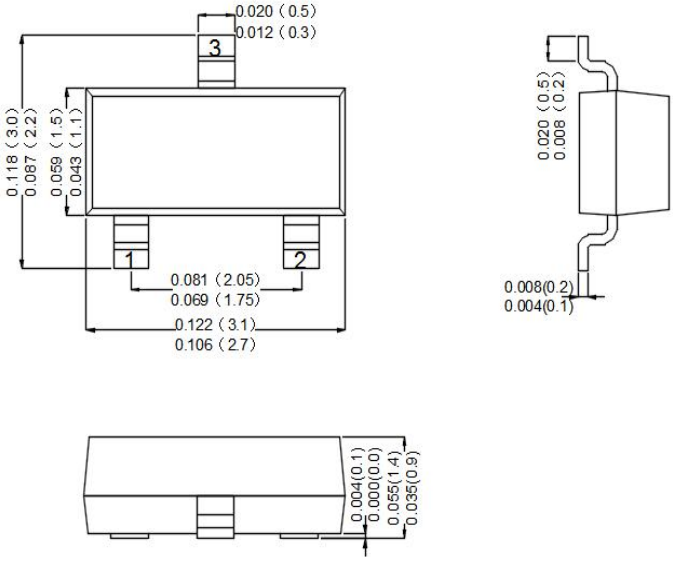
BCW60

NPN general purpose transistors

Features

SOT-23

- Low current (max. 100 mA)
- Low voltage (max. 32 V)
- complements:BCW61 series.



Dimensions in inches and (millimeters)

Mechanical Data

- Case:Molded Plastic,SOT-23
- Epoxy:UL 94V-0 rate flame retardant
- Terminals:Plated Leads Solderable perMIL-STD-750,Method-2026.
- Marking: BCW60B:AB ; BCW60C:AC ; BCW60D:AD
- Mounting Position : Any.
- Equivalent Circuit:

Maximum Ratings Maximum Ratings (Rating at 25℃ ambient temperature 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	I_C	100	mA
Peak Collector Current	I_{CM}	200	mA
Peak Base Current	I_{BM}	200	mA
Total Power Dissipation	P_{tot}	200	mW
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_S	-65 to +150	°C

Electrical Characteristics (Rating at 25℃ ambient temperature unless otherwise specified.)

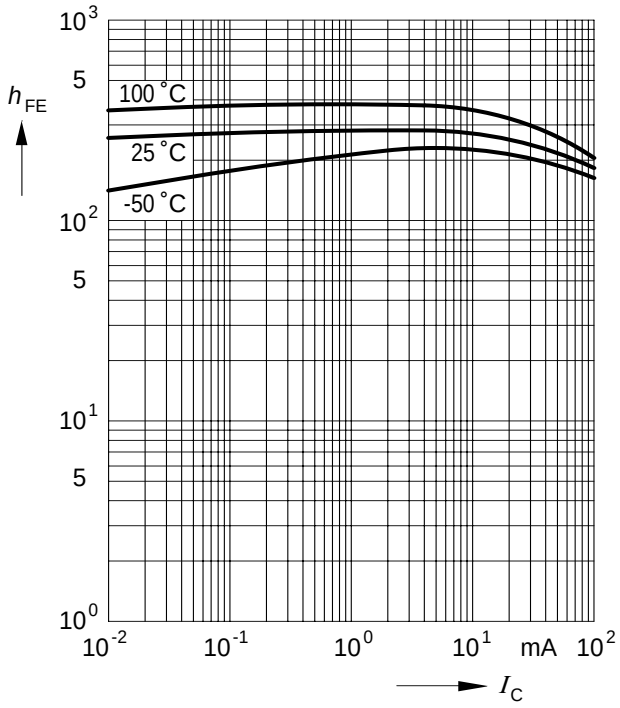
Parameter		Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at VCE = 5 V, IC = 10 μA	BCW60B	h_{FE}	20	-	-	-
	BCW60C		40	-	-	-
	BCW60D		100	-	-	-
DC Current Gain at V_{CE} = 5 V, I_C = 2 mA	BCW60B		180	-	310	-
	BCW60C		250	-	460	-
	BCW60D		380	-	630	-
DC Current Gain at V_{CE} = 1 V, I_C = 50 mA	BCW60B		70	-	-	-
	BCW60C		90	-	-	-
	BCW60D		100	-	-	-
Collector Saturation Voltage at I_C = 10 mA, I_B = 0.25 mA		V_{CEsat}	0.05	-	0.35	V
Collector Saturation Voltage at I_C = 50 mA, I_B = 1.25 mA		V_{CEsat}	0.1	-	0.55	V
Base Saturation Voltage at I_C = 10 mA, I_B = 0.25 mA		V_{BEsat}	0.6	-	0.85	V
Base Saturation Voltage at I_C = 50 mA, I_B = 1.25 mA		V_{BEsat}	0.7	-	1.05	V
Base-Emitter Voltage at I_C = 2 mA, V_{CE} = 5V		$V_{BE(on)}$	0.55	-	0.75	V
Collector Base Cutoff Current at V_{CB} = 32 V		I_{CBO}	-	-	20	nA
at V_{CB} = 32 V， T_j =150 °C			-	-	20	μA
Emitter-Base Cutoff Current at V_{EB} = 4 V		I_{EBO}	-	-	20	nA
Gain -Bandwidth Product at V_{CE} = 5 V, I_C = 10 mA, f = 100 MHz		f_T	100	250	-	MHz
Collector-Base Capacitance at V_{CB} = 10 V, f = 1 MHz		C_{CBO}	-	1.7	-	pF
Emitter-Base Capacitance at V_{EB} = 0.5 V, f = 1 MHz		C_{EBO}	-	11	-	pF
Noise figure at I_C = 200 μA, V_{CE} = 5 V, R_S = 2 KΩ, f =1 KHz, Δf=200Hz		NF	-	2	6	dB
Thermal Resistance, Junction to Ambient		$R_{\theta JA}$	-	-	500 [1)]	K/W

