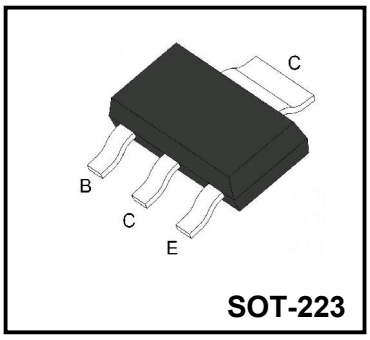
NPN Plastic-Encapsulate Transistors



SOT-223

Features

- 3 Amps continuous current
- Low saturation voltages
- Hight voltage
- Complement to FZT751

Absolute Maximum Rating (T_C=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	BV_{CBO}	80	V
Collector-Emitter Voltage	BV_{CEO}	60	V
Emitter-Base Voltage	BV_{EBO}	5	V
Continuous Collector CurrentI	I_C	3	A
Peak Pulse CurrentI	I_{CM}	6	A
Power Dissipation at T_C=25℃	P_{TOT}	2	W
Junction Temperature	Tj	150	℃
Storage Temperature	Tstg	-55～150	℃

Electrical Characteristics (T_C=25℃ unless otherwise noted)

Parameter	Symbol	Conditions	Value			Unit
			Min	Typ	Max	
Collector-base breakdown voltage	BV_{CBO}	I_C = 100μA，I_E = 0	80			V
Collector-emitter breakdown voltage	BV_{CEO}	I_C = 1mA，I_B = 0	60			V
Emitter-base breakdown voltage	BV_{EBO}	I_E = 100μA，I_C = 0	5			V
Collector cut-off current	I_{CBO}	V_{CB} = 60V，I_B = 0			0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB} = 4V，I_C = 0			0.1	μA
DC current gain	h_{FE}	V_{CE} = 2V，I_C= 50mA V_{CE} = 2V，I_C= 0.5A V_{CE} = 2V，I_C= 1A V_{CE} = 2V，I_C= 2A	70 100 80 40		300	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C = 1A，I_B = 100mA I_C = 3A，I_B = 300mA			0.3 0.6	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C = 1A，I_B = 100mA			1.25	V
Base-emitter turn-on voltage	$V_{BE(on)}$	V_{CE} = 2V，I_C= 1A			1.0	V
Transition Frequency	f_T	V_{CE} = 5V，I_C = 100mA	140			MHz
Output Capacitance	C_{ob}	V_{CB} = 10V, I_E = 0,f=1MHz			30	pF

