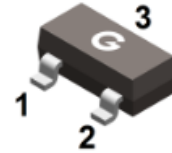
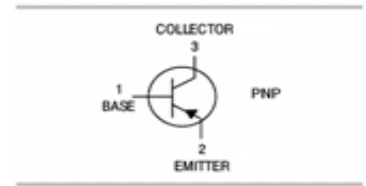


Features

- Complimentary to TBCW66
- High collector current
- High current gain
- Low collector-emitter saturation voltage
- Halogen free
- Qualified to AEC-Q101 standards for high reliability

HF



SOT-23

Mechanical Data

- Case: SOT-23
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
TBCW68F	SOT-23	3000 pcs / Tape & Reel	DF
TBCW68G	SOT-23	3000 pcs / Tape & Reel	DG
TBCW68H	SOT-23	3000 pcs / Tape & Reel	DH

Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Collector-Base Breakdown Voltage	V _{CBO}	-60	V
Collector-Emitter Breakdown Voltage	V _{CEO}	-45	V
Emitter-Base Breakdown Voltage	V _{EBO}	-5	V
Continuous Collector Current	I _C	-0.8	A
Peak Collector Current	I _{CM}	-1	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation	P _D	330	mW
Thermal Resistance Junction-to-Air ^{*1}	R _{θJA}	395	°C/W
Thermal Resistance Junction-to-Case ^{*1}	R _{θJC}	218	°C/W
Thermal Resistance Junction-to-Lead ^{*1}	R _{θJL}	191	°C/W
Operating junction Temperature	T _J	-55 ~ +150	°C
Storage Temperature Range	T _{STG}	-55 ~ +150	°C

Note 1: The data tested by surface mounted on a 15mm * 15mm * 1mm FR4-epoxy P.C.B

Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter		Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage		$V_{(BR)CBO}$	$I_C = -10\mu\text{A}, I_E = 0$	-60	-	-	V
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	$I_C = -10\text{mA}, I_B = 0$	-45	-	-	V
Emitter-Base Breakdown Voltage		$V_{(BR)EBO}$	$I_E = -10\mu\text{A}, I_C = 0$	-5	-	-	V
Collector Cut-off Current		I_{CBO}	$V_{CB} = -45\text{V}, I_E = 0$	-	-	-20	nA
Emitter Cut-off Current		I_{EBO}	$V_{EB} = -4\text{V}, I_C = 0$	-	-	-20	nA
DC Current Gain	TBCW68F	h_{FE}	$V_{CE} = -10\text{V}, I_C = -0.1\text{mA}$	35	-	-	-
	TBCW68G			50	-	-	-
	TBCW68H			80	-	-	-
	TBCW68F		$V_{CE} = -1\text{V}, I_C = -10\text{mA}$	75	-	-	-
	TBCW68G			120	-	-	-
	TBCW68H			180	-	-	-
	TBCW68F		$V_{CE} = -1\text{V}, I_C = -100\text{mA}$	100	-	250	-
	TBCW68G			160	-	400	-
	TBCW68H			250	-	630	-
	TBCW68F		$V_{CE} = -2\text{V}, I_C = -500\text{mA}$	35			
	TBCW68G			60			
	TBCW68H			100			
Collector-emitter Saturation Voltage		$V_{CE(sat)}$	$I_C = -100\text{mA}, I_B = -10\text{mA}$	-	-	-0.3	V
			$I_C = -500\text{mA}, I_B = -50\text{mA}$	-	-	-0.7	V
Base-emitter Saturation Voltage		$V_{BE(sat)}$	$I_C = -100\text{mA}, I_B = -10\text{mA}$	-	-	-1.25	V
			$I_C = -500\text{mA}, I_B = -50\text{mA}$	-	-	-2	V
Transition Frequency		f_T	$I_C = -50\text{mA}, V_{CE} = -5\text{V}$ $f = 20\text{MHz}$	-	200	-	MHz

