

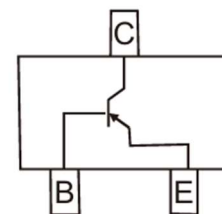
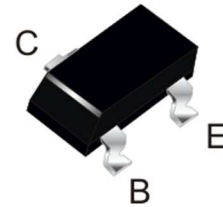
PNP Type Bipolar Transistor

Features

- Low profile package
- Ideal for automated placement
- Complementary to MMBT2222A (NPN)
- Power Dissipation of 250mW
- High Stability and High Reliability

Appearance & Symbol

SOT-23



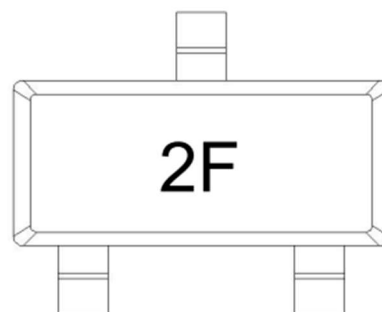
Mechanical Data

- Package: SOT-23
- UL Flammability Classification Rating 94V-0
- Terminals: Plated solderable per MIL-STD-750, method 2026
- Tape Reel: 3000pcs

Application

- Amplifying signal
- Electronic switch
- Oscillating circuit
- Variable resistance

Marking information



2F= Marking Code

Absolute Maximum Ratings (T_A = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V _{CB0}	-60	V
Collector-Emitter Voltage	V _{CEO}	-60	V
Emitter-Base Voltage	V _{EBO}	-5	V
Collector Current Continuous	I _C	-600	mA
Collector Power Dissipation	P _C	250	mW
Thermal Resistance from Junction to Ambient	R _{θJA}	500	°C/W
Junction Temperature	T _J	-55 to +150	°C
Junction and Storage Temperature	T _{STG}	-55 to +150	°C

