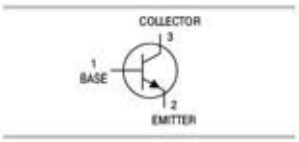
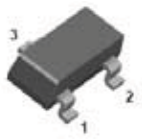
NPN General Purpose Amplifier: BCW60

Features:
- Low current(max.100mA)
- Low voltage (max.32V)

Applications:
- General purpose medium power amplifier
- Switching appilication





SOT-23

Ordering Information

Type No.	Marking:	Package Code:
BCW60B/C/D	AB/AC/AD	SOT-23

Maximum Ratings & Characteristics: Tamb=25°C unless otherwise specified

Parameter:	Symbol:	Value:	Unit:
Collector - Base Voltage	V_{CBO}	32	V
Collector - Emitter Voltage	V_{CEO}	32	V
Emitter - Base Voltage	V_{ebo}	5	V
Collector Current Continuous	I_C	100	mA
Collector Dissipation	P_C	250	mA
Junction and Storage Temperature	T_j, T_{stg}	-65 to +150	°C

Maximum Ratings & Characteristics: Tamb=25°C unless otherwise specified

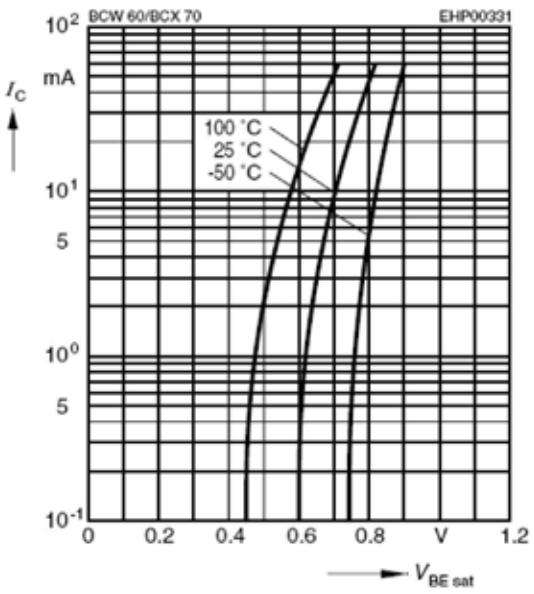
Parameter:		Symbol:	Test Conditions:	Min:	Typ:	Max:	Unit:
Collector - Base Breakdown Voltage		$V_{(BR)CBO}$	I_C=10µA, I_E=0	32			V
Collector - Emitter Breakdown Voltage		$V_{(BR)CEO}$	I_C=10mA, I_B=0	32			V
Emmiter - Base Breakdown Voltage		$V_{(BR)EBO}$	I_E=1µA, I_C=0	5			V
Collector Cut-off Current		I_{CBO}	V_{CB}=-32V, I_E=0			20	nA
Emitter Cut-off Current		I_{EBO}	V_{EB}=4V ,I_C=0			20	nA
DC Current Gain	BCW60B BCW60C BCW60D	h_{FE}	V_{CE}=5V ,I_C=10uA	20 40 100			
DC Current Gain	BCW60B BCW60C BCW60D	h_{FE}	V_{CE}=5V ,I_C=2mA	180 250 380		310 460 630	
DC Current Gain	BCW60B BCW60C BCW60D	h_{FE}	V_{CE}=1V ,I_C=50mA	70 90 100			
Collector - Emitter Saturation Voltage		$V_{CE(sat)}$	I_C=10mA ,I_B=0.25mA I_C=50mA ,I_B=1.25mA	0.05 0.1		0.35 0.55	V
Base - Emitter Saturation Voltage		$V_{BE(sat)}$	I_C=10mA ,I_B=0.25mA I_C=50mA ,I_B=1.25mA	0.6 0.7		0.85 1.05	V
Base Emitter Voltage		$V_{BE\ (on)}$	V_{CE}=5V, I_C=2mA	0.55		0.75	V
Transition Frequency		f_T	V_{CE}=5V,I_C=10mA f=100MHz	100			MHz
Noise Figure		F	I_C=200uA,V_{CE}=5V, R_S=2kΩ,f=1kHz,B=200Hz			6	dB