Ratings and Characteristics Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

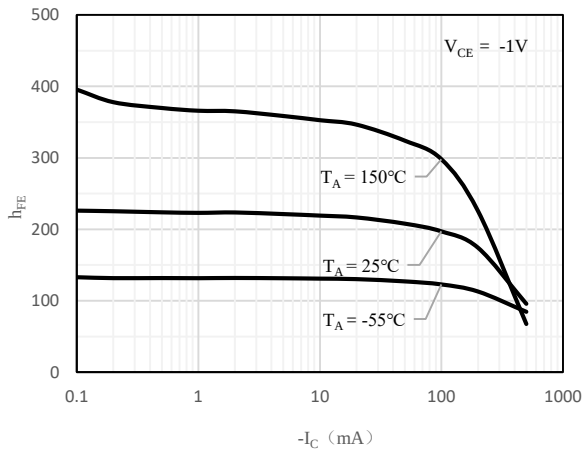


Fig 1 h_{FE} vs. I_C (TBCW68F)

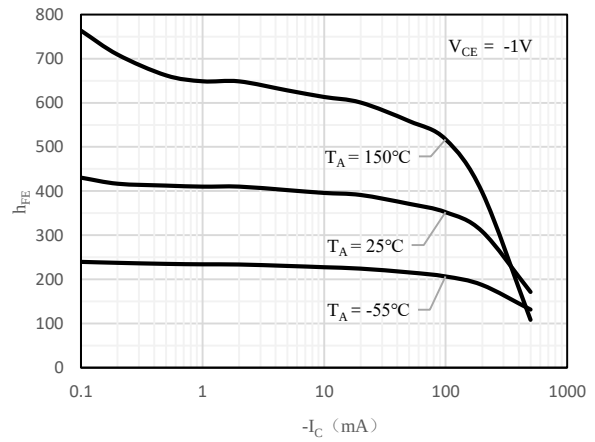


Fig 2 h_{FE} vs. I_C (TBCW68G)

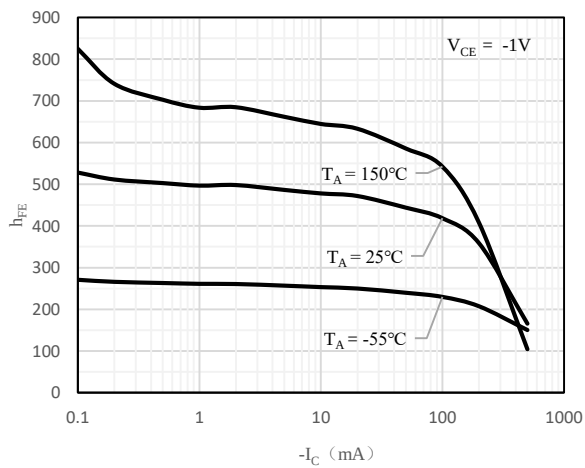


Fig 3 h_{FE} vs. I_C (TBCW68H)

