

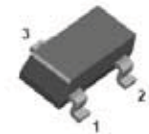
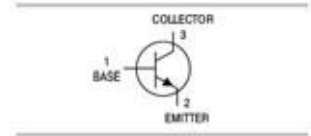
NPN General Purpose Amplifier: BCW60

Features:

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

Applications:

- General purpose medium power amplifier
- Switching application



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	mW
Junction and Storage Temperature	T_j, T_{stg}	-65 to +150	°C

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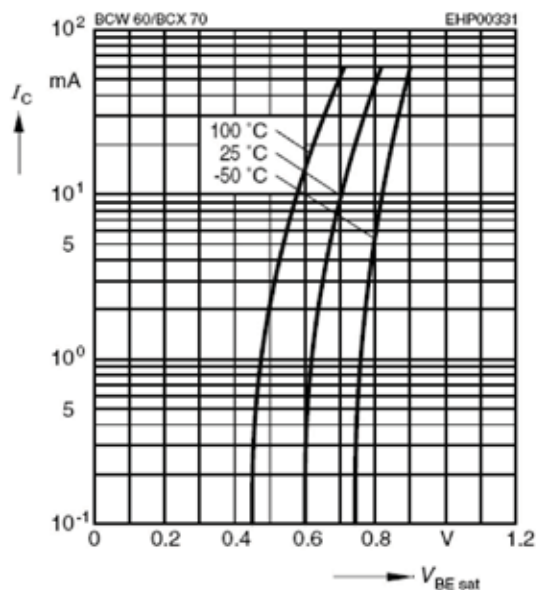
Parameter:	Symbol:	Test Conditions:	Min:	Typ:	Max:	Unit:
Collector - Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	32			V
Collector - Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=10mA, I_B=0$	32			V
Emmitter - Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=1\mu A, I_C=0$	5			V
Collector Cut-off 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}	$V_{CE}=5V, I_C=10\mu A$	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	$I_C=200\mu A, V_{CE}=5V,$ $R_s=2k\Omega, f=1kHz, B=200Hz$			6	dB