Typical Characteristics

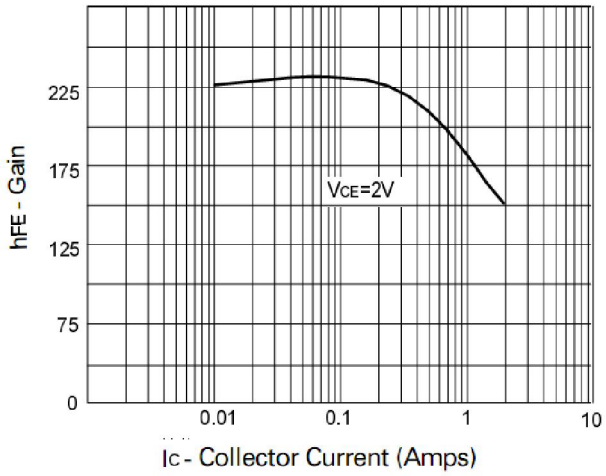


Figure 1. DC current Gain

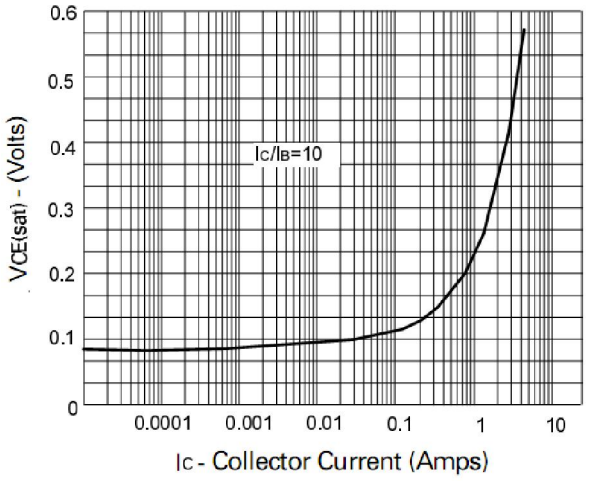


Figure 2. Collector-Emitter Saturation Voltage

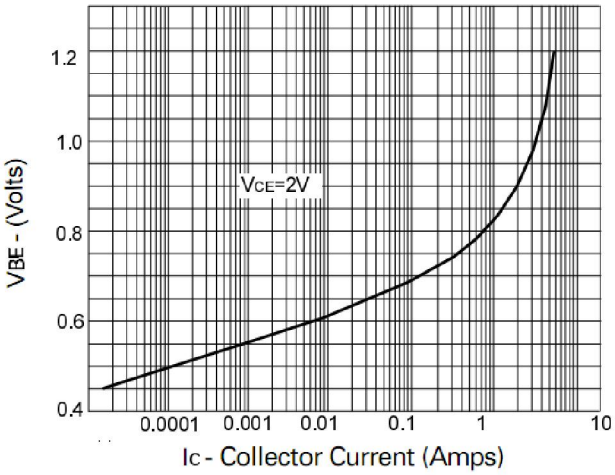


Figure 3. Base-Emitter on Voltage

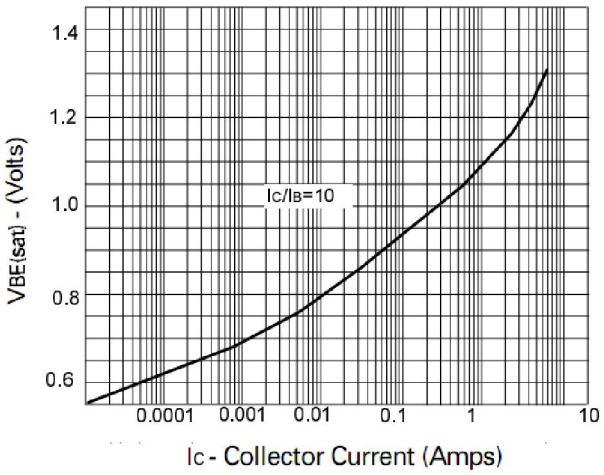


Figure 4. Base-Emitter Saturation Voltage

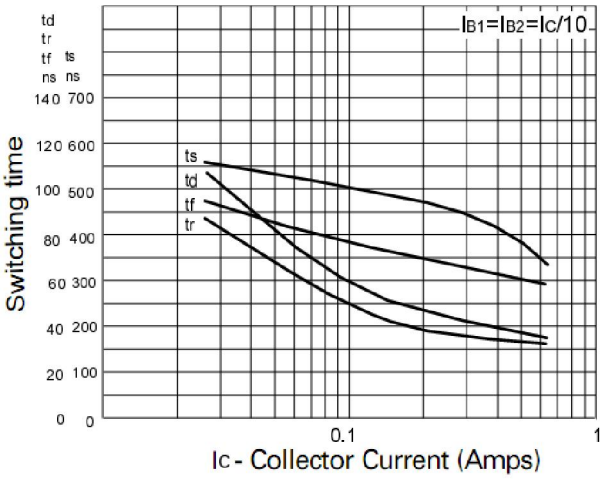


Figure 5. Switching Speeds

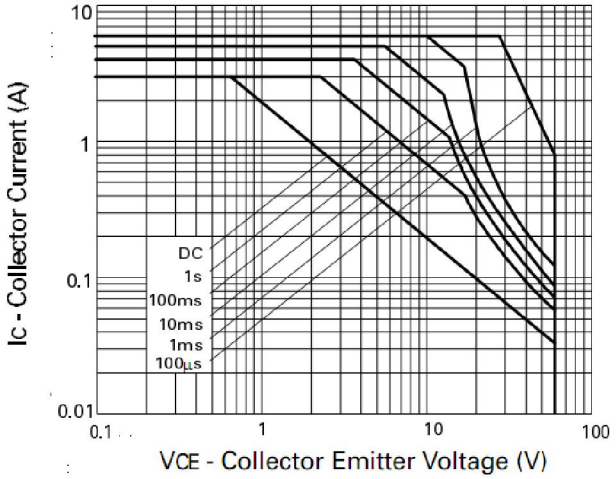
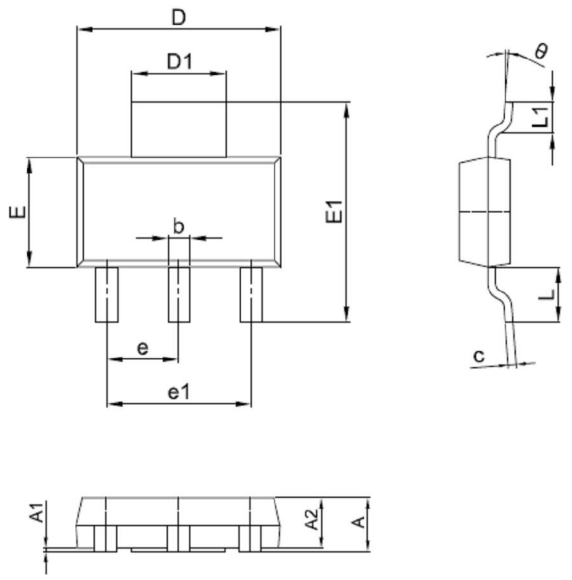


Figure 6. Safe Operating Area

Package Outline SOT-223



Symbol	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	1.50	1.80	0.059	0.071
A1	0.00	0.10	0.000	0.004
A2	1.50	1.70	0.059	0.067
b	0.65	0.75	0.026	0.030
c	0.20	0.30	0.008	0.012
D	6.40	6.60	0.252	0.260
D1	2.90	3.10	0.114	0.122
E	3.30	3.70	0.130	0.146
E1	6.85	7.15	0.270	0.281
e	2.20	2.40	0.087	0.094
e1	4.40	4.80	0.173	0.189
L	1.65	1.85	0.065	0.073
L1	0.90	1.15	0.035	0.045

Summary of Packing Options

Package	Package Description	Packing Quantity	Industry Standard
SOT-223	Tape/Reel,13"reel	4000	EIA-481-1