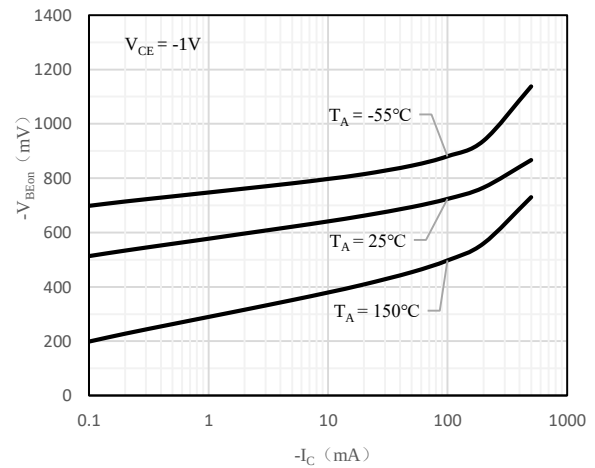


Fig 4 $V_{BE(ON)}$ vs. I_C

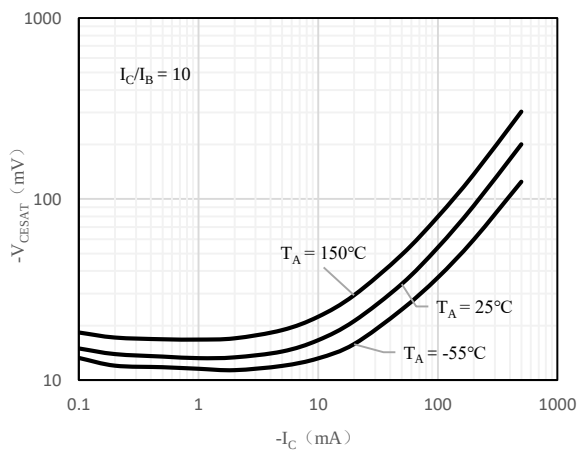


Fig 2 $V_{CE(sat)}$ vs. I_C

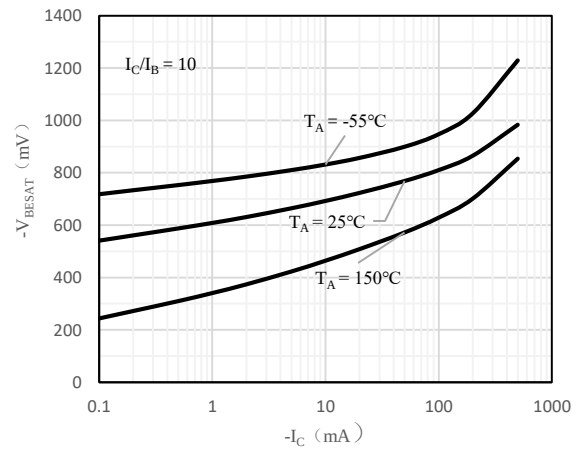
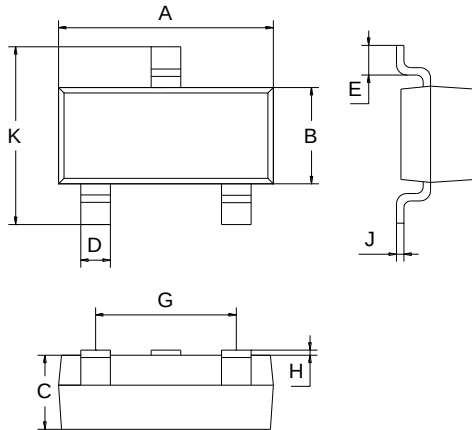


Fig 3 $V_{BE(sat)}$ vs. I_C

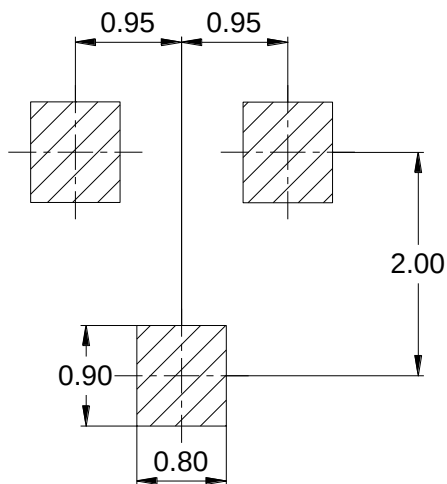
Package Outline Dimensions (Unit: mm)



SOT-23		
Dimension	Min.	Max.
A	2.70	3.10
B	1.10	1.50
C	0.9	1.1
D	0.3	0.5
E	0.35	0.48
G	1.80	2.00
H	0.02	0.1
J	0.05	0.15
K	2.20	2.60

Package Outline Dimensions (Unit: mm)

SOT-23



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