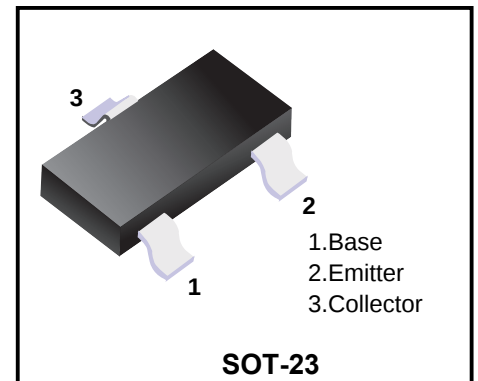


NPN Transistors

Features

- Excellent hFE linearity
- Collector Current :Ic=0.5A



Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	VCBO	40	V
Collector - Emitter Voltage	VCEO	25	V
Emitter - Base Voltage	VEBO	5	V
Collector Current - Continuous	Ic	500	mA
Collector Power Dissipation	Pc	300	mW
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	-55 to 150	°C

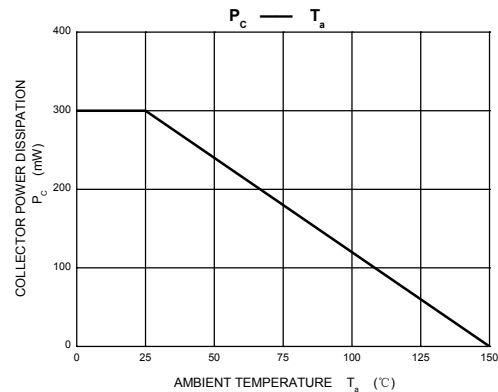
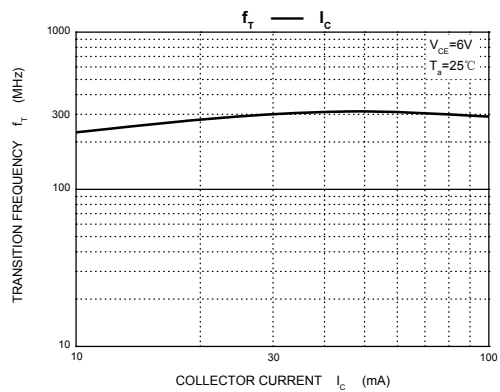
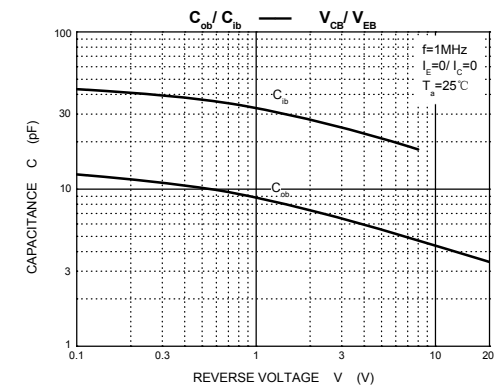
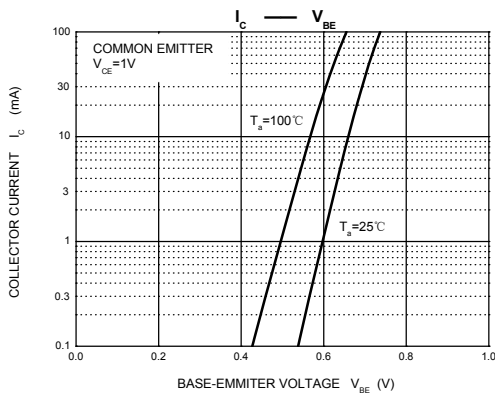
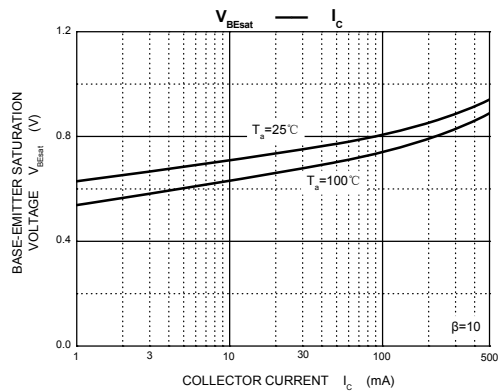
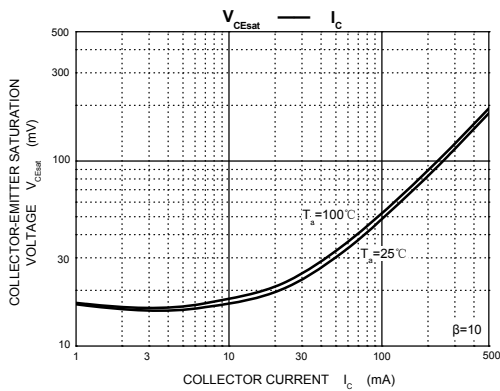
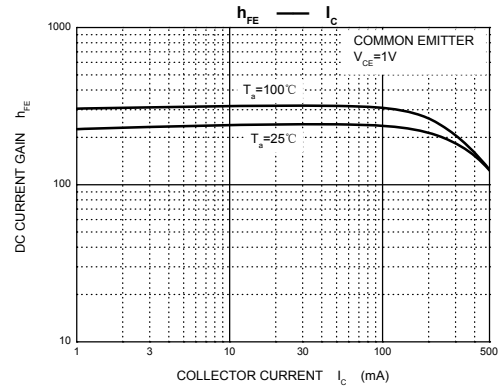
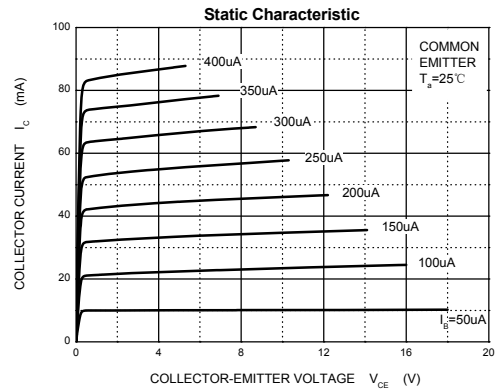
Electrical Characteristics (Ta=25°C unless otherwise specified.)

