GSTMMBT2907AF

PNP General Purpose Transistor

Product Description

Collector-Emitter Voltage -60V
Collector Current -600mA

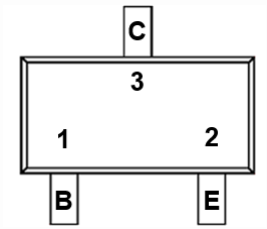
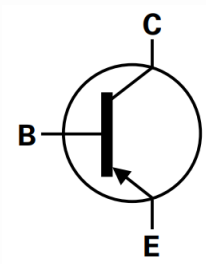
Features

- Ideal for Low-Power Amplification and Switching
- RoHS Compliant and Halogen Free

Mechanical Data

- Case : SOT-23 Package
- Epoxy meets UL 94 V-0 Flammability Rating

Package and Pin Assignment

SOT-23	Equivalent Circuit
	

Pin	Description
1	BASE
2	EMITTER
3	COLLECTOR

Ordering and Marking Information

Ordering Information

Part Number	Package	Marking Code	Quantity/Reel
GSTMMBT2907AF	SOT-23	2F	3,000 PCS

GSTMMBT2907AF

- **Product Code:** GSTMMBT2907A
- **Green Level:** **F** for RoHS Compliant and Halogen Free

Marking Information

2F

- **Product Code:** 2F

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

Symbol	Parameter	Rating	Unit
V_{CBO}	Collector-Base Voltage	-60	V
V_{CEO}	Collector-Emitter Voltage	-60	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current	-600	mA
P_C	Collector Power Dissipation	250	mW
$R_{\Theta JA}$	Thermal Resistance From Junction To Ambient	500	℃/W
T_J	Junction Temperature	150	℃
T_{STG}	Storage Temperature	-55～+150	℃

Electrical Characteristics (T_A=25°C unless otherwise specified)

Symbol	Description	Conditions	Min	Max	Unit
V_{CEO}	Collector-Emitter Breakdown Voltage	I_C=-10mA, I_B=0	-60		V
V_{CBO}	Collector-Base Breakdown Voltage	I_C =-10μA, I_E=0	-60		V
V_{EBO}	Emitter-Base Breakdown Voltage	I_E=-10μA, I_C =0	-5.0		V
I_{CBO}	Collector Cutoff Current	V_{CB}=-50V, I_E =0V		-100	nA
I_{CEX}	Collector Cutoff Current	V_{CE}=-30V, V_{BE}=-0.5V		-50	nA
I_{BL}	Base Cutoff Current	V_{CE}=-30V, V_{BE} E=-0.5V		-50	nA
h_{FE}	DC Current Gain	I_C =-0.1mA, V_{CE}=-10V	75		
		I_C =-1.0mA, V_{CE} =-10V	100		
		I_C =-10mA, V_{CE} =-10V	100		
		I_C =-150mA, V_{CE} =-10V	100	300	
		I_C =-500mA, V_{CE} =-10V	50		
$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage	I_C =-150mA, I_B=-15mA		-0.4	V
		I_C =-500mA, I_B =-50mA		-1.6	V
$V_{BE(SAT)}$	Base-Emitter Saturation Voltage	I_C =-150mA, I_B =-15mA		-1.3	V
		I_C =-500mA, I_B =-50mA		-2.6	V
f_T	Current Gain-Bandwidth Product	I_C=-50mA, V_{CE}=-20V,f=100MHz	200		MHZ

Electrical Characteristics (T_A=25°C unless otherwise specified)

Symbol	Description	Conditions	Min	Max	Unit
Switching Characteristic					
t_d	Delay Time	V_{CE} =-30V,I_C=-50mA, I_{B1}=-15mA		10	ns
t_r	Rise Time			40	ns
t_s	Storage Time	V_{CE} =-6.0V,I_C=-150mA I_{B1}=-I_{B2}=-15mA		80	ns
t_f	Fall Time			30	ns

