

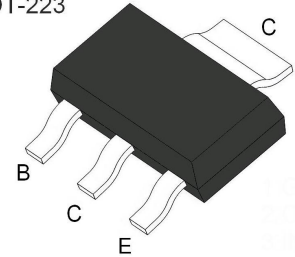
Applications

- Audio power amplifier
- DC-DC convertor
- Voltage regulator

Features

- High current output up to 3A
- Low saturation voltage

SOT-223



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

Parameter	Symbol	Value	Unit
Collector-Base Voltage	BV_{CBO}	50	V
Collector-Emitter Voltage	BV_{CEO}	30	V
Emitter-Base Voltage	BV_{EBO}	5	V
Collector Current	I_C	3	A
Collector Power Dissipation	P_C	1	W
Junction Temperature	T_j	150	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-55~150	$^{\circ}\text{C}$

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

Parameter	Symbol	Conditions	Value			Unit
			Min	Typ	Max	
Collector-base breakdown voltage	BV_{CBO}	$I_C = 100\mu\text{A}$, $I_E = 0$	50			V
Collector-emitter breakdown voltage	BV_{CEO}	$I_C = 1\text{mA}$, $I_B = 0$	30			V
Emitter-base breakdown voltage	BV_{EBO}	$I_E = 100\mu\text{A}$, $I_C = 0$	5			V
Collector cut-off current	I_{CEO}	$V_{CB} = 30\text{V}$, $I_B = 0$			1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 3\text{V}$, $I_C = 0$			1	μA
* DC current gain	h_{FE1}	$V_{CE}=2\text{V}$, $I_C = 20\text{mA}$	80			
	h_{FE2}	$V_{CE}=2\text{V}$, $I_C = 1\text{A}$	100		400	
* Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 2\text{A}$, $I_B = 0.2\text{A}$		0.25	0.5	V
* Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 2\text{A}$, $I_B = 0.2\text{A}$		1.0	2.0	V
Transition frequency	f_T	$V_{CE} = 5\text{V}$, $I_B = 0.1\text{A}$	50			MHz

* Pulse test: $PW \leq 300\mu\text{s}$, duty cycle $\leq 2\%$ Pulse

h_{FE2}

Range	160-320
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Typical Characteristics

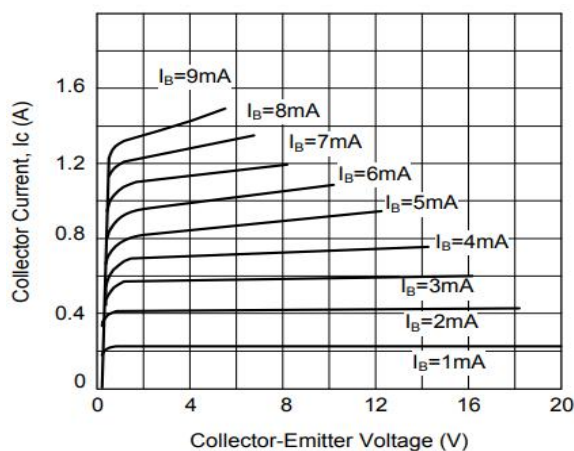


Figure 1. Static Characteristic

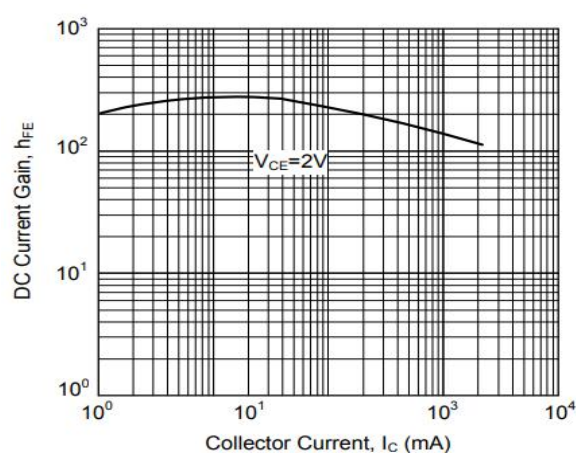
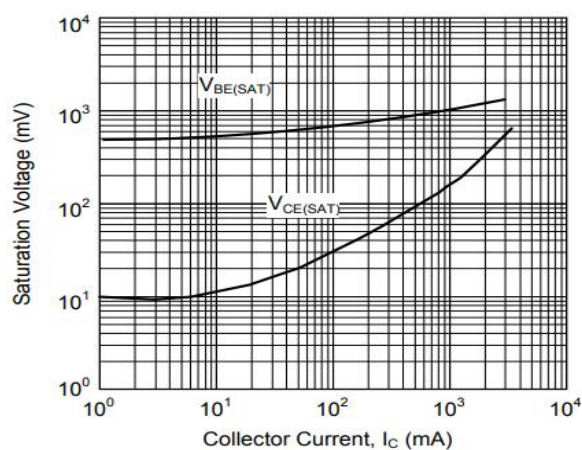