[1)] Transistor mounted on an FR4 printed-circuit board.

Rating And Characteristic Curves

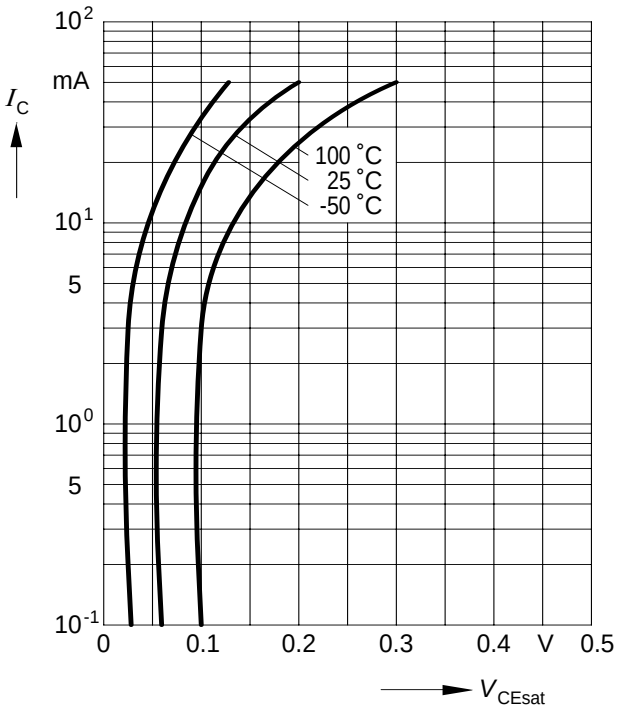
DC current gain $h_{FE} = f(I_C)$

V_{CE} = 5 V



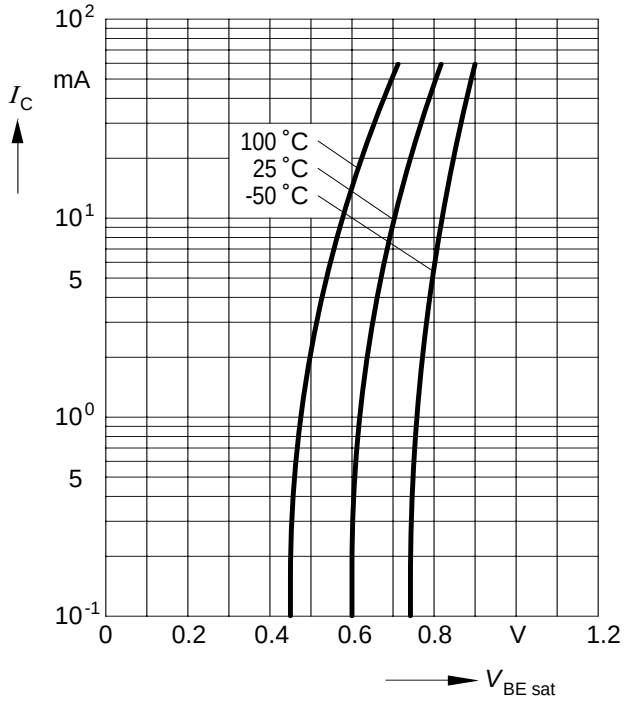
Collector-emitter saturation voltage

$I_C = f(V_{CEsat})$, h_{FE} = 10



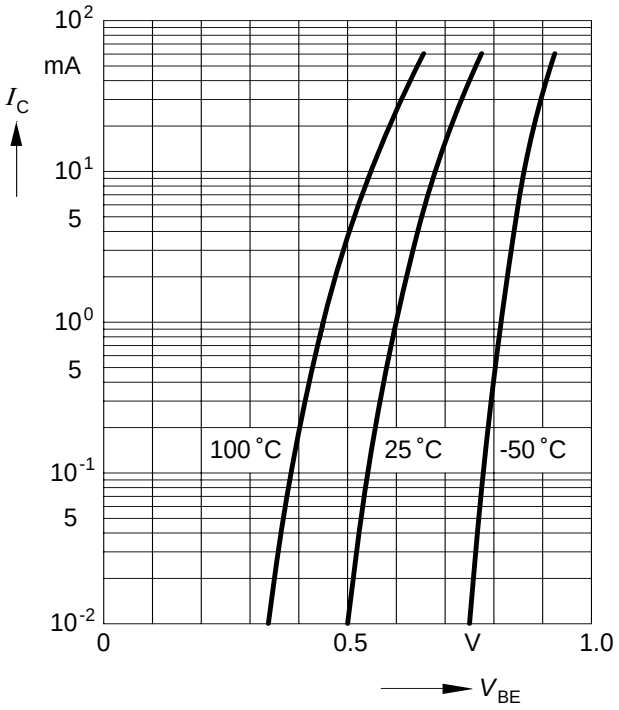
