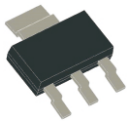
General Purpose Transistor

PZTA44-HF (NPN)

RoHS Device
Halogen Free



Features

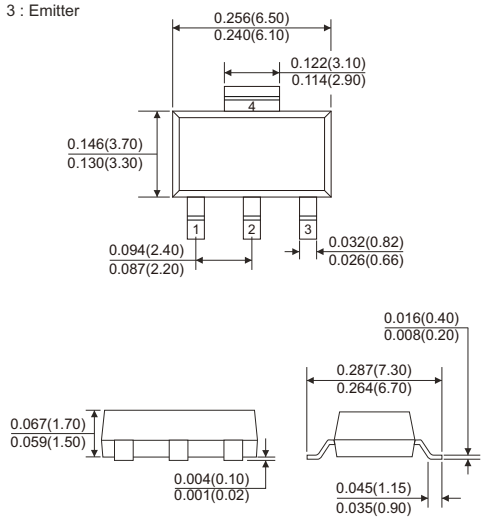
- Low current.
- High voltage.
- Epitaxial planar die construction.

Mechanical data

- Case: SOT-223, molded plastic.
- Molding compound: UL flammability classification rating 94V-0.
- Terminals: Tin-plated, solderability per MIL-STD-202, method 208.

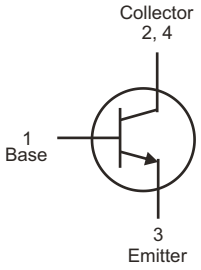
SOT-223

1 : Base
2, 4 : Collector
3 : Emitter



Dimensions in inches and (millimeter)

Circuit Diagram



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

Parameter	Symbol	Value	Unit
Collector-base breakdown voltage	V_{CBO}	500	V
Collector-emitter breakdown voltage	V_{CEO}	400	V
Emitter-base breakdown voltage	V_{EBO}	6	V
Collector current-continuous	I_C	0.3	A
Collector current-peak pulse width	I_{CM}	0.3	A
Peak base current	I_{BM}	0.1	A
Power dissipation (Note 1)	P_D	1.35	W
Thermal resistance, junction to ambient (Note 1)	$R_{\theta JA}$	92	°C/W
Junction temperature range	T_J	-55 to +150	°C
Storage temperature range	T_{STG}	-55 to +150	°C

Notes: 1. Device mounted on a printed-circuit board, single-sided copper, tinplated, mounting pad for collector 1cm².

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Electrical Characteristics (Ta=25°C, unless otherwise specified)

Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
Collector-base breakdown voltage	I_C = 100μA, I_E = 0	$V_{(BR)CBO}$	500			V
Collector-emitter breakdown voltage	I_C = 1mA, I_B = 0	$V_{(BR)CEO}$	400			V
Emitter-base breakdown voltage	I_E = 10μA, I_C = 0	$V_{(BR)EBO}$	6			V
Collector cut-off current	V_{CB} = 400V, I_E = 0	I_{CBO}			100	nA
Base cut-off current	V_{EB} = 4V, I_C = 0	I_{EBO}			100	nA
DC current gain	V_{CE} = 10V, I_C = 1mA	$h_{FE(1)}$	40			
	V_{CE} = 10V, I_C = 10mA	$h_{FE(2)}$	50		200	
	V_{CE} = 10V, I_C = 50mA	$h_{FE(3)}$	45			
	V_{CE} = 10V, I_C = 100mA	$h_{FE(4)}$	40			
Collector-emitter saturation voltage	I_C = 1mA, I_B = 0.1mA	$V_{CE(sat)}$			0.4	V
	I_C = 10mA, I_B = 1mA				0.5	V
	I_C = 50mA, I_B = 5mA				0.75	V
Base-emitter saturation voltage	I_C = 10mA, I_B = 1mA	$V_{BE(sat)}$			0.75	V
Output capacitance	V_{CB} = 10