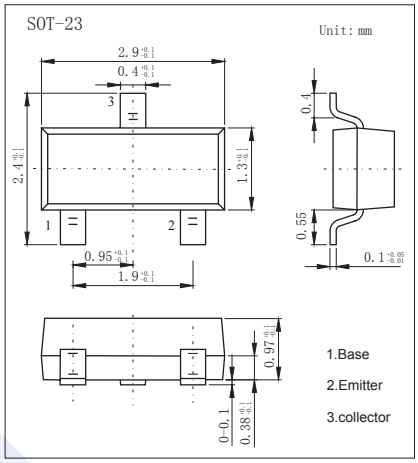
NPN Transistors

BFS17 (KFS17)



■ Features

- Collector Current Capability I_C=25mA
- Collector Emitter Voltage V_{CEO}=15V

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	25	V
Collector - Emitter Voltage	V_{CEO}	15	
Emitter - Base Voltage	V_{EBO}	2.5	
Collector Current - Continuous	I_C	25	mA
Collector Current - Pulse	I_{CP}	50	
Collector Power Dissipation	P_C	300	mW
Thermal Resistance From Junction to Soldering Point	$R_{\theta JS}$	260	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-65 to 150	

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	I_C= 100 μA, I_E= 0	25			V
Collector- emitter breakdown voltage	V_{CEO}	I_C= 1 mA, I_B= 0	15			
Emitter - base breakdown voltage	V_{EBO}	I_E= 100 μ A, I_C= 0	2.5			
Collector-base cut-off current	I_{CBO}	V_{CB}= 25 V , I_E= 0			100	nA
Emitter cut-off current	I_{EBO}	V_{EB}= 2.5V , I_C=0			100	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=25 mA, I_B=2.5 mA			0.5	V
Base - emitter saturation voltage	$V_{BE(sat)}$	I_C=25 mA, I_B=2.5mA			1.2	
DC current gain	h_{FE}	V_{CE}= 1V, I_C= 2mA	25	90		
		V_{CE}= 1V, I_C= 25mA	25	90		
Collector Capacitance	C_C	V_{CB}= 10V, I_E=i_e= 0,f=1MHz			1.5	pF
Emitter Capacitance	C_e	V_{EB}= 0.5V, I_C=i_C= 0,f=1MHz			2	
Feedback Capacitance	C_{re}	V_{CE}= 5V, I_C=1mA,f=1MHz		0.65		
Noise Figure	NF	V_{CE}= 5V, I_C= 2mA,R_S=50Ω, f=500MHz		4.5		dB
Transition frequency	f_T	V_{CE}= 5V, I_C= 2mA, f=500MHz		1		GHz
		V_{CE}= 5V, I_C= 25 mA, f=500MHz		1.6		

■ Marking

Marking	E1*

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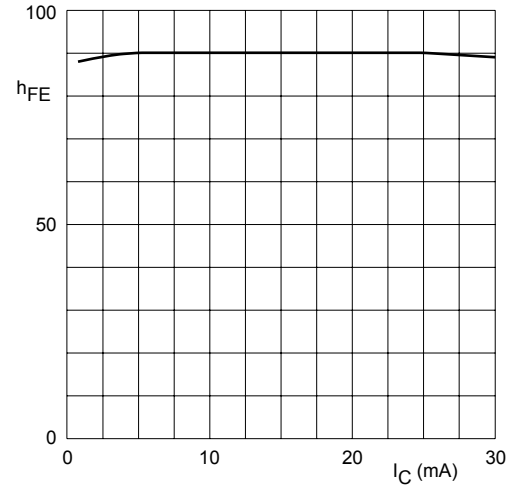
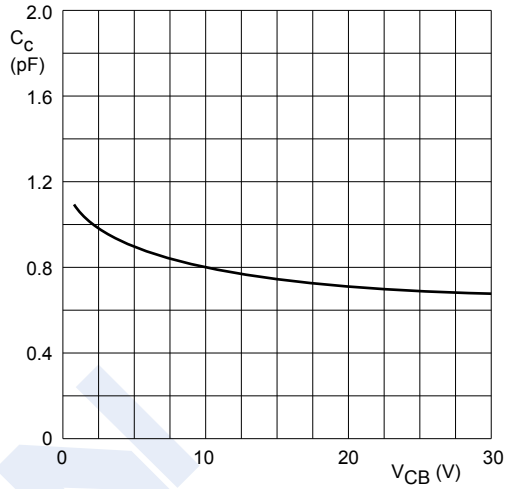
■ Typical Characterisitics



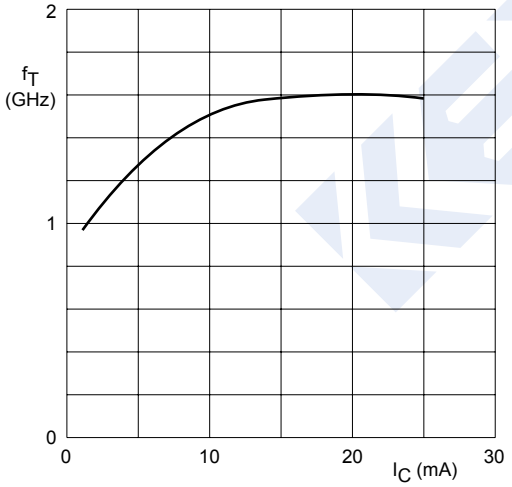
V_{CE} = 1 V; T_j = 25 °C.

Fig.2 DC current gain as a function of collector current.



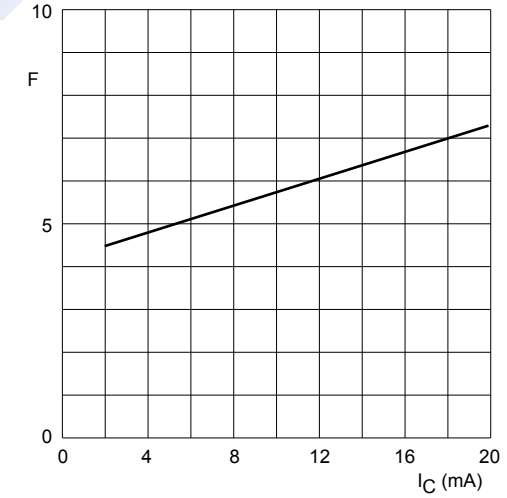
$I_E = i_e$ = 0; f = 1 MHz; T_j = 25 °C.

Fig.3 Collector capacitance as a function of collector-base voltage.



V_{CE} = 5 V; f = 500 MHz; T_j = 25 °C.

Fig.4 Transition frequency as a function of collector current.



V_{CE} = 5 V; R_S = 50 Ω; f = 500 MHz; T_j = 25 °C.

Fig.5 Minimum noise figure as a function of collector current.