

GSTMMBTA42JZF

NPN Transistor

Product Description

This device is designed for a general-purpose application.

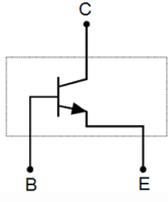
Features

- BV_{CE0} 300V

Mechanical Data

- SOT-23. Package
- RoHS Compliant and Halogen Free

Package and Pin Assignment

SOT-23		Equivalent Circuit	
			
Pin	Description	Pin	Description
1	Base	3	Collector
2	Emitter		

Ordering and Marking Information

GS P/N	Package	Marking	Quantity / Reel
GSTMMBTA42JZF	SOT-23	1D	3,000PCS
GSTMMBTA42JZF - Product Code: GSTMMBTA42 - Package Code: JZ for SOT-23 - Green Level: F for RoHS Compliant and Halogen Free			
Marking Information			
- Product Code: 1D			

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

Symbol	Parameter	Rating	Unit
V _{CEO}	Collector-Emitter Voltage	300	V
V _{CBO}	Collector-Base Voltage	300	V
V _{EBO}	Emitter-Base Voltage	6.0	V
I _C	Peak Collector Current	500	mA
P _D	Power Dissipation T _A =25°C*	350	mW
R _{θJA}	Thermal Resistance, Junction to Ambient	357	°C/W
T _J	Junction Temperature Range	150	°C
T _{STG}	Storage Temperature Range	-55 to +150	°C

* Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.

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	300	-	V
V _{(BR)CBO}	Collector-Base Breakdown Voltage	I _C =0.1mA, I _E =0mA	300	-	V
V _{(BR)EBO}	Emitter-Base Breakdown Voltage	I _E =0.1mA, I _C =0mA	6.0	-	V
I _{CBO}	Collector Cutoff Current	V _{CB} =200V, I _E =0mA	-	100	nA
I _{EBO}	Emitter Cutoff Current	V _{EB} =6V, I _C =0mA	-	100	nA
h _{FE}	DC Current Gain	I _C =1mA, V _{CE} =10.0V	25	-	-
		I _C =10mA, V _{CE} =10.0V	40	-	-
		I _C =30mA, V _{CE} =10.0V	40	-	-
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C =20mA, I _B =2mA	-	0.5	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C =20mA, I _B =2mA	-	0.9	V
f _T	Current Gain - Bandwidth Product	V _{CE} =20V, I _C =10mA, f=100MHz	50	-	MHz
C _{obo}	Output Capacitance	V _{CB} =20.0V, I _E =0, f=1.0MHz	-	3.0	pF

