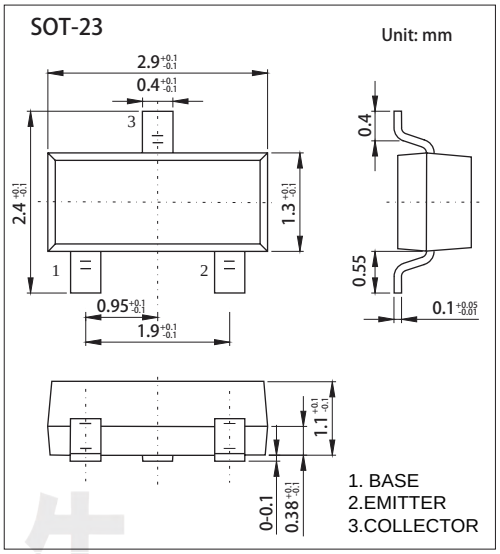
NPN Transistors

S9013



■ Features

- High Collector Current.
- Excellent h_{FE} Linearity.
- Complementary to S9012

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	40	V
Collector - Emitter Voltage	V_{CEO}	25	
Emitter - Base Voltage	V_{EBO}	5	
Collector Current - Continuous	I_C	500	mA
Collector Power Dissipation	P_C	300	mW
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	416	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{stg}	-55 to 150	

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■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Collecto- base breakdown voltage	V_{CBO}	I_C= 100 μA， I_E=0	40			V
Collector- emitter breakdown voltage	V_{CEO}	I_C= 1 mA， I_B=0	25			
Emitter - base breakdown voltage	V_{EBO}	I_E= 100 μA， I_C=0	5			
Collector cut-off current	I_{CBO}	V_{CB}= 40 V , I_E=0			0.1	μA
Collector cut-off current	I_{CEO}	V_{CE}= 20 V , I_B=0			0.1	
Emitter cut-off current	I_{EBO}	V_{EB}= 5V , I_C=0			0.1	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=500 mA, I_B= 50mA			0.6	V
Base - emitter saturation voltage	$V_{BE(sat)}$	I_C=500 mA, I_B= 50mA			1.2	
Base-emitter voltage	V_{BE}	V_{CB}=1V,I_C=10mA			0.7	
DC current gain	$h_{FE(1)}$	V_{CE}= 1V, I_C= 50mA	120		400	
	$h_{FE(2)}$	V_{CE}= 1V, I_C= 500mA	40			
Collector output capacitance	C_{ob}	V_{CB}=6V, I_E=0, f=1MHz			8	pF
Transition frequency	f_T	V_{CE}= 6V, I_C= 20mA,f=30MHz	150			MHz

■ Classification of hFE(1)

Rank	L	H	J
Range	120-200	200-350	300-400
Marking	J3		

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■ Typical Characterisitics