Semiconductor **Data sheet**

BCX70J,K NPN GENERAL PURPOSE TRANSISTOR

SOT-23

1. BASE
2. EMITTER
3. COLLECTOR

FEATURES

- Low current
- Low voltage

MARKING : BCX70J：AJ, BCX70K:AK

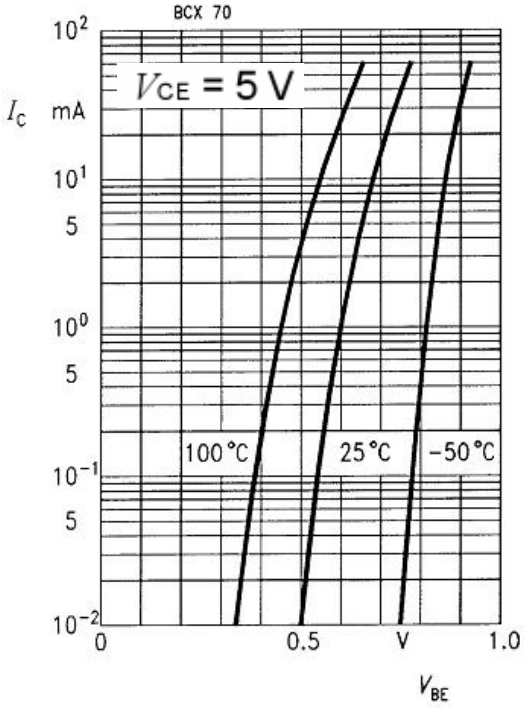
MAXIMUM RATINGS (T_A=25℃ unless otherwise noted)

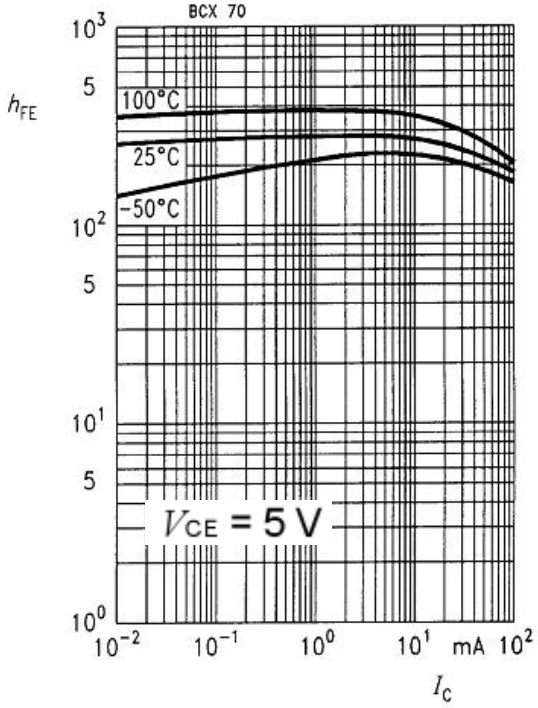
Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	45	V
V_{CEO}	Collector-Emitter Voltage	45	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current -Continuous	200	mA
P_C	Collector Power Dissipation	250	mW
T_j	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55-150	℃

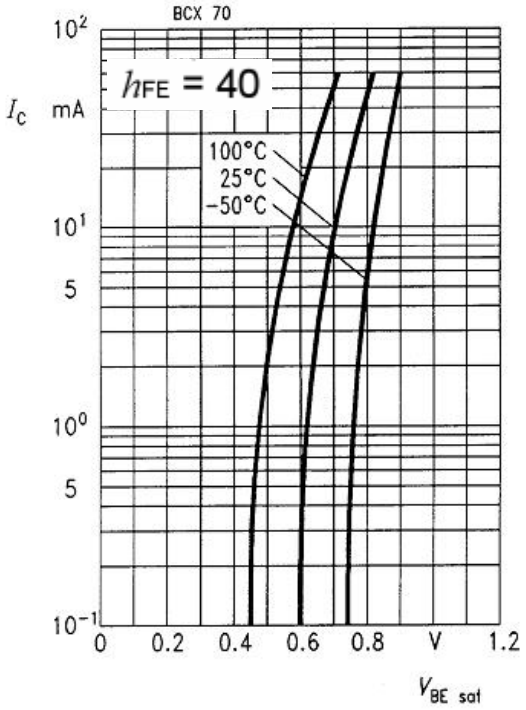
ELECTRICAL CHARACTERISTICS (Tamb=25℃ unless otherwise specified)