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

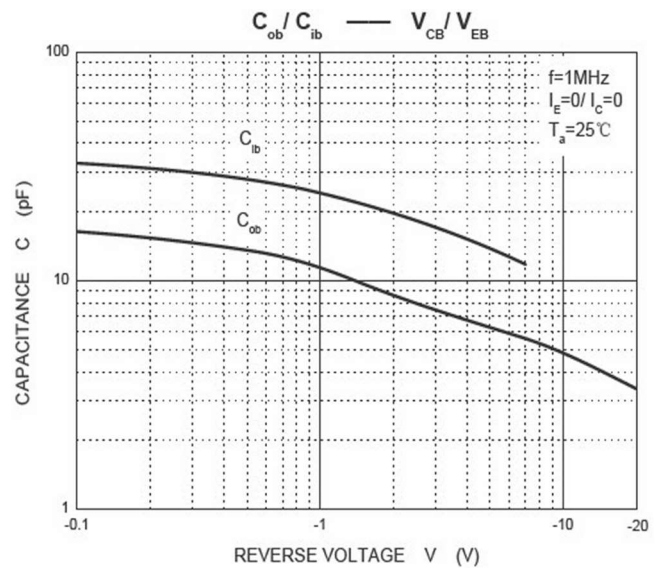
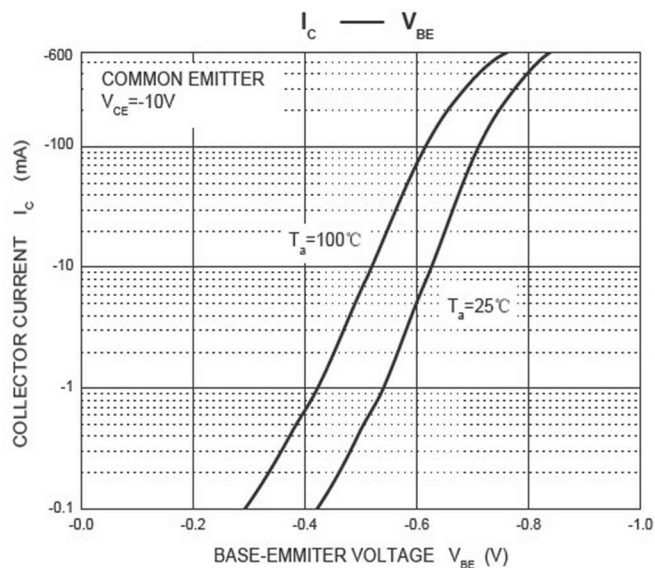
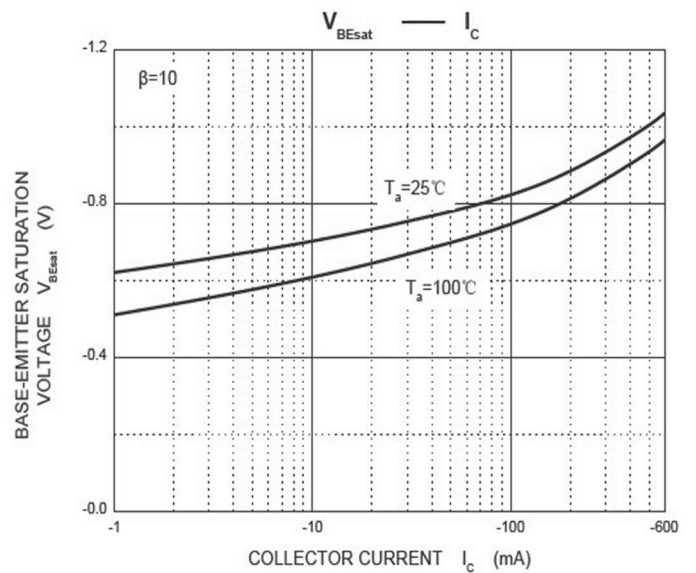
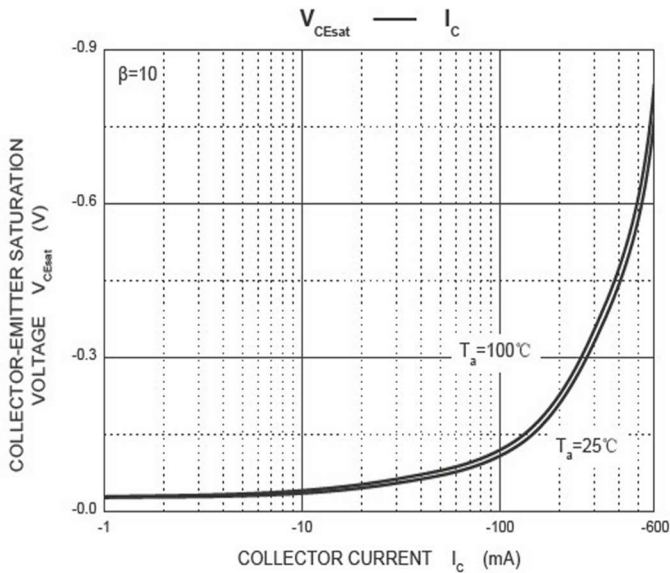
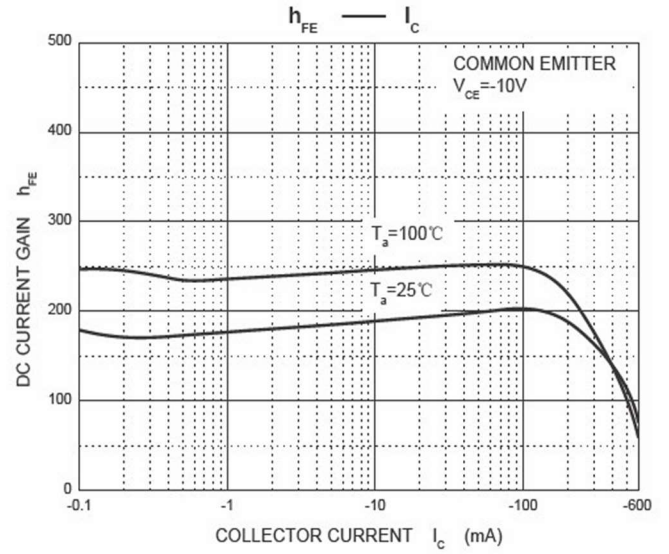
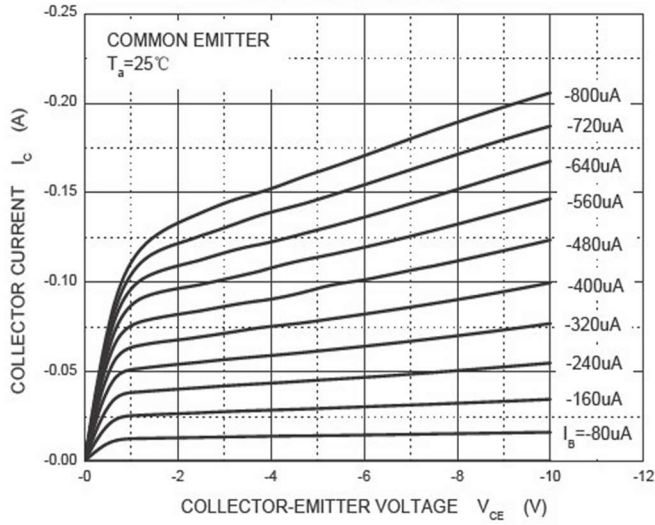
Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	V _{(BR)CBO}	I _C =-100μA, I _E =0	-60		V
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C =-1mA, I _B =0	-60		V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E =-10μA, I _C =0	-5		V
Collector cut-off current	I _{CBO}	V _{CB} =-50V, I _E =0		-20	nA
Collector cut-off current	I _{CEX}	V _{CE} =-30V, V _{BE(off)} =-0.5V		-50	nA
Emitter cut-off current	I _{EBO}	V _{EB} =-5V, I _C =0		-10	nA
DC current gain	h _{FE(1)}	V _{CE} =-10V, I _C =-150mA	100	300	
	h _{FE(2)}	V _{CE} =-10V, I _C =-0.1mA	75		
	h _{FE(3)}	V _{CE} =-10V, I _C =-1mA	100		
	h _{FE(4)}	V _{CE} =-10V, I _C =-10mA	100		
	h _{FE(5)}	V _{CE} =-10V, I _C =-500mA	50		
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =-150mA, I _B =-15mA		-0.4	V
		I _C =-500mA, I _B =-50mA		-1.6	V
Base -emitter saturation voltage	V _{BE(sat)}	I _C =-150mA, I _B =-15mA		-1.3	V
		I _C =-500mA, I _B =-50mA		-2.6	V
Transition frequency	f _T	V _{CE} =-20V, I _C =-50mA, f=100MHz	200		MHz
Delay time	t _d	V _{CC} =-30V, I _C =-150mA, I _{B1} =-15mA		10	ns
Rise time	t _r			25	ns
Storage time	t _s	V _{CE} =-6V, I _C =-150mA, I _{B1} =I _{B2} =-15mA		225	ns
Fall time	t _f			60	ns