Base-emitter saturation voltage

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



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

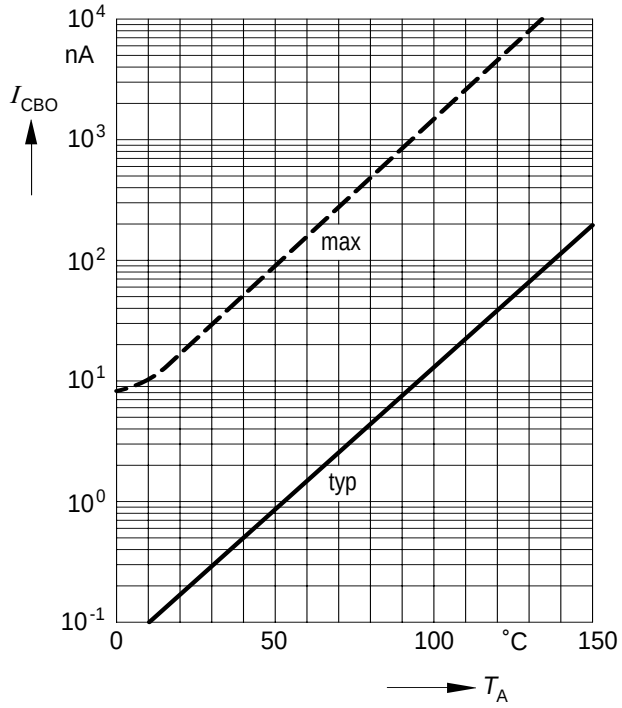
V_{CE} = 5V



Rating And Characteristic Curves

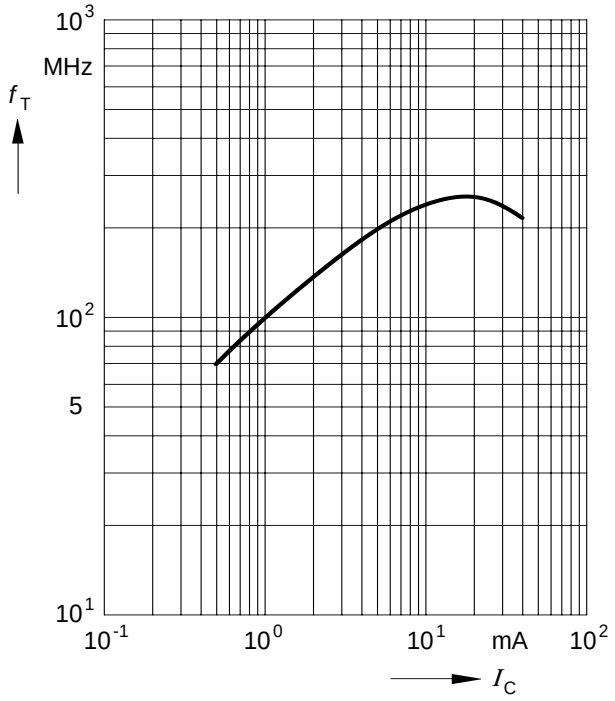
Collector cutoff current $I_{CBO} = f(T_A)$

