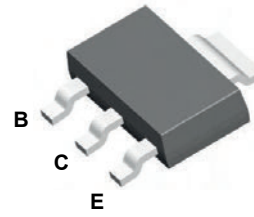
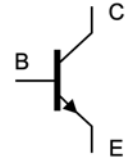


Features

- Complementary to GSCZT32C
- Power amplifier applications up to 3.0 amps.



SOT-223



Schematic Diagram

Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CB0}	100	V
Collector-Emitter Voltage	V_{CEO}	100	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current-Continuous	I_C	3	A
Collector Power Dissipation	P_C	1	W
Operation Junction and Storage Temperature Range	T_J, T_{stg}	-55 to +150	$^\circ\text{C}$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=1\text{mA}, I_E=0$	100	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=30\text{mA}, I_B=0$	100	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=3\text{mA}, I_C=0$	5	-	-	V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=100\text{V}, I_E=0$	-	-	200	μA
Base Cut-Off Current	I_{CEO}	$V_{CE}=60\text{V}, I_B=0$	-	-	300	μA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=5\text{V}, I_C=0$	-	-	1	mA
DC Current Gain ¹	$h_{FE(1)}$	$V_{CE}=4\text{V}, I_C=1\text{A}$	25	-	-	-
	$h_{FE(2)}$	$V_{CE}=4\text{V}, I_C=3\text{A}$	10	-	100	
Collector-Emitter Saturation Voltage ¹	$V_{CE(sat)}$	$I_C=3.0\text{A}, I_B=375\text{mA}$	-	-	1.2	V
Base-Emitter Voltage ¹	V_{BE}	$V_{CE}=4\text{V}, I_C=3\text{A}$	-	-	1.8	V
Transition Frequency	f_T	$V_{CE}=10\text{V}, I_C=500\text{mA}, F=1\text{MHz}$	3	-	-	MHz

Note:

