GSTMMBT5551F

NPN General Purpose Transistor

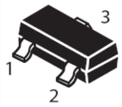
Product Description

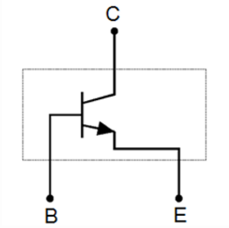
This device is designed as a general purpose amplifier and switch.

Features

- Epoxy Meets UL 94 V-0 Flammability Rating
- RoHS compliant

Packages & Pin Assignments

SOT-23	
	
Pin	**Description**
1	Base
2	Emitter
3	Collector



Ordering and Marking Information

Part Number	Package	h_{FE} Range	Marking	Quantity
GSTMMBT5551F	SOT-23	⋆100-300	G1	3000 PCS

⋆ I_C=10mA,V_{CE}=5.0V

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

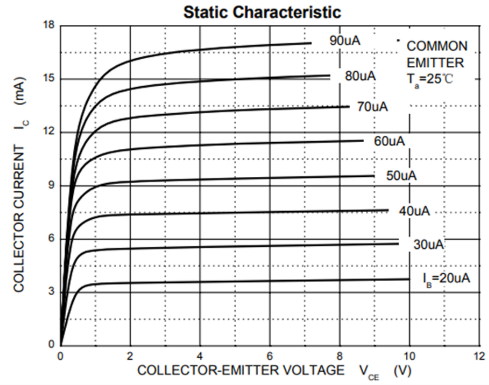
Symbol	Parameter	Rating	Unit
V_{CEO}	Collector-Emitter Voltage	160	V
V_{CBO}	Collector-Base Voltage	180	V
V_{EBO}	Emitter-Base Voltage	6.0	V
$I_{C(DC)}$	Collector Current (DC)	600	mA
P_D	Power Dissipation T_A=25°C✶	300	mW
$R_{\Theta JA}$	Thermal Resistance, Junction to Ambient	416	°C/W
T_J	Junction Temperature Range	150	°C
T_{STG}	Storage Temperature Range	-55 to +150	°C

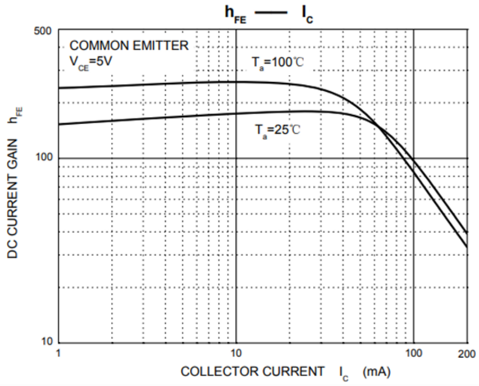
✶ Device mounted on an FR4 PCB, single-sided copper, tin-plated and standard footprint.

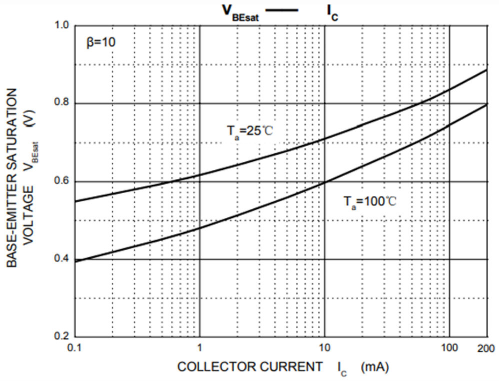
Electrical Characteristics (T_A=25°C unless otherwise specified)

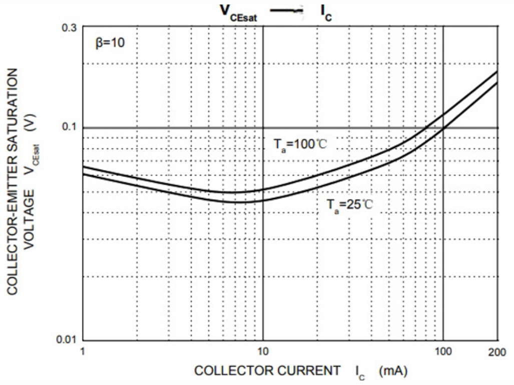
Symbol	Description	Conditions	Min	Max	Unit
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	I_C=1mA, I_B=0mA	160	-	V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	I_C=0.1mA, I_E=0mA	180	-	V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_E=0.01mA, I_C=0mA	6.0	-	V
I_{CBO}	Collector Cutoff Current	V_{CB}=120V, I_E=0mA	-	50	nA
I_{EBO}	Emitter Cutoff Current	V_{EB}=4V, I_C=0mA	-	50	nA
h_{FE}	DC Current Gain	I_C=1mA, V_{CE}=5.0V	80	-	-
		I_C=10mA, V_{CE}=5.0V	100	300	-
		I_C=50mA, V_{CE}=5.0V	50	-	-
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C=10mA, I_B=1mA	-	0.15	V
		I_C=50mA, I_B=5mA	-	0.20	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C=10mA, I_B=1mA	-	1.00	V
		I_C=50mA, I_B=5mA	-	1.00	V
f_T	Current Gain - Bandwidth Product	V_{CE}=10V, I_C=10mA, f=100MHz	100	300	MHz
Cobo	Output Capacitance	V_{CB}=10.0V, I_E=0, f=1.0MHz	-	6.0	pF