$V_{CB} = V_{CEmax}$



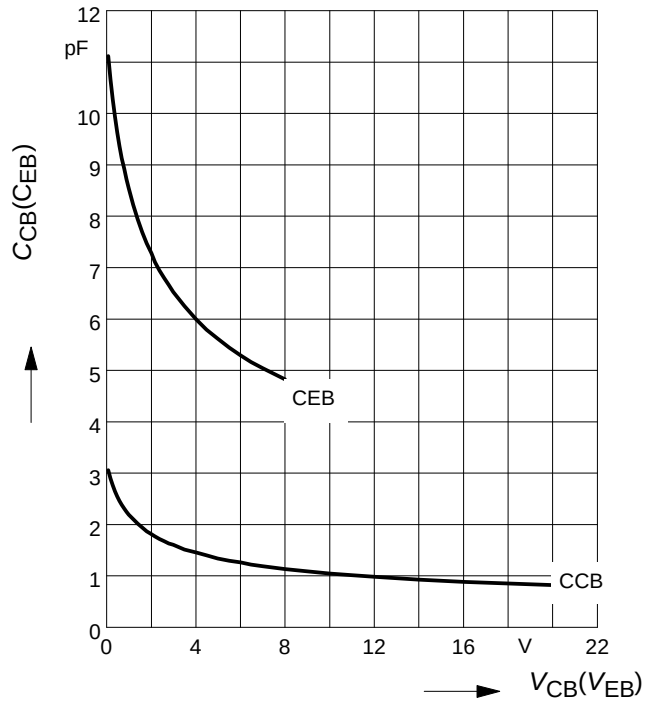
Transition frequency $f_T = f(I_C)$

V_{CE} = parameter in V, f = 2 GHz

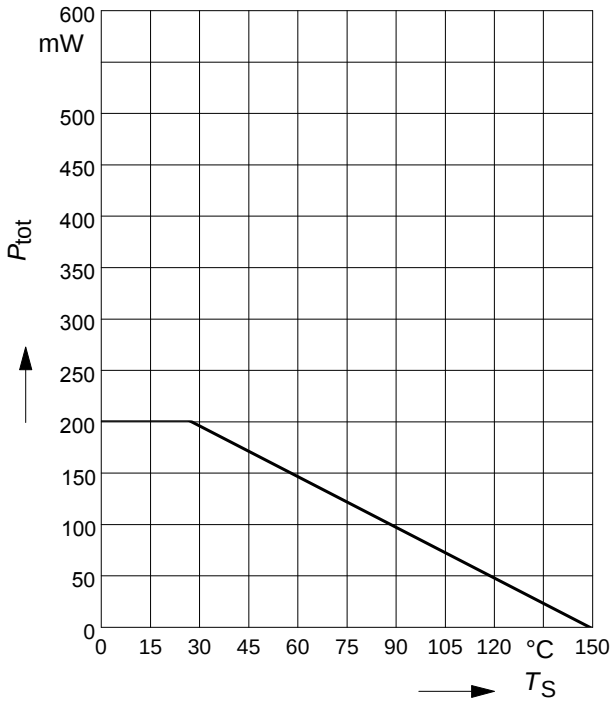


Collector-base capacitance $C_{cb} = f(V_{CB})$

Emitter-base capacitance $C_{eb} = f(V_{EB})$



Total power dissipation $P_{tot} = f(T_S)$



Important Notice and Disclaimer

- Reproducing and modifying information of the document is prohibited without from XINNUO.
- XINNUO reserves the right to make changes to this document and its products and specifications.
- XINNUO disclaims any and all liability arising out of the application or use of any product including damages incidentally and consequentially occurred.
- XINNUO does not assume any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.
- Applications shown on the here in document are examples of standard use and operation. Customers are responsible in comprehending the suitable use in particular applications.XINNUO makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.
- The products shown her are not designed and authorized for equipments requiring high level of reliability or relating to human life and for any applications concerning life-saving or life-sustaining, such as medical instruments, transportation equipment, aerospace machinery et cetera. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify XINNUO for any damages resulting from such improper use or sale.
- Since XINNUO uses lot number as the tracking base, please provide the lot number for tracking when complaining.