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

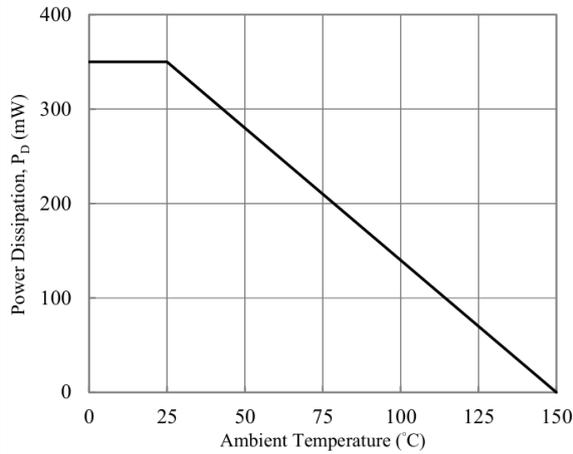


Fig. 1 Power Derating Curves

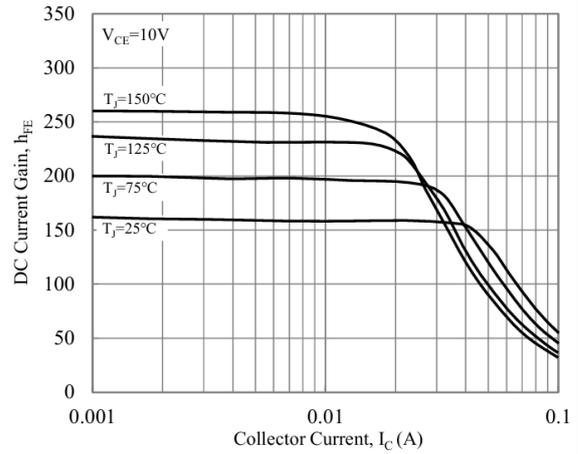


Fig. 2 Current Gain vs. Collector Current

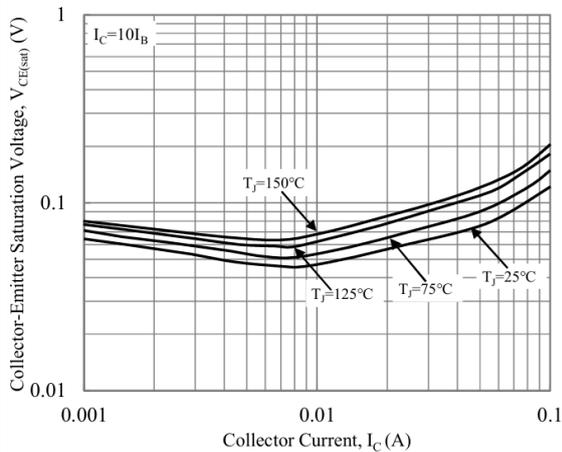


Fig. 3 Collector-Emitter Saturation Voltage vs. Collector Current

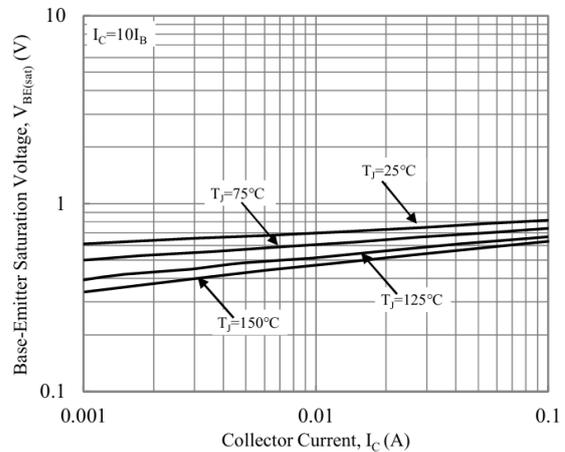


Fig. 4 Base-Emitter Saturation Voltage vs. Collector Current

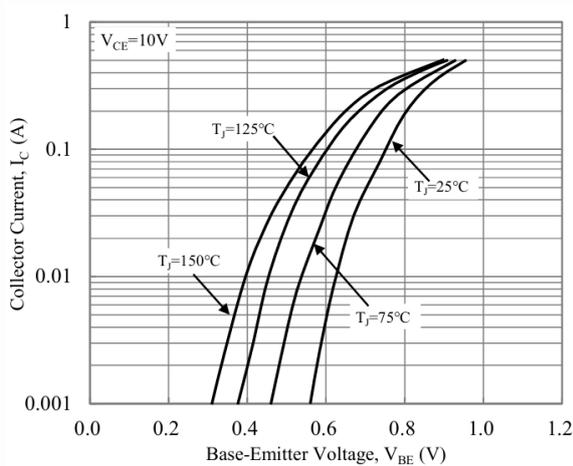


Fig. 5 Base-Emitter Voltage vs. Collector Current

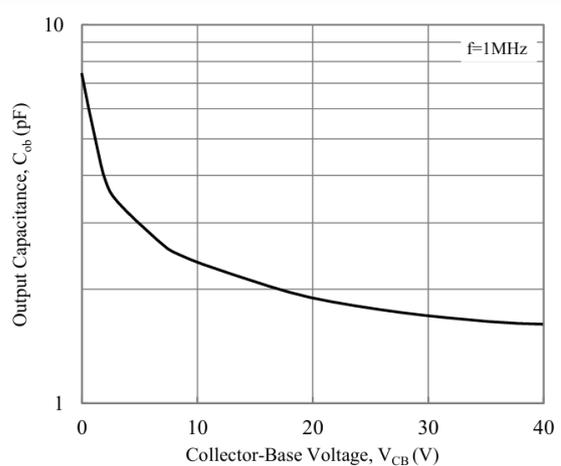


Fig. 6 Output Capacitance

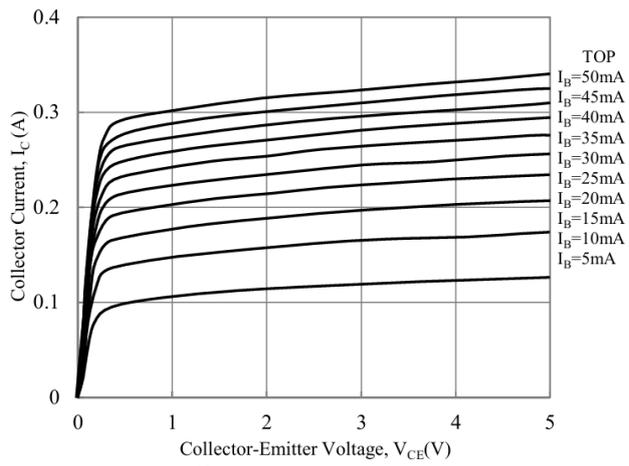
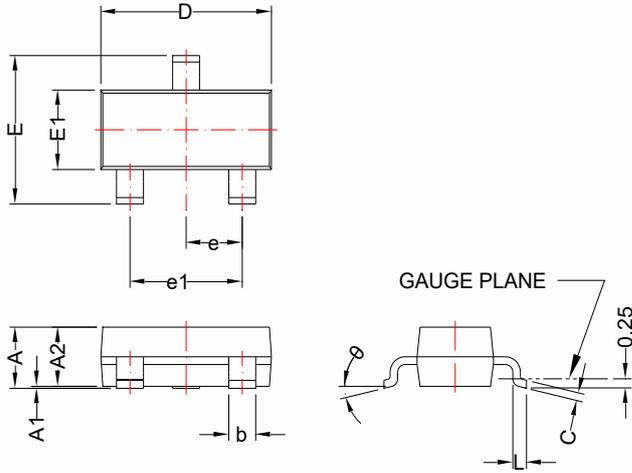


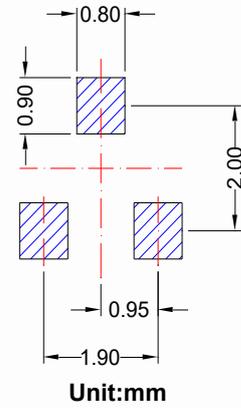
Fig. 7 Collector-Emitter Voltage vs. Collector Current

SOT-23

Package Dimension



Recommended Land Pattern



Dimensions

SYMBOL	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	0.75	1.20	0.030	0.047
A1	0.00	0.15	0.000	0.006
A2	0.70	1.10	0.028	0.043
b	0.30	0.60	0.012	0.024
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	0.2	0.6	0.008	0.024
θ	0°		8°	

NOTE:

Dimensions are exclusive of Burrs, Mold Flash & Tie Bar extrusions.

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