Typical Characteristics

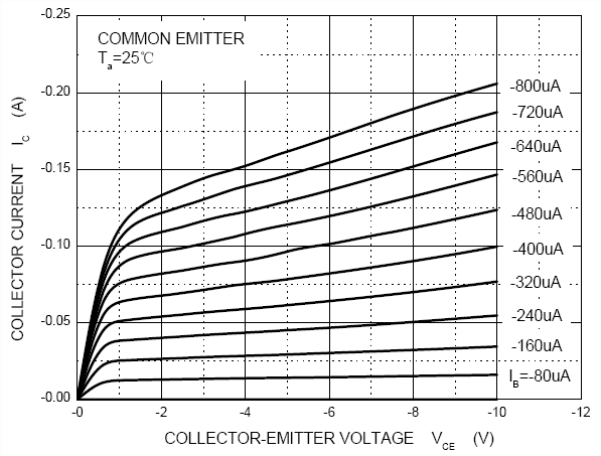


Figure 1. Static Characteristic

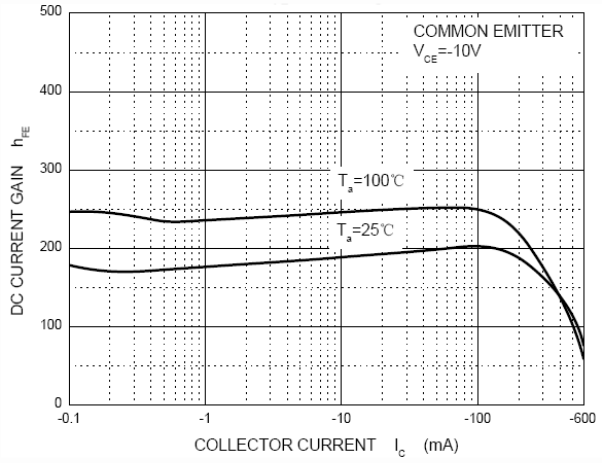


Figure 2. h_{FE}---I_C

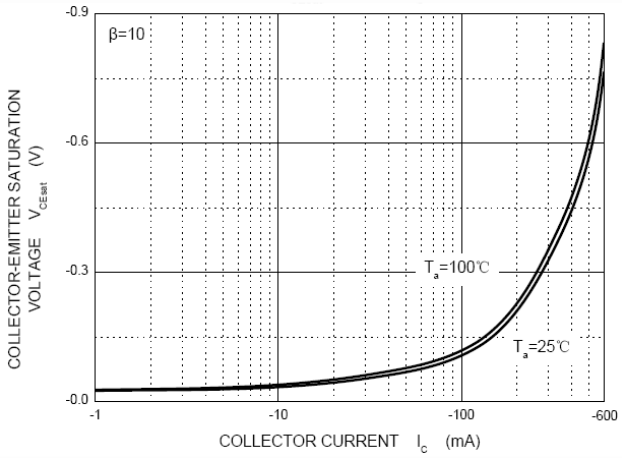


Figure 3. V_{CESAT}---I_C

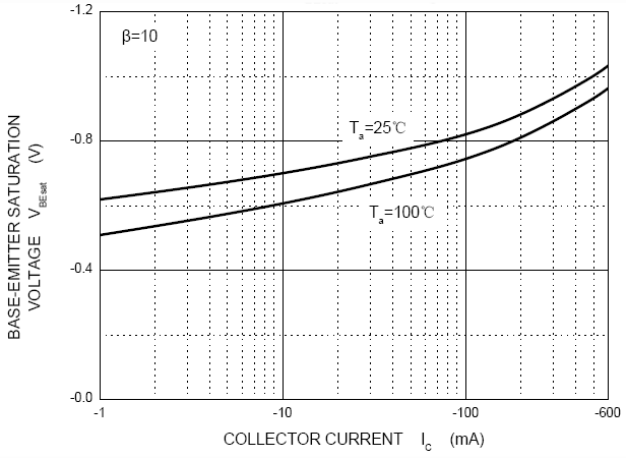


Figure 4. V_{BESAT}---I_C

Typical Characteristics (Continue)