Classification of h_{FE(1)}

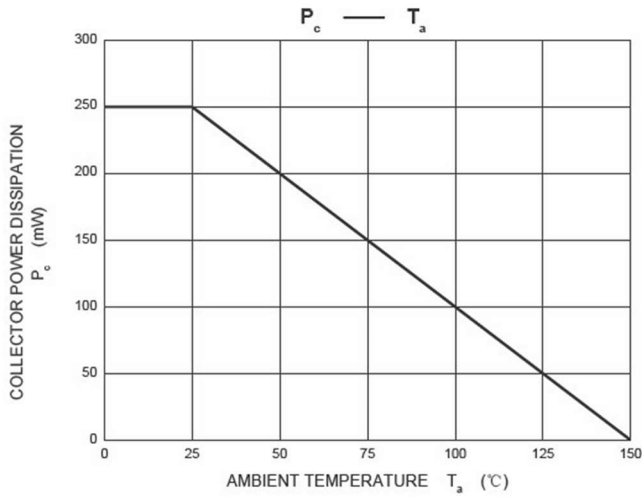
Rank	L	H
Range	100 - 200	200 - 300

Typical Characteristics

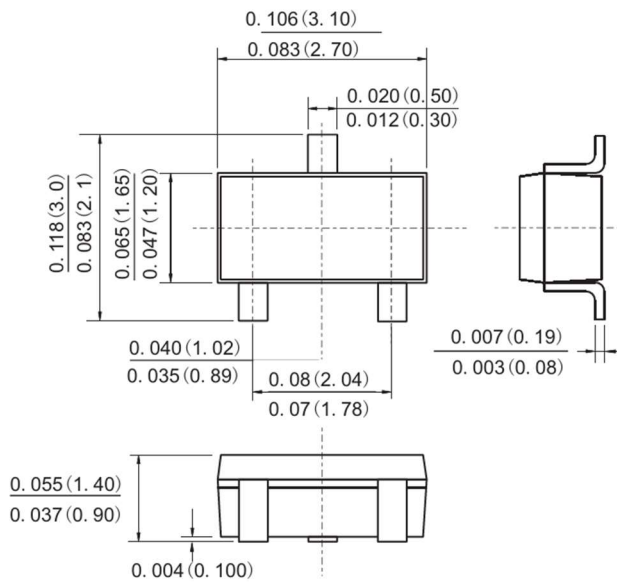
Static Characteristic



Typical Characteristics

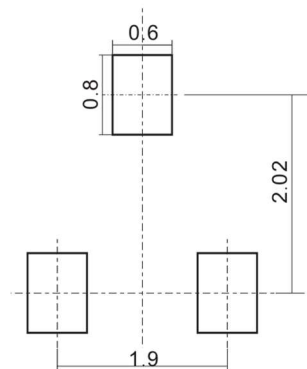


Package Outline Dimensions (Units: mm) SOT-23



Dimensions in inches and (millimeters)

Suggested pad layout



Dimensions in millimeters