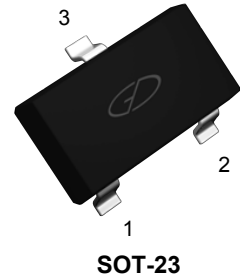


Features

- Complementary to GSBCW68x
- GSBCW66x is subdivided into three groups F,G and H according to DC current gain



1. BASE
2. EMITTER
3. COLLECTOR

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

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V _{CB0}	75	V
Collector-Emitter Voltage	V _{CEO}	45	V
Emitter-Base Voltage	V _{EBO}	5	V
Collector Current-Continuous	I _C	800	mA
Collector Power Dissipation	P _C	200	mW
Typical Thermal Resistance from Junction to Ambient	R _{θJA}	625	°C/W
Operating Junction Temperature Range	T _J	-55 To +150	°C
Storage Temperature Range	T _{STG}	-55 To +150	°C

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

Parameter	Symbol	Conditions	Min.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu\text{A}, I_E=0$	75	-	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}	$V_{CB}=45\text{V}, I_E=0$	-	0.02	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB}=4\text{V}, I_C=0$	-	0.02	μA
DC Current Gain	GSBCW66-F	h_{FE1} $V_{CE}=10\text{V}, I_C=0.1\text{mA}$	35	-	-
	GSBCW66-G		50	-	
	GSBCW66-H		80	-	
	GSBCW66-F	h_{FE2} $V_{CE}=1\text{V}, I_C=10\text{mA}$	75	-	
	GSBCW66-G		110	-	
	GSBCW66-H		180	-	
	GSBCW66-F	h_{FE3} $V_{CE}=1\text{V}, I_C=100\text{mA}$	100	250	
	GSBCW66-G		160	400	
	GSBCW66-H		250	630	
	GSBCW66-F	h_{FE4} $V_{CE}=2\text{V}, I_C=500\text{mA}$	35	-	
	GSBCW66-G		60	-	
	GSBCW66-H		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	
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=500\text{mA}, I_B=50\text{mA}$	-	2	V
Transition Frequency	f_T	$V_{CE}=10\text{V}, I_C=20\text{mA}, F=100\text{MHz}$	100	-	MHz
Output Capacitance	C_{ob}	$V_{CB}=10\text{V}, I_E=0, F=1\text{MHz}$	-	12	pF
Input Capacitance	C_{ib}	$V_{EB}=0.5\text{V}, I_E=0, F=1\text{MHz}$	-	80	pF
Noise Figure	NF	$V_{CE}=5\text{V}, I_C=0.2\text{mA}, F=1\text{KHz}, R_S=1\text{K}\Omega, BW=200\text{Hz}$	-	10	dB