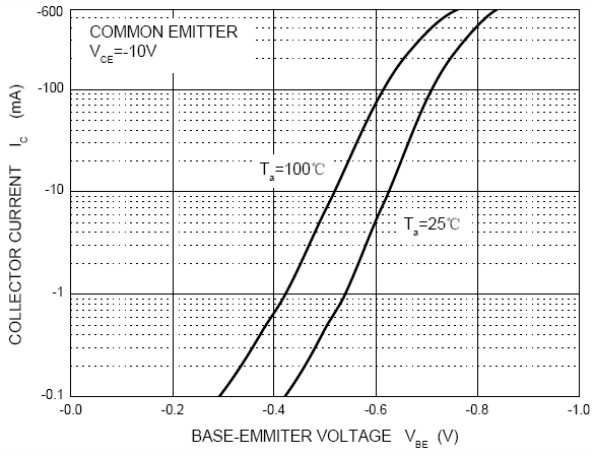


Figure 5. I_C---V_{BE}

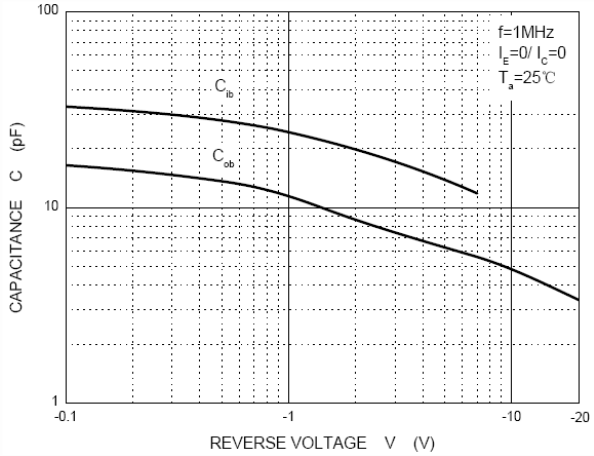


Figure 6. C_{ob}/C_{ib}---V_{CB}/ V_{BE}

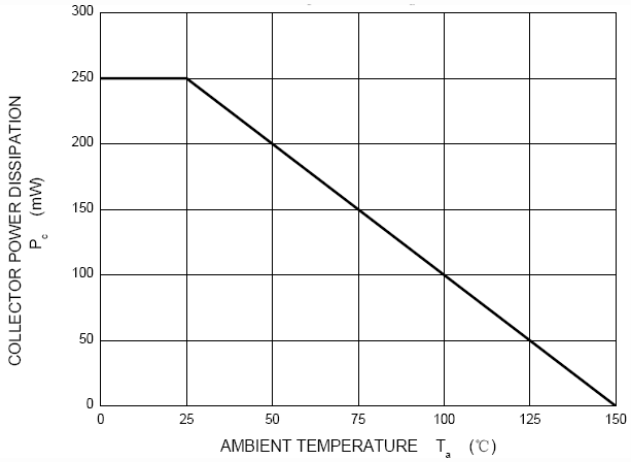
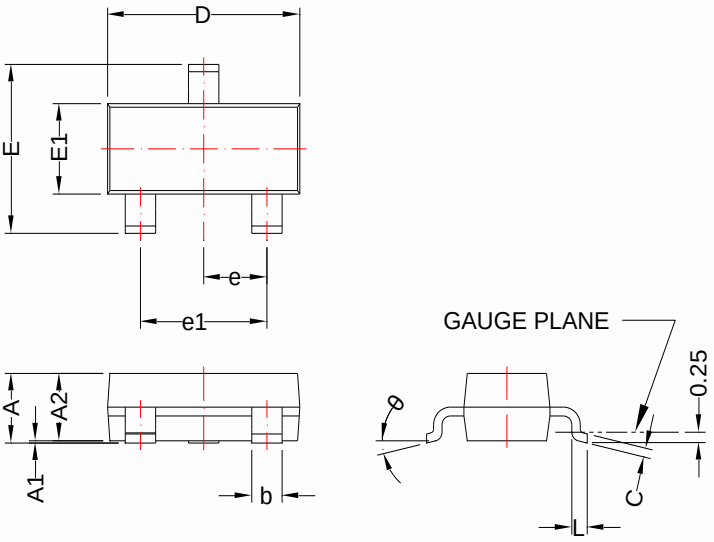


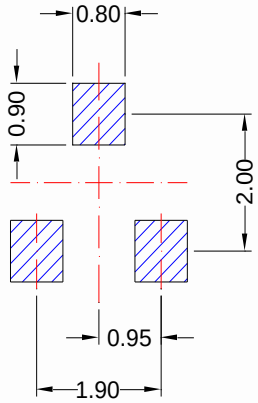
Figure 7. P_{CE}---T_A

SOT-23

Package Dimension



Recommended Land Pattern



(Unit: mm)

Dimensions

SYMBOL	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	0.75	1.17	0.030	0.046
A1	0.01	0.15	0.000	0.006
A2	0.70	1.02	0.028	0.040
b	0.30	0.50	0.012	0.020
c	0.08	0.20	0.003	0.008
D	2.80	3.04	0.110	0.120
E	2.10	2.64	0.083	0.104
E1	1.20	1.40	0.047	0.055
e	0.95 BSC		0.037 BSC	
e1	1.90 BSC		0.075 BSC	
L	0.3	0.6	0.012	0.024
θ	0°	8°	0°	8°

NOTE:
Dimensions are exclusive of Burrs, Mold Flash and Tie Bar extrusions.

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