Figure 2. DC current Gain



**Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage**

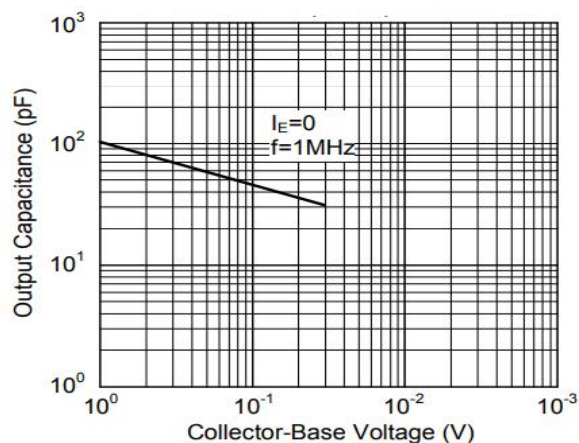


Figure 4. Collector Output Capacitance

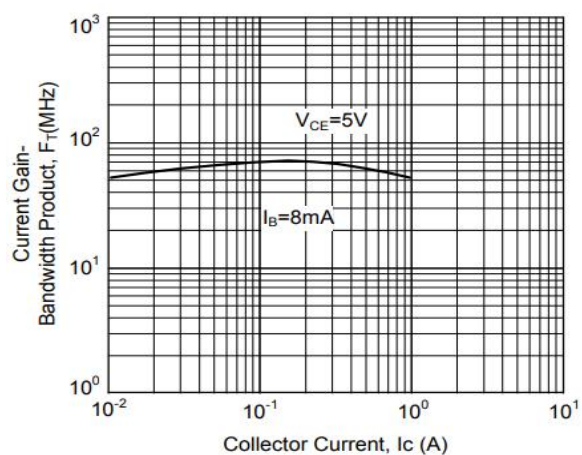


Figure 5. Current Gain-Bandwidth Product

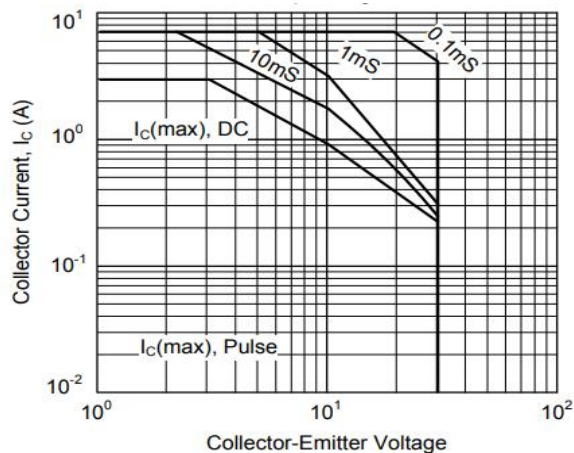
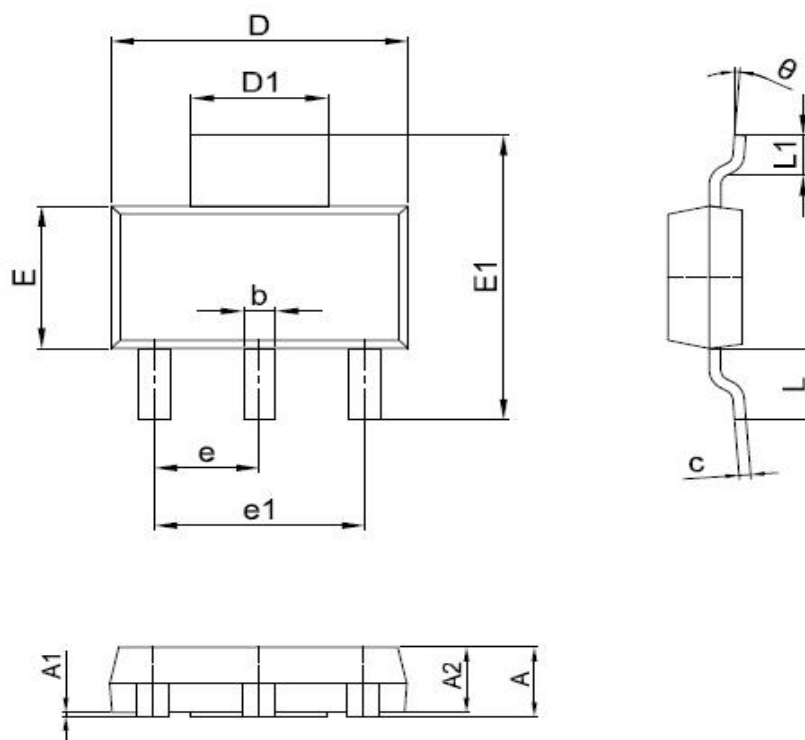


Figure 6. Safe Operating Area

Package Dimensions


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

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