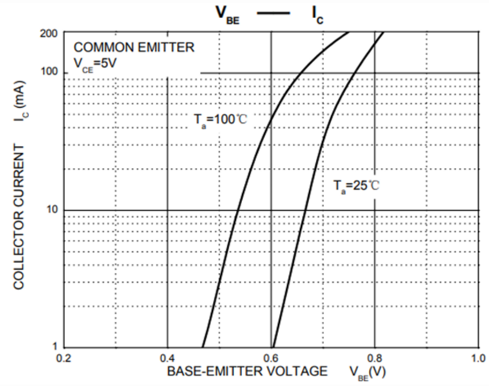
Typical Performance Characteristics (T_A=25°C unless otherwise specified)

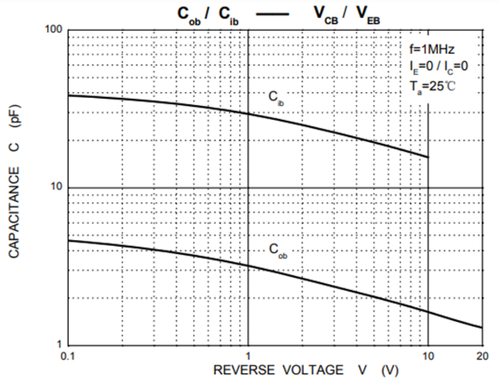

Static Characteristic

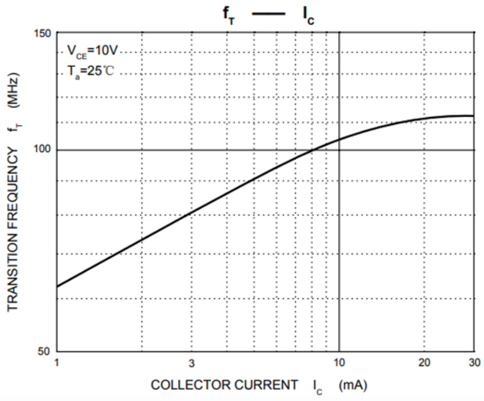

h_{FE} — I_C

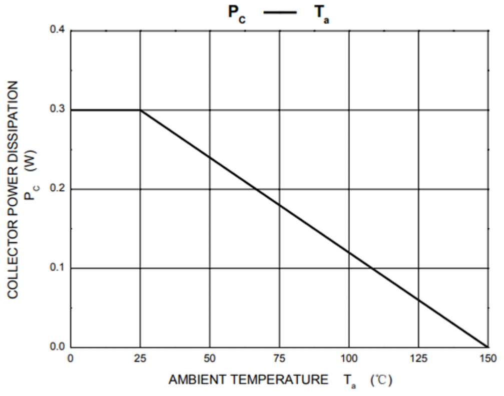

V_{BEsat} — I_C


V_{CEsat} — I_C


V_{BE} — I_C

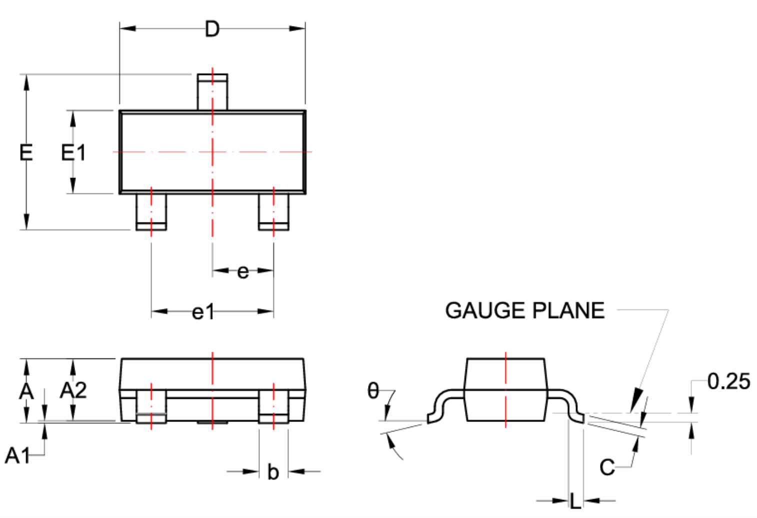

C_{ob} / C_{ib} — V_{CB} / V_{EB}


f_T — I_C

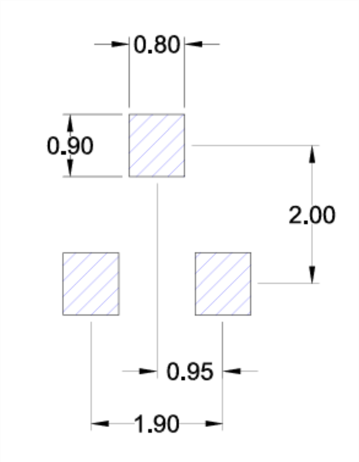

P_C — T_a

SOT-23

Package Dimension



Recommended Land Pattern



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	0.30	0.60	0.012	0.024
θ	0°	8°	0°	8°

NOTE: DIMENSION D DOES NOT INCLUDE MOLD FLASH,PROTRUSIONS OR GATE BURRS.

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CONTACT US

	GS Headquarter
🏢	4F.,No.43-1,Lane11,Sec.6,Minquan E.Rd Neihu District Taipei City 114, Taiwan (R.O.C)
☎	886-2-2657-9980
📠	886-2-2657-3630
✉@	sales_twn@gs-power.com

	RD Division
🏢	824 Bolton Drive Milpitas. CA. 95035
☎	1-408-457-0587