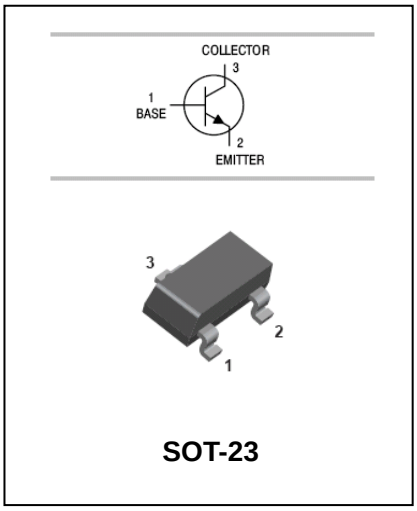
NPN General Purpose Amplifier BCW60

FEATURES

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

Lead-free



SOT-23

APPLICATIONS

- General purpose medium power amplifier.
- Switching appilication.

ORDERING INFORMATION

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

MAXIMUM RATING @ Ta=25℃ unless otherwise specified

Symbol	**Parameter**	**Value**	**Unit**
V_{CBO}	Collector-Base Voltage	32	V
V_{CEO}	Collector-Emitter Voltage	32	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	DC Collector Current	100	mA
I_{CM}	Peak Collector Current	200	mA
I_{BM}	Peak base Current	200	mA
P_C	Collector Dissipation	330	mW
T_j	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-65 to +150	
R_{thJA}	Junction ambient	≤310	K/W
R_{thJS}	Junction-soldering point	≤240	

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ELECTRICAL CHARACTERISTICS @ Ta=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	32	-	-	V
Collector-emitter breakdown voltage		$V_{(BR)CEO}$	I_C=10mA ,I_B=0	32	-	-	V
Emitter-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 V_{CB}=32V, I_E=0, Ta=150℃	-	-	20	nA
Emitter cut-off current		I_{EBO}	V_{EB}=4V ,I_C=0	-	-	20	nA
DC current gain	BCW60A BCW60B BCW60C BCW60D	h_{FE}	V_{CE}=5V ,I_C=10uA	20 20 40 100	140 200 300 460	- - - -	-
DC current gain	BCW60A BCW60B BCW60C BCW60D	h_{FE}	V_{CE}=5V, I_C=2mA	120 180 250 380	170 250 350 500	220 310 460 630	-
DC current gain	BCW60A BCW60B BCW60C BCW60D	h_{FE}	V_{CE}=1V, I_C=50mA	50 70 90 100	-	-	-
Collector-emitter saturation voltage		$V_{CE(sat)}$	I_C=10mA ,I_B=0.25mA I_C=50mA ,I_B=1.25mA	- -	0.12 0.2	0.25 0.55	V
Base-emitter saturation voltage		$V_{BE(sat)}$	I_C=10mA ,I_B=0.25mA I_C=50mA, I_B=1.25mA	- -	0.7 0.83	0.85 1.05	V
Base-emitter voltage		$V_{BE(on)}$	I_C=10uA ,V_{CE}=5V I_C=2mA,V_{CE}=5V I_C=50mA ,V_{CE}=1V	- 0.55 -	0.52 0.65 0.78	- 0.75 -	V
Transition frequency		f_T	V_{CE}=5V,I_C=20mA f=100MHz	-	250	-	MHz
Collector-base Capacitance		C_{cb}	V_{CB}=10V, f=1MHz	-	3	-	pF
Emitter-base Capacitance		C_{eb}	V_{EB}=0.5V, f=1MHz	-	8	-	