Typical Characteristics: Tamb=25°C unless otherwise specified

Ratings & Characteristic Curves

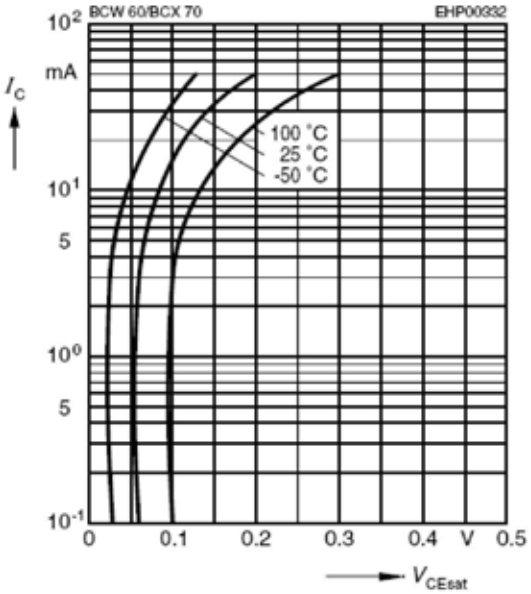
Base-emitter saturation voltage

$I_C = f(V_{BEsat})$, $h_{FE} = 40$



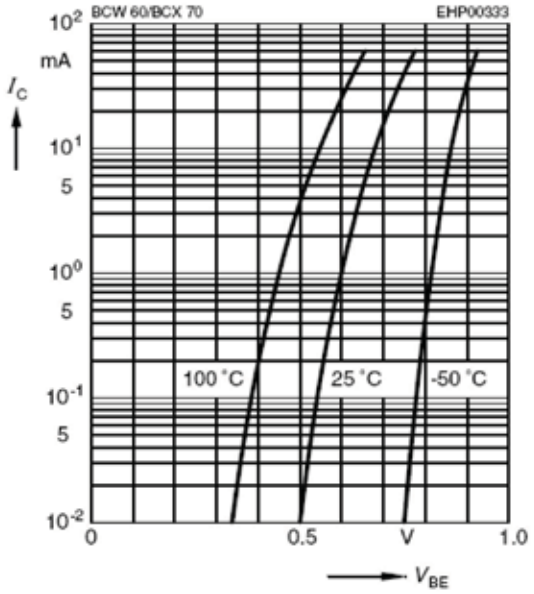
Collector-emitter saturation voltage

$I_C = f(V_{CEsat})$, $h_{FE} = 40$



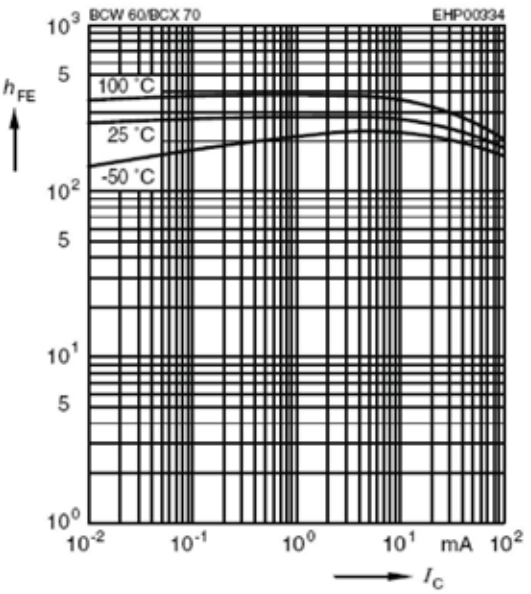
Collector current $I_C = f(V_{BE})$

$V_{CE} = 5V$



DC current gain $h_{FE} = f(I_C)$

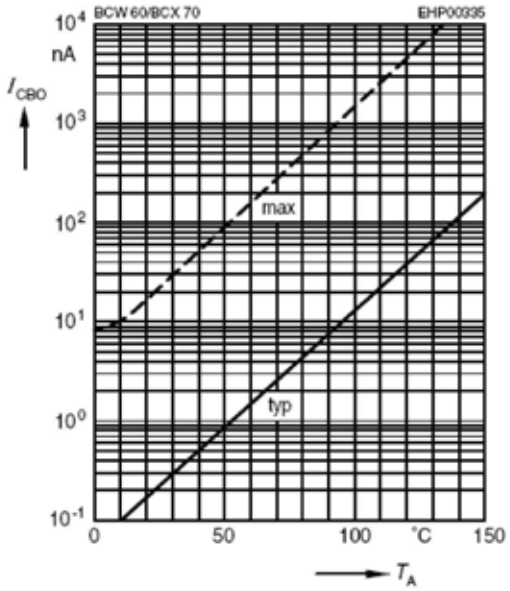
$V_{CE} = 5V$



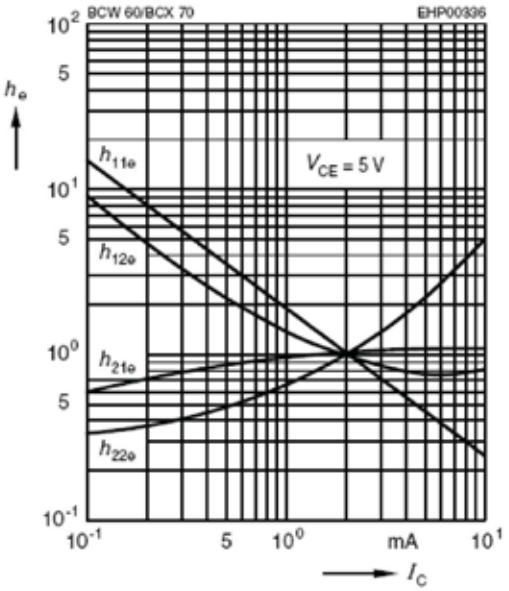
Typical Characteristics: Tamb=25°C unless otherwise specified