Classification of h_{FE}

Rank	F	G	H
Range	100-250	160-400	250-630

Typical Electrical Characteristic Curves

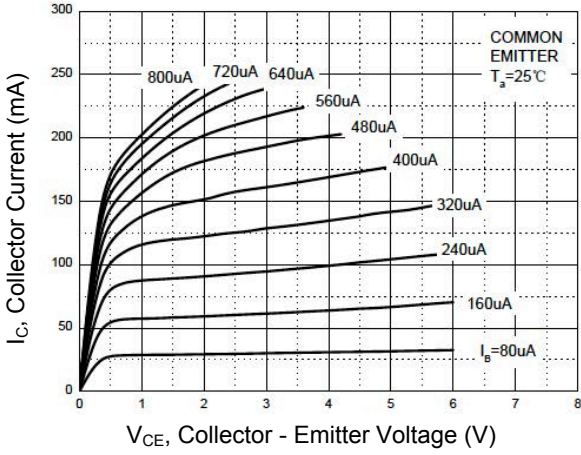


Figure 1. Static Characteristics

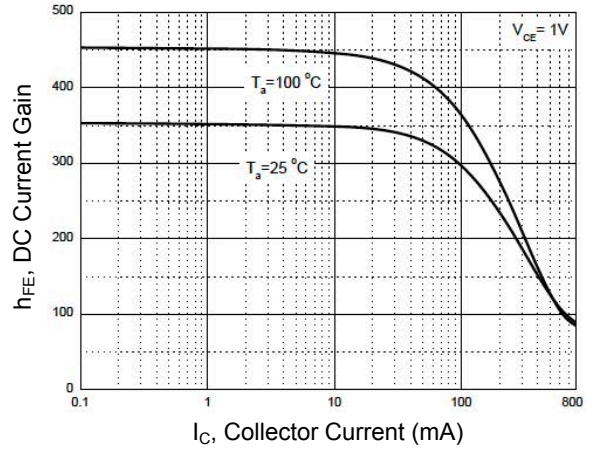


Figure 2. DC Current Gain vs. Collector Current

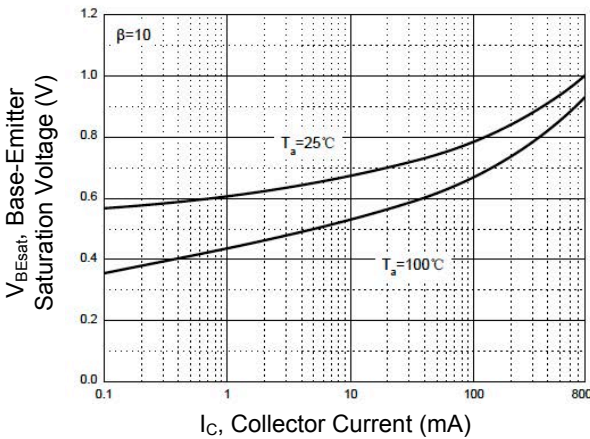


Figure 3. Base - Emmitter Saturation Voltage vs. Collector Current

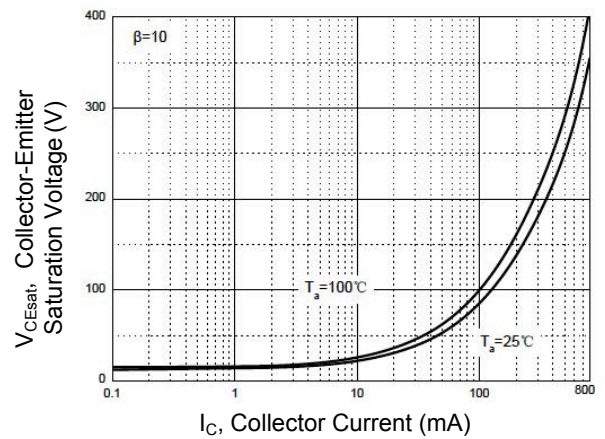


Figure 4. Collector - Emmitter Saturation Voltage vs. Collector Current

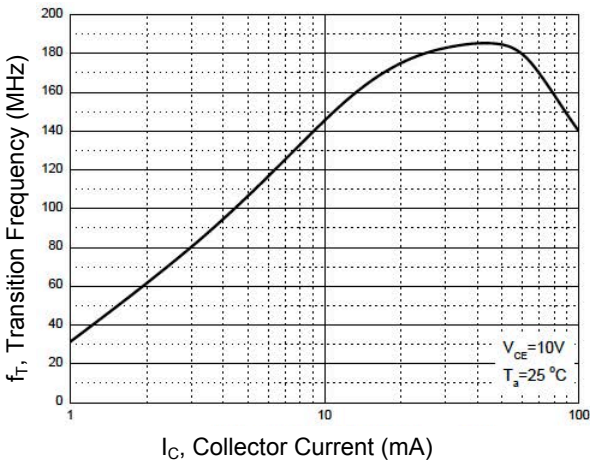


Figure 5. Transition Frequency vs. Collector Current

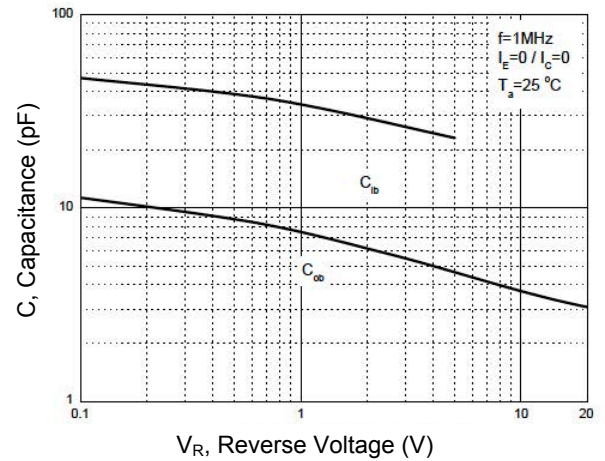


Figure 6. Capacitance Characteristics