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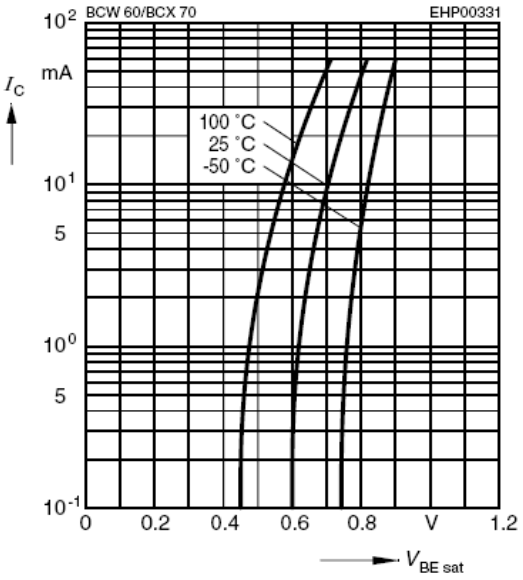
TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

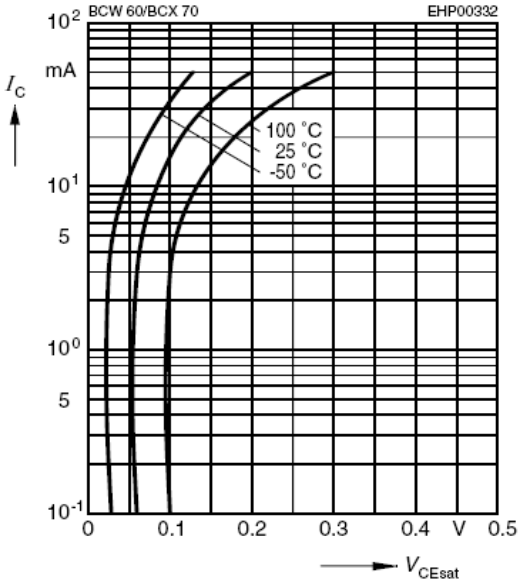
Base-emitter saturation voltage

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



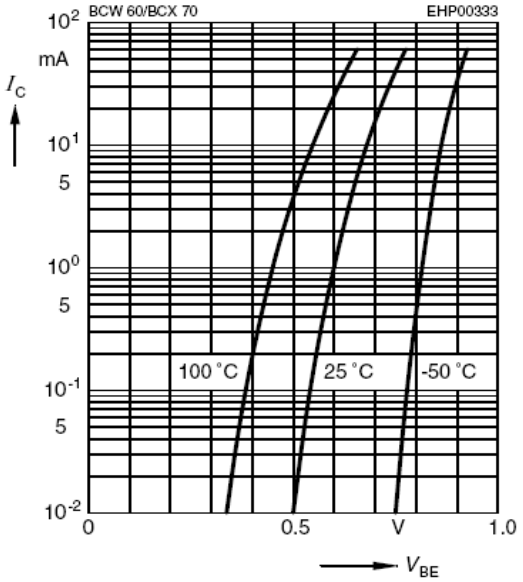
Collector-emitter saturation voltage