Ratings & Characteristic Curves

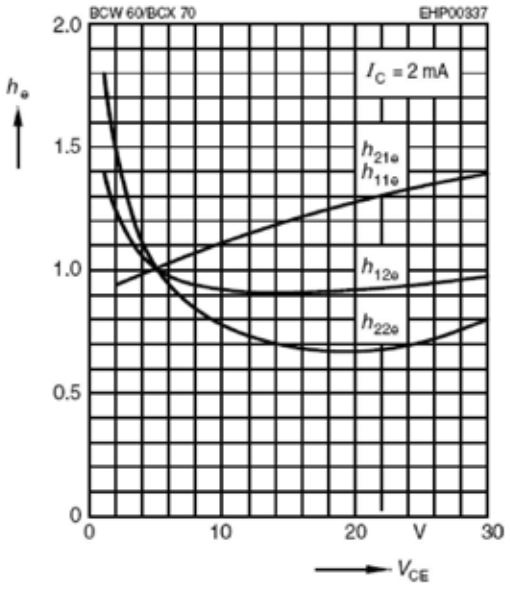
Collector cutoff current $I_{CBO} = f(T_A)$
$V_{CB} = V_{CEmax}$



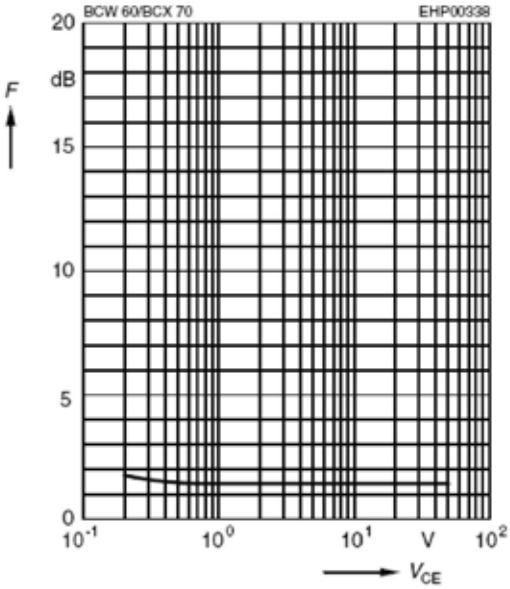
h parameter $h_e = f(I_C)$ normalized
$V_{CE} = 5V$



h parameter $h_e = f(V_{CE})$ normalized
$I_C = 2mA$



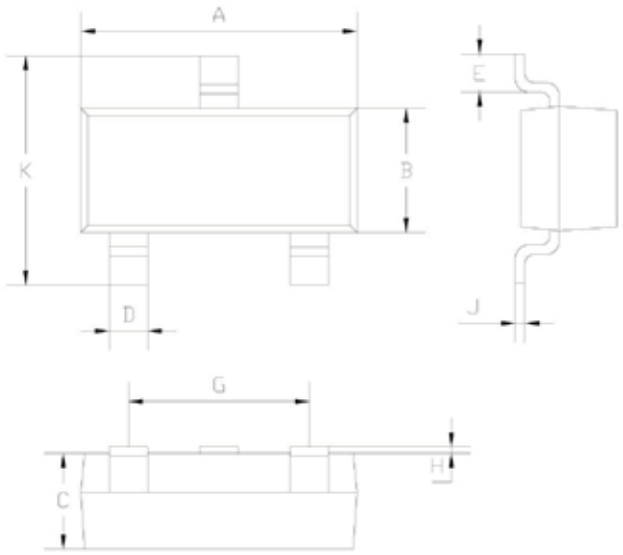
Noise figure $F = f(V_{CE})$
$I_C = 0.2mA$, $R_S = 2k\Omega$, $f = 1kHz$



Package Outline

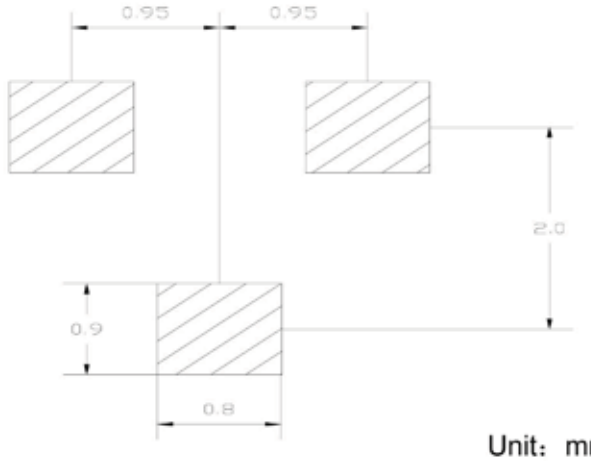
PACKAGE OUTLINE

Plastic surface mounted package SOT-23



SOT-23		
Dim	Min	Max
A	2.85	2.95
B	1.25	1.35
C	1.0 Typical	
D	0.4 Typical	
E	0.35	0.48
G	1.85	1.95
H	0.02	0.1
J	0.1 Typical	
K	2.35	2.45
All Dimensions in mm		

SOLDERING FOOTPRINT



Unit：mm

PACKAGE INFORMATION

Device	Package	Shipping
BCW60	SOT-23	3000/Tape&Reel