Typical Characteristics: $T_{amb}=25^{\circ}\text{C}$ unless otherwise specified

Ratings & Characteristic Curves

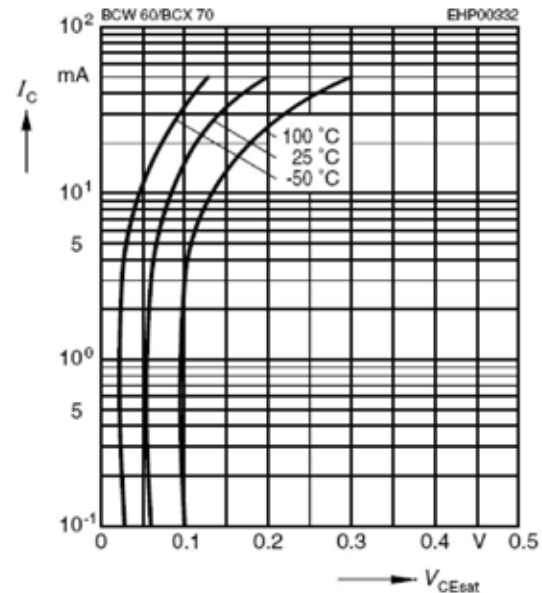
Base-emitter saturation voltage

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



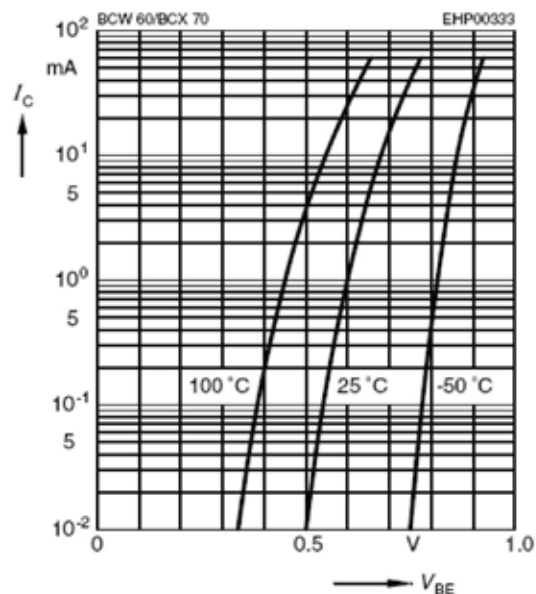
Collector-emitter saturation voltage

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



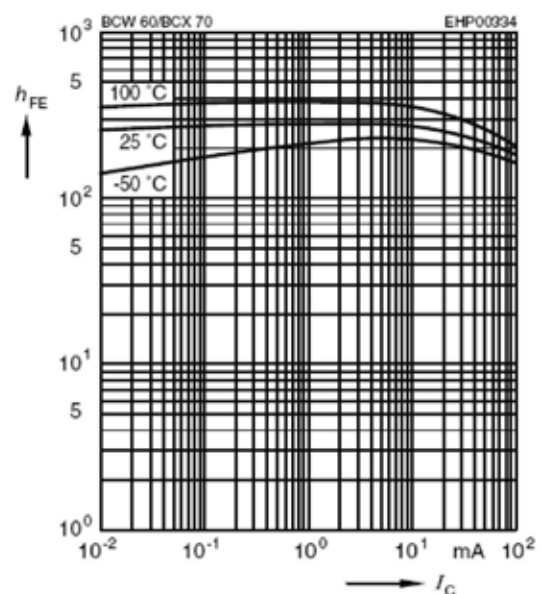
Collector current $I_C = f(V_{BE})$

$$V_{CE} = 5V$$



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

$$V_{CE} = 5V$$

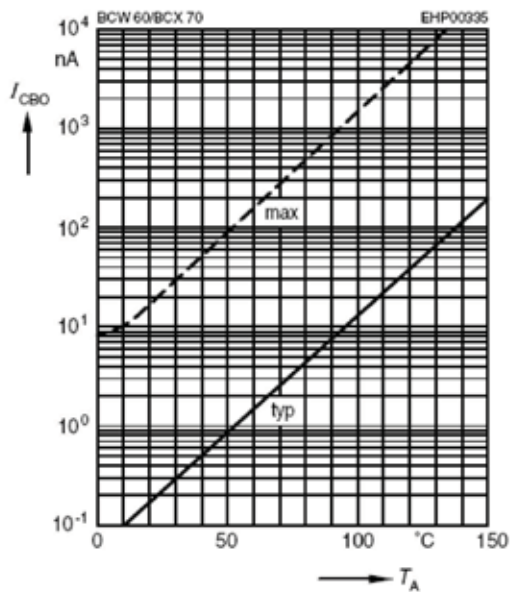


Typical Characteristics: $T_{amb}=25^{\circ}\text{C}$ unless otherwise specified

Ratings & Characteristic Curves

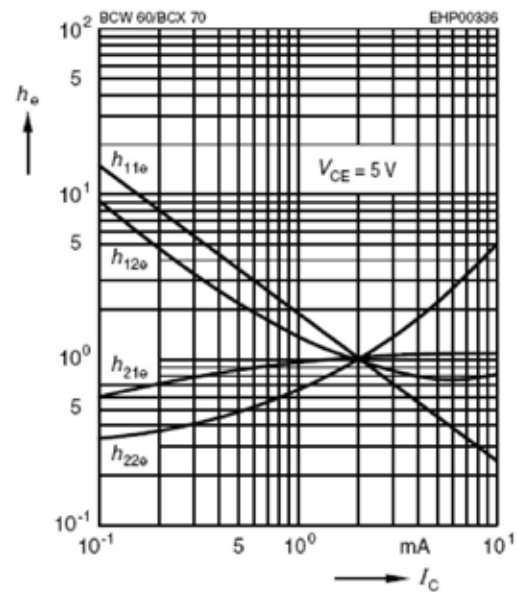
Collector cutoff current $I_{CBO} = f(T_A)$