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



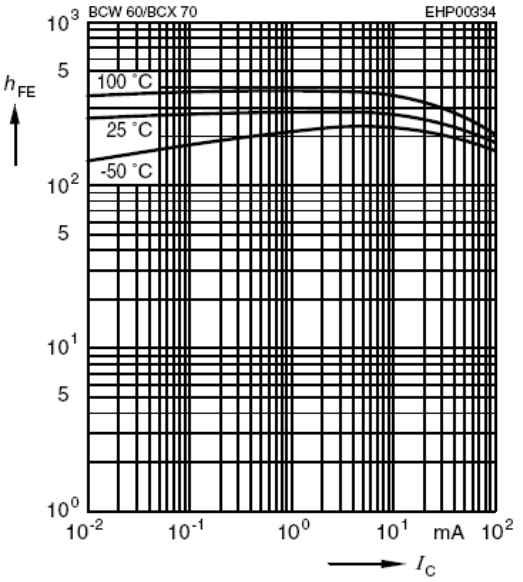
Collector current $I_C = f(V_{BE})$

V_{CE} = 5V



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

V_{CE} = 5V



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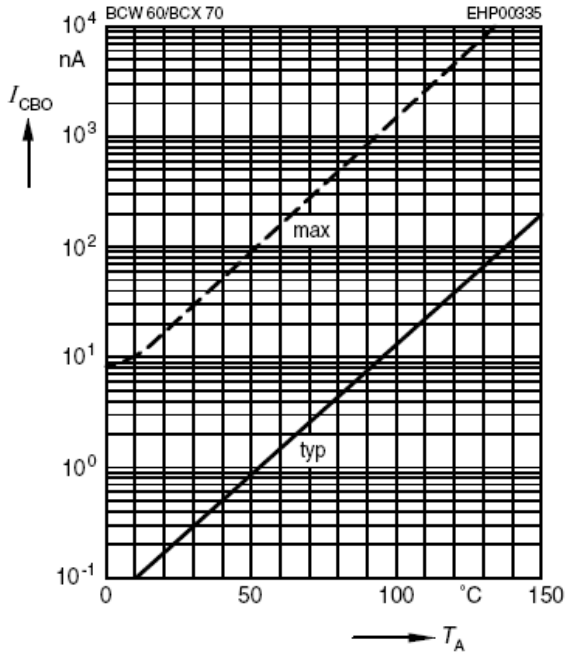
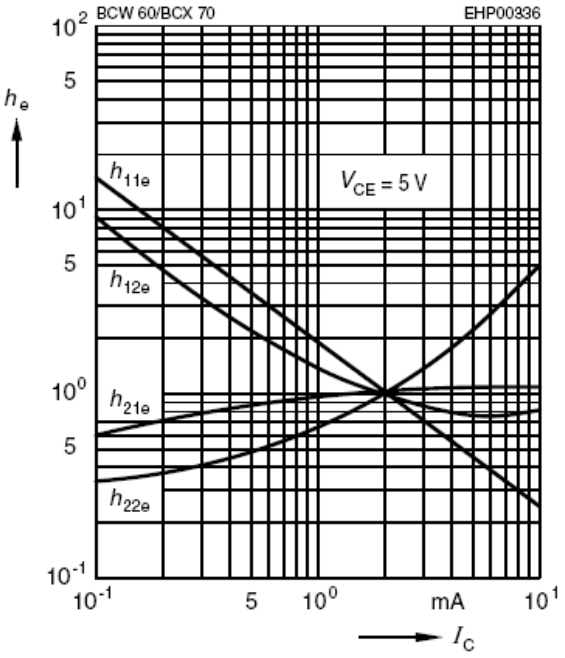
Collector cutoff current $I_{CBO} = f(T_A)$