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector - base breakdown voltage	VCBO	Ic= 100 μ A, IE=0	40			V
Collector - emitter breakdown voltage	VCEO	Ic= 0.1mA, IB=0	25			V
Emitter - base breakdown voltage	VEBO	IE=100 μ A, IC=0	5			V
Collector cut - off current	ICBO	VCB=40 V, IE=0			0.1	μ A
Collector cut -off current	ICEO	VCE=20V, IB=0			1	μ A
Emitter cut - off current	IEBO	VEB= 5V, IC=0			0.1	μ A
DC current gain	hFE	VCE=1V, Ic= 50mA	120		400	
		VCE=1V, Ic=500mA	40			
Collector - emitter saturation voltage	VCE(sat)	Ic=500 mA, IB= 50mA			0.6	V
Base - emitter saturation voltage	VBE(sat)	Ic=500 mA, IB= 50mA			1.2	V
Transition frequency	fr	VCE=6V, Ic= 20mA,f=30MHz	150			MHz

hFE Classification

Type	S9013	S9013-L	S9013-H	S9013-J
Range	200-350	120-200	144-202	300-400
Marking	J3			

Typical Characteristics



Ordering information

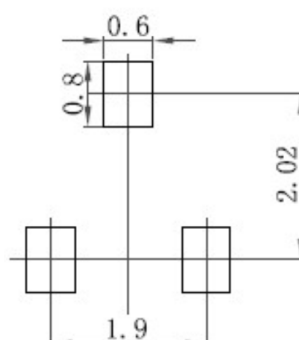
Package	Packing Description	Base Quantity	Packing Quantity
SOT-23	Tape/Reel, 7" reel	3000pcs/Reel	24000PCS/Box 120000PCS/Carton

Package Dimensions

SOT-23

Dim.	Millimeter (mm)		mil	
	Min.	Max.	Min.	Max.
A	0.9	1.15	35	45
A1	0.1		3.9	
bp	0.38	0.48	15	19
C	0.09	0.15	3.54	5.9
D	2.8	3.0	110	118
E	1.2	1.4	47	55
E	1.9		75	
E1	0.95		37	
HE	2.1	2.55	83	100
Lp	0.15	0.45	5.9	18
Q	0.45	0.55	18	22
v	0.2		7.9	
W	0.1		4	

The recommended mounting pad size



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