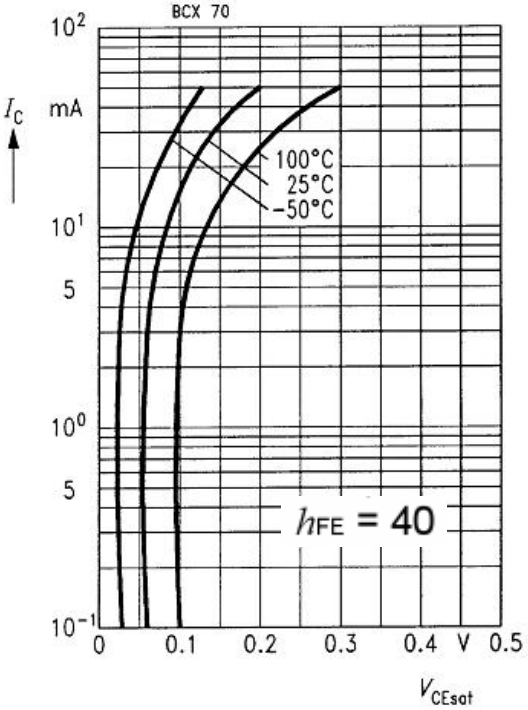
Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=10μA,I_E=0	45			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=2mA,I_B=0	45			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=1μA,I_C=0	5			V
Collector cut-off current	I_{CES}	V_{CE}=45V,V_{BE}=0			20	nA
DC current gain BCX70J	h_{FE1}	V_{CE}=5V,I_C=10μA	30			
	h_{FE2}	V_{CE}=5V,I_C=2mA	250		460	
	h_{FE3}	V_{CE}=1V,I_C=50mA	90			
DC current gain BCX70K	h_{FE1}	V_{CE}=5V,I_C=10μA	100			
	h_{FE2}	V_{CE}=5V,I_C=2mA	380		630	
	h_{FE3}	V_{CE}=1V,I_C=50mA	100			
Collector-emitter saturation voltage	$V_{CE(sat)1}$	I_C= 10mA I_B= 0.25 mA	0.05		0.35	V
	$V_{CE(sat)2}$	I_C= 50mA I_B=1.25 mA	0.1		0.55	V
Base -emitter saturation voltage	$V_{BE(sat)1}$	I_C= 10mA I_B=-0.25 mA	0.6		0.85	V
	$V_{BE(sat)2}$	I_C= 50mA I_B= 1.25 mA	0.7		1.05	V
Base-emitter voltage	V_{BE}	V_{CE}=5V,I_C=2mA	0.55		0.75	V
Collector output capacitance	C_{ob}	V_{CB}=10V,I_E=0,f=1MHz		1.7		pF
Noise Figure	NF	V_{CE}=5V,I_C=200μA, f=1KHz,BW=200Hz,RS=2KΩ			6	dB
Gain-Bandwidth Product	f_T	V_{CE}= 5 V, I_C=10mA,f =100 MHz	100	250		MHz

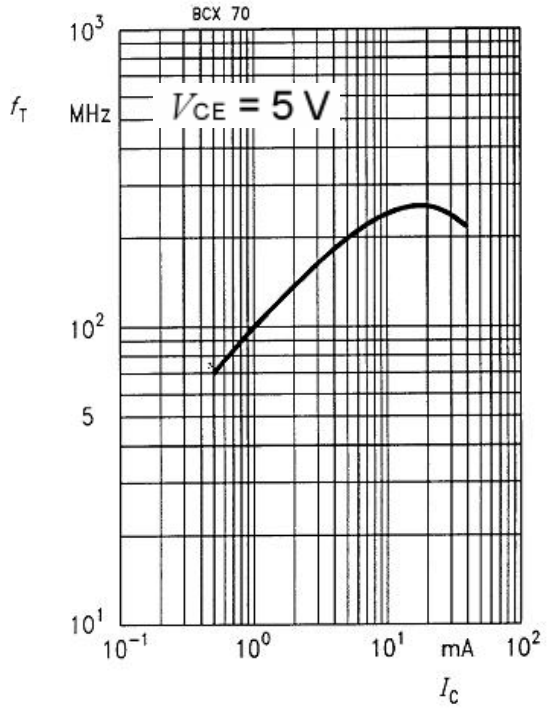
Typical Characteristics BCX70J,K

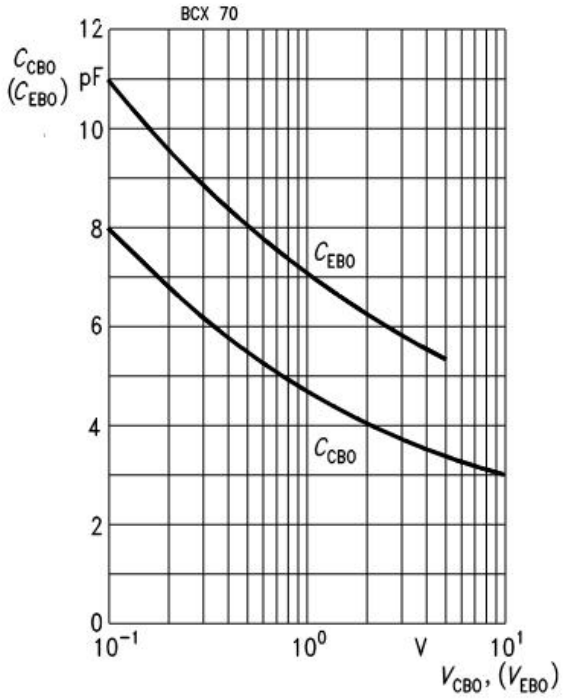









BCX 70
10^3
f_T
MHz
V_{CE} = 5 V
10^2
5
10^1
10^{-1}
10^0
10^1
mA
10^2
I_C


BCX 70
12
C_{CBO} (C_{EBO}) pF
10
8
6
4
2
0
C_{EBO}
C_{CBO}
10^{-1}
10^0
V
10^1
V_{CBO}, (V_{EBO})