Typical Electrical Characteristic Curves

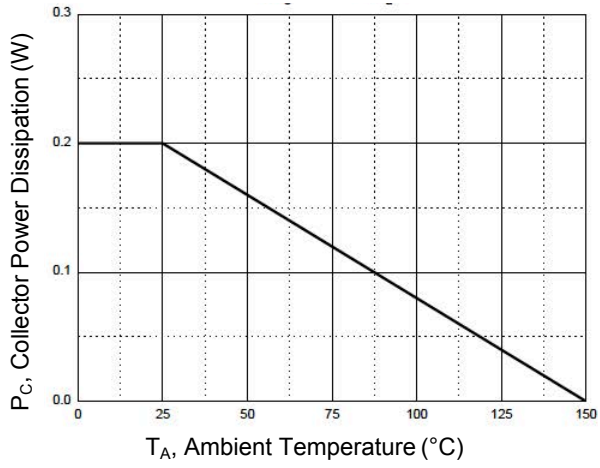
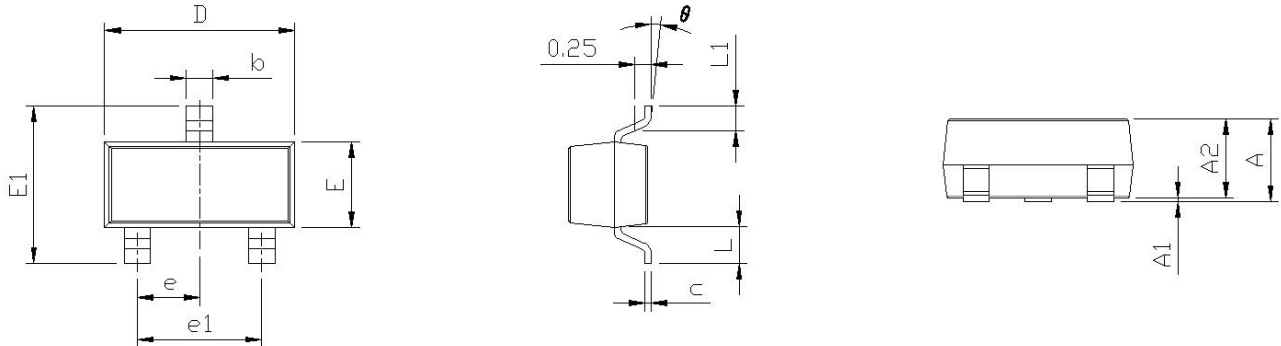


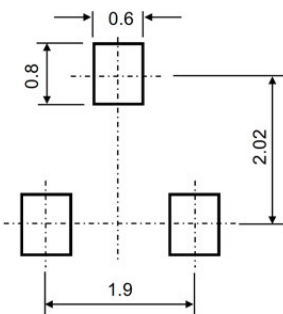
Figure 7. Power Dissipation vs Ambient Temperature

Package Outline Dimensions (SOT-23)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

Recommended Pad Layout



Note:

1. Controlling dimension: in millimeters
2. General tolerance: $\pm 0.05\text{mm}$
3. The pad layout is for reference purposes only

Order Information

Device	Package	Marking	Quantity	HSF Status
GSBCW66-F	SOT-23	EF	3,000pcs / Reel	RoHS Compliant
GSBCW66-G	SOT-23	EG	3,000pcs / Reel	RoHS Compliant
GSBCW66-H	SOT-23	EH	3,000pcs / Reel	RoHS Compliant