$V_{CB} = V_{CEmax}$



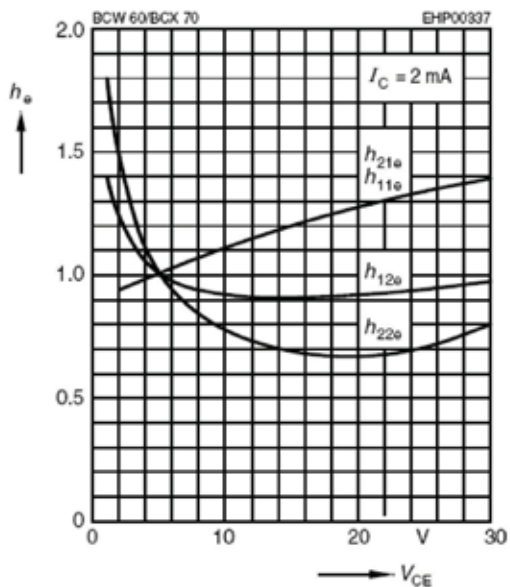
h parameter $h_e = f(I_C)$ normalized

$V_{CE} = 5\text{V}$



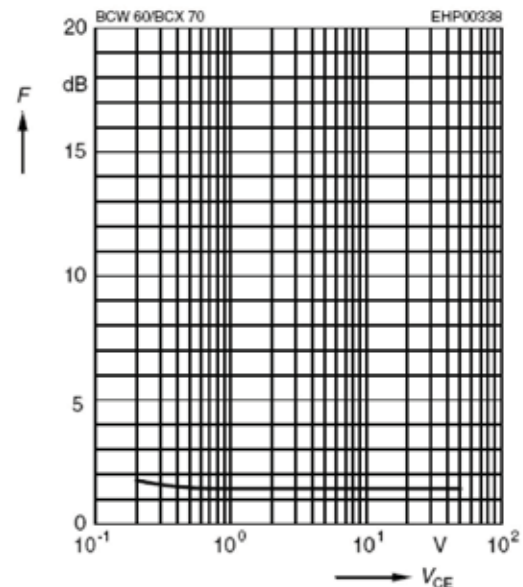
h parameter $h_e = f(V_{CE})$ normalized

$I_C = 2\text{mA}$



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

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

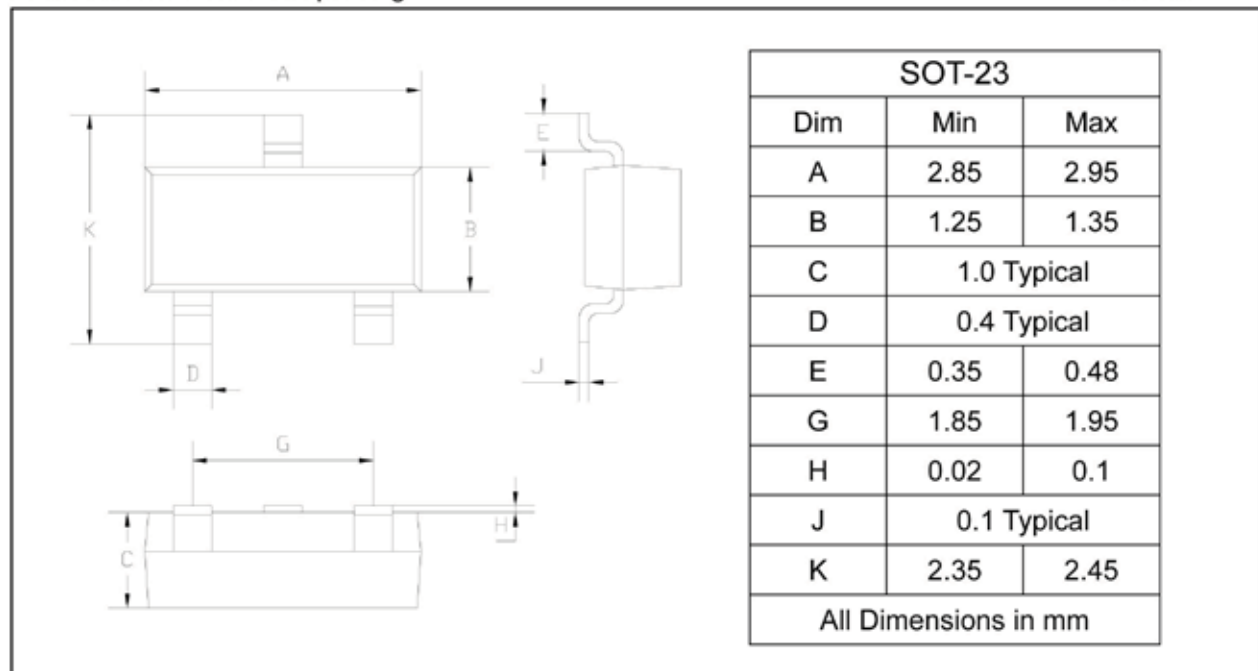


Package Outline

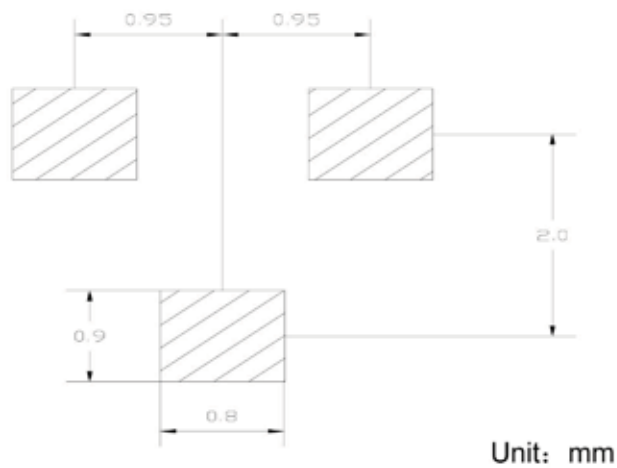
PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



SOLDERING FOOTPRINT



PACKAGE INFORMATION

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