1. Pulsed, 2%D.C.

Typical Electrical Characteristic Curves

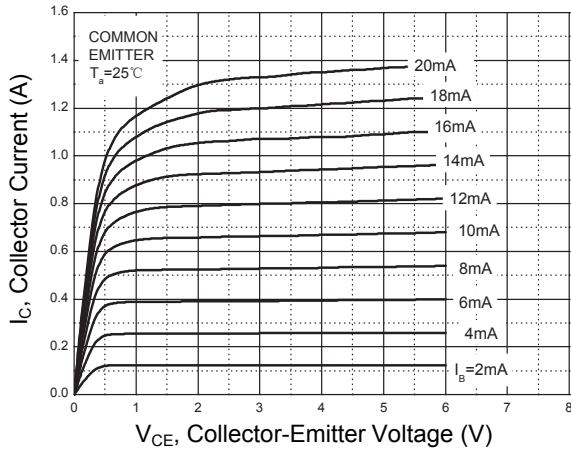


Figure 1. Static Characteristic

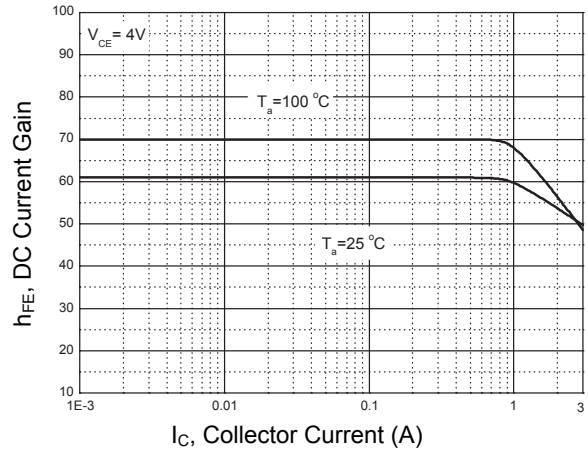


Figure 2. $h_{FE} - I_C$

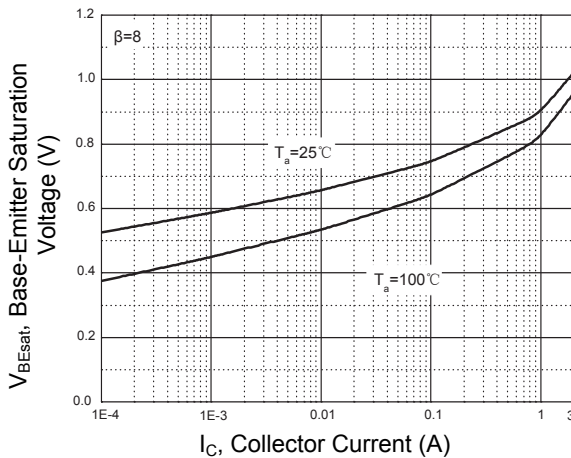


Figure 3. $V_{BEsat} - I_C$

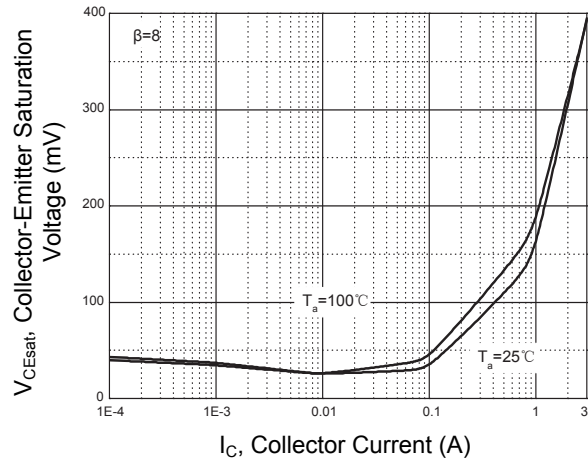


Figure 4. $V_{CEsat} - I_C$

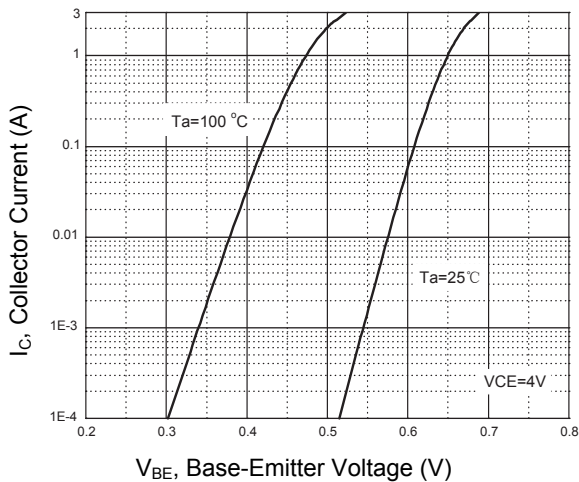


Figure 5. $V_{BE} - I_C$

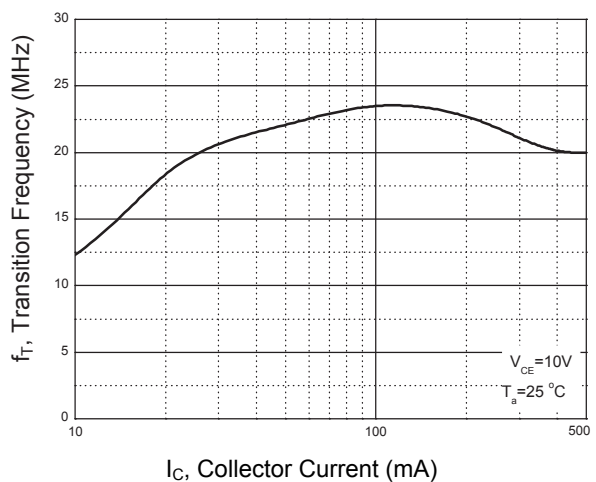


Figure 6. $f_T - I_C$

Typical Electrical Characteristic Curves

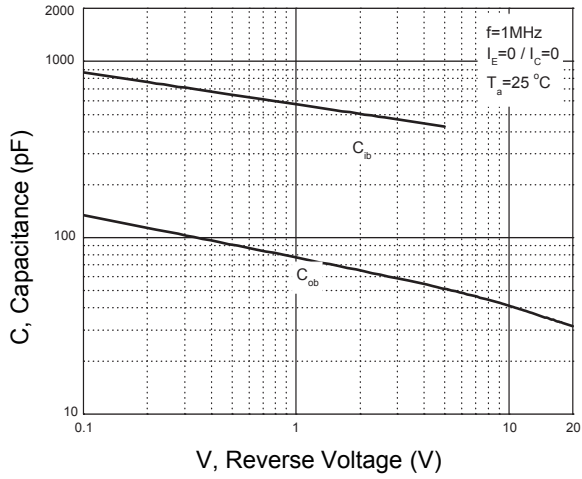


Figure 7. $C_{ob}/C_{ib} - V_{CB}/V_{EB}$

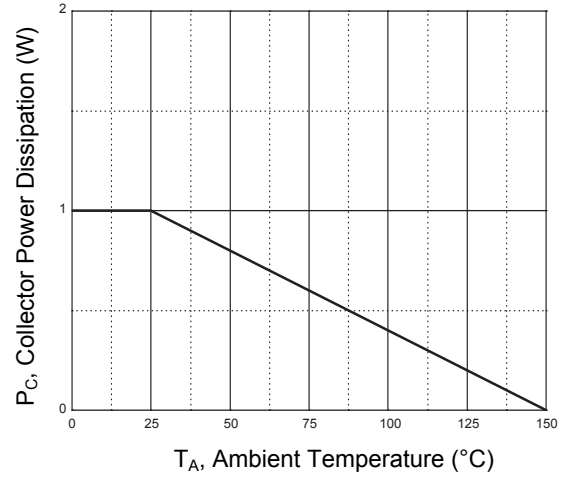
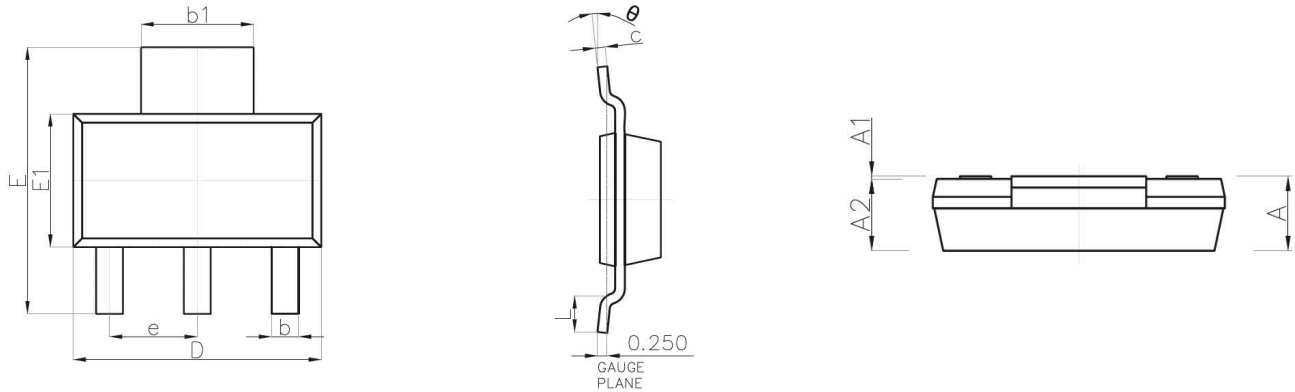


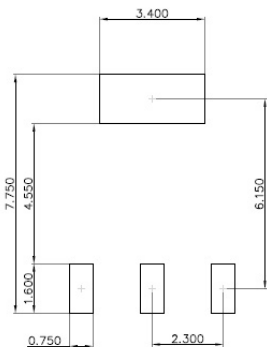
Figure 8. $P_C - T_a$

Package Outline Dimensions (SOT-223)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	-	1.800	-	0.071
A1	0.020	0.100	0.001	0.004
A2	1.500	1.700	0.059	0.067
b	0.660	0.840	0.026	0.033
b1	2.900	3.100	0.114	0.122
c	0.230	0.350	0.009	0.014
D	6.300	6.700	0.248	0.264
E	6.700	7.300	0.264	0.287
E1	3.300	3.700	0.130	0.146
e	2.300 (BSC)		0.091 (BSC)	
L	0.750	-	0.030	-
θ	0°	10°	0°	10°

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
GSCZT31C	SOT-223	CZT31C	2,500pcs / Reel	RoHS Compliant