SOT-223 Plastic-Encapsulate Transistors

Features

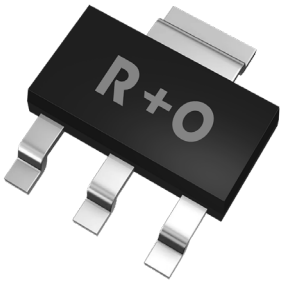
- High DC Current Gain
- Built-in a Damper Diode at E-C
- Complementary to CZT127

Collector-Emitter Voltage
VCEO 100V
Collector Current
5.0 Ampere

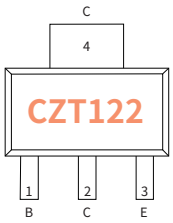
Mechanical Data

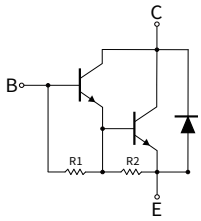
- Case: SOT-223
  Molding compound meets UL 94V-0 flammability rating, RoHS-compliant,halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750,Method 2026

SOT-223



Function Diagram





Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOT-223	R3	0.125	2500	5000	50000	13''

Maximum Ratings (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Collector-Base Voltage	V_{CBO}	V	100
Collector-Emitter Voltage	V_{CEO}		100
Emitter-Base Voltage	V_{EBO}		5.0
Collector Current	I_C	A	5.0
Collector Power Dissipation	P_C	W	1
Storage temperature	T_{stg}	°C	-55 ~+150
Junction temperature	T_j	°C	-55 ~+150

Electrical Characteristics (Ta=25°C Unless otherwise noted)

PARAMETER	SYMBOL	UNIT	Condition	Min	Typ	Max
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	V	I_C=1mA, I_E=0	100	—	—
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	V	I_C=30mA, I_B=0	100	—	—
Collector-Base cut-off current	I_{CBO}	mA	V_{CB}=100V,I_E=0	—	—	0.2
Collector-Emitter cut-off current	I_{CEO}		V_{CE}=50V,I_E=0	—	—	0.5
Emitter-Base cut-off current	I_{EBO}		V_{EB}= 5.0V,I_C=0	—	—	0.2
DC Current Gain	$h_{FE\ (1)}$	—	I_C=500mA V_{CE}= 3.0V	500	—	—
	$h_{FE\ (2)}$	—	I_C=3.0A V_{CE}= 3.0V	1000	—	—
	$h_{FE\ (3)}$	—	I_C=5.0A V_{CE}= 3.0V	200	—	—
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	V	I_C= 3A I_B= 12mA	—	—	2
			I_C=5A I_B=20mA			4
Base-Emitter On Voltage	$V_{BE(on)}$	V	V_{CE}= 3V I_C= 3A	—	—	2.5
Output Capacitance	C_{ob}	pF	V_{CB}= 10V， I_E=0, f=1MHZ	—	—	100

Small-signal Characteristics

ITEM	SYMBOL	Condition	UNIT	Min	Typ	Max
Transition frequency	f_T	I_C= 0.75A, V_{CE}=10V	MHz	25	—	—

Note : Measured under pulsed conditions. Pulse width ⩽ 300 us. Duty cycle ⩽ 2%

Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)