$V_{CB} = V_{CEmax}$



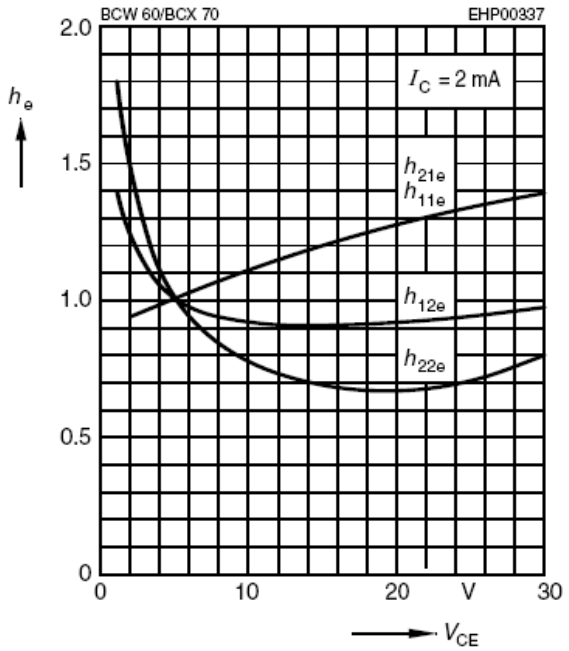
h parameter $h_e = f(I_C)$ normalized

$V_{CE} = 5V$



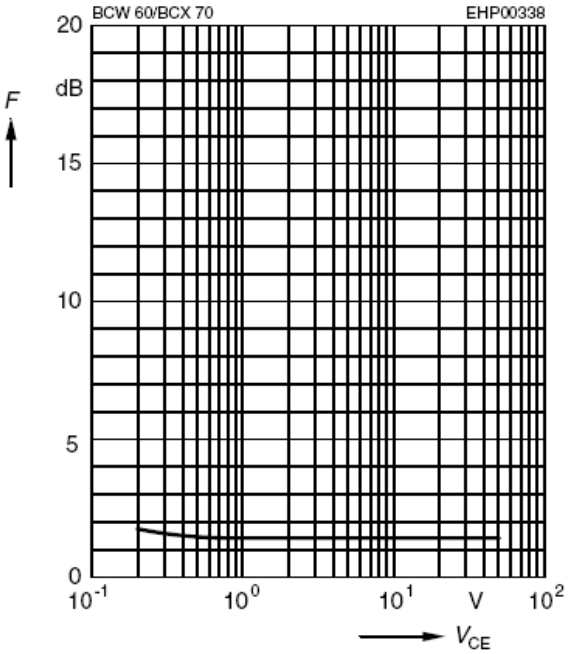
h parameter $h_e = f(V_{CE})$ normalized

$I_C = 2mA$



Noise figure $F = f(V_{CE})$

$I_C = 0.2mA$, $R_S = 2k\Omega$, $f = 1kHz$



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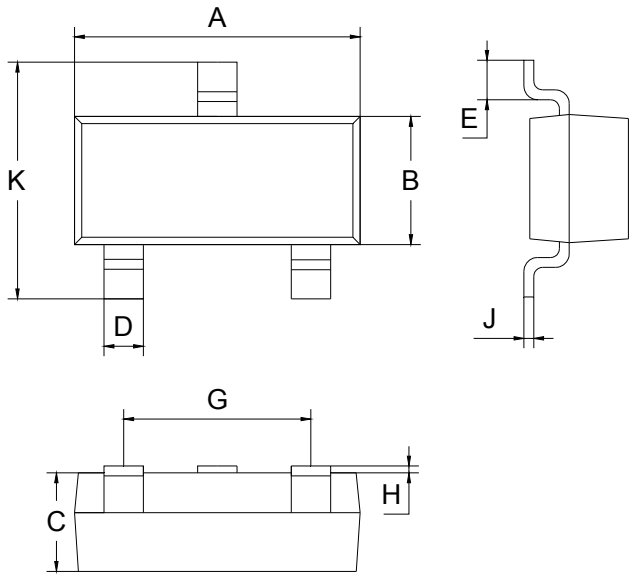
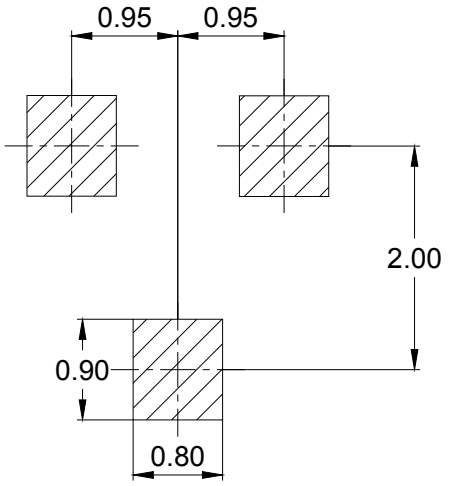
PACKAGE OUTLINE

Plastic surface mounted package SOT-23



SOT-23		
Dim	Min	Max
A	2.70	3.10
B	1.10	1.50
C	1.0 Typical	
D	0.4 Typical	
E	0.35	0.48
G	1.80	2.00
H	0.02	0.1
J	0.1 Typical	
K	2.20	2.60
All Dimensions in mm		

SOLDERING FOOTPRINT



Unit : mm

PACKAGE INFORMATION

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