mA}, I_B = 50\text{mA}$	$V_{BE(sat)}$			1.2	V

Rating and characteristic curves



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Pinning information

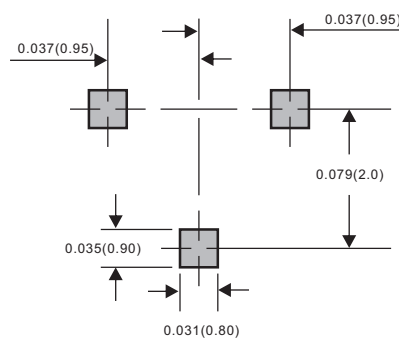
Pin	Simplified outline	Symbol
PinB Base PinC Collector PinE Emitter		

Marking

Type number	Marking code
H8050	J3Y

Suggested solder pad layout

SOT-23



Dimensions in inches and (millimeters)