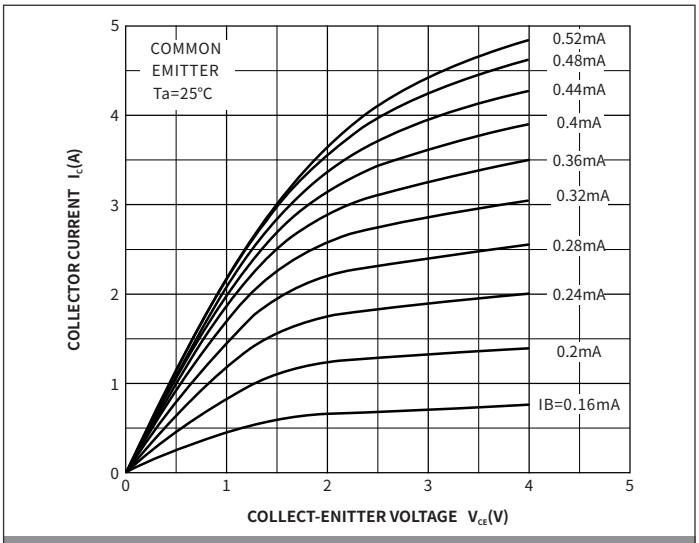


Fig.1 Static Characteristic

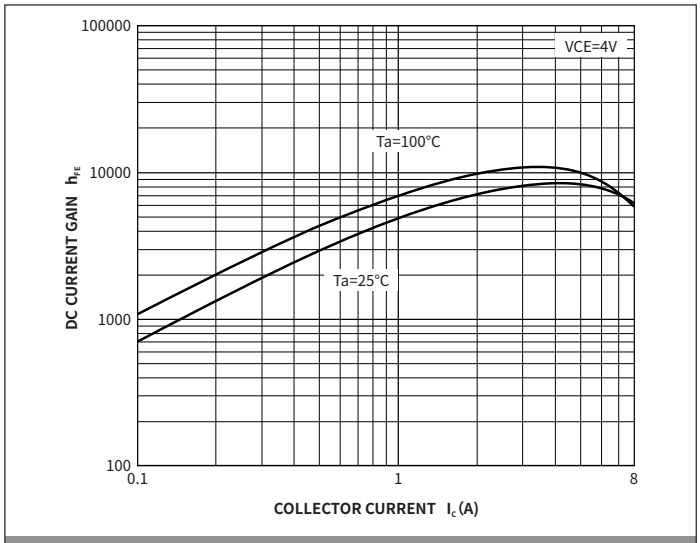


Fig.2 DC Current Gain

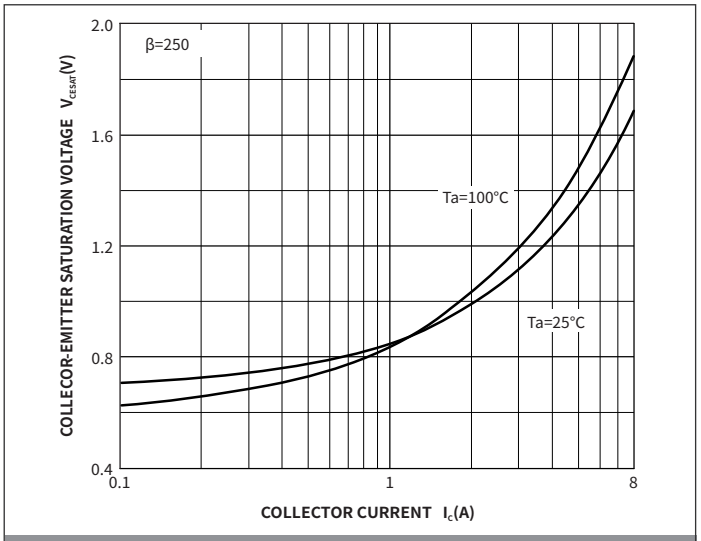


Fig.3 Collector-Emitter Saturation Voltage

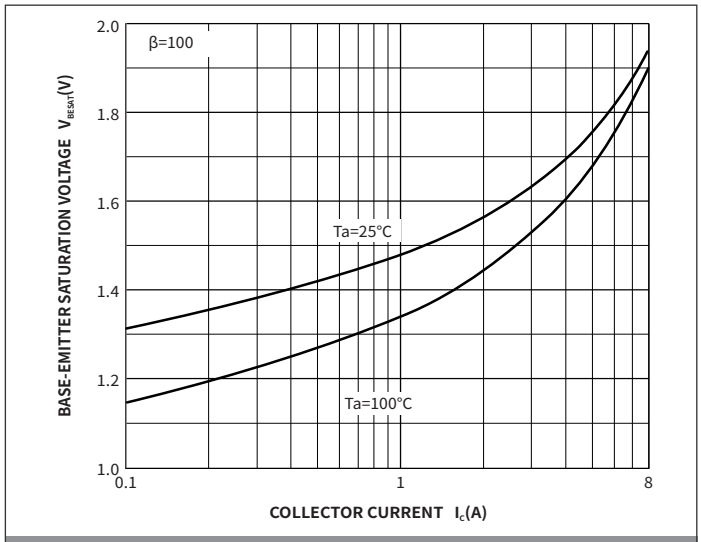


Fig.4 Base-Emitter Saturation Voltage

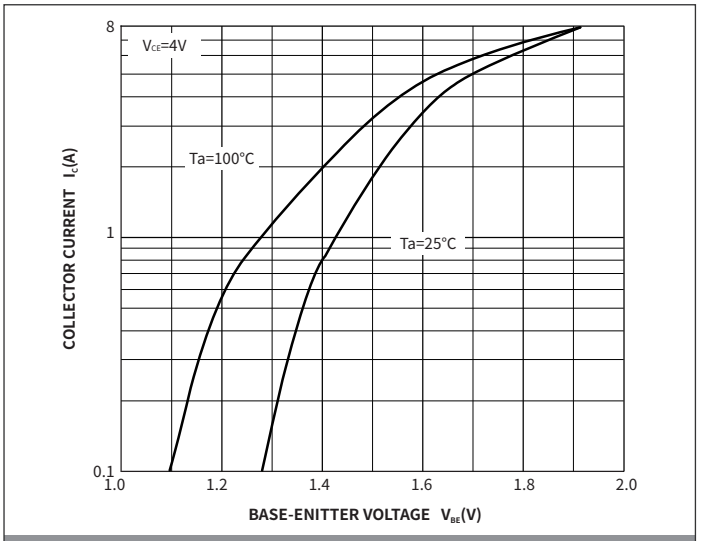


Fig.5 Base-Emitter On Voltage

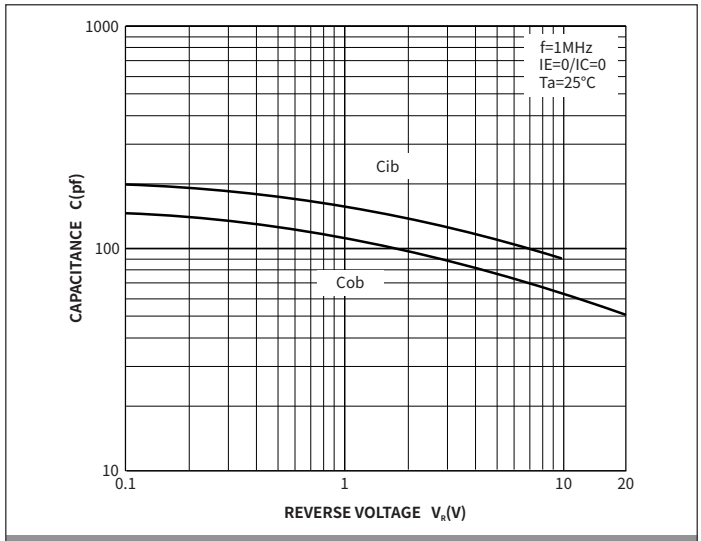
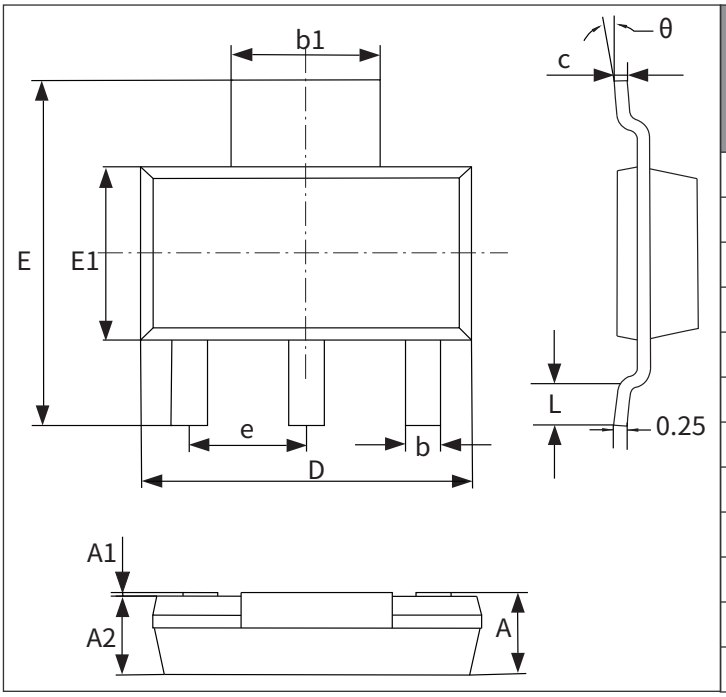


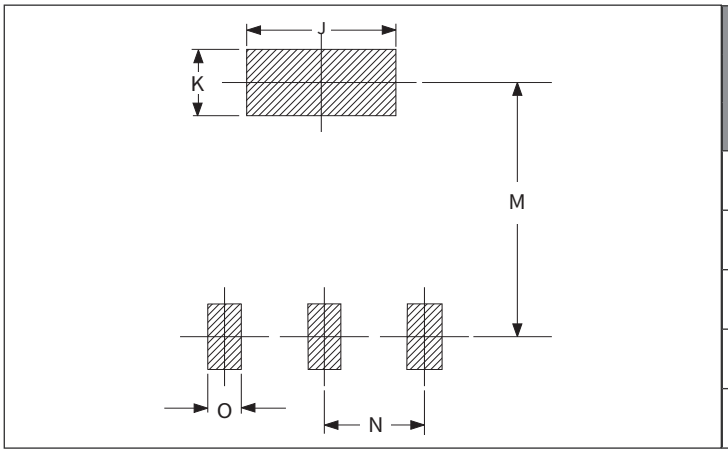
Fig.6 Cob/Cib-$V_{CB}V_{EB}$

Package Outline Dimensions (SOT-223)



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	-	1.8	-	0.071
A1	0.020	0.100	0.001	0.004
A2	1.50	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)		0.091TYP	
L	0.750	-	0.030	-
θ	0°	10°	0°	10°

Suggested Pad Layout



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	3.20	3.60	0.126	0.142
K	1.40	1.80	0.055	0.071
M	5.90	6.30	0.23	0.25
N	2.15	2.45	0.085	0.096
O	0.60	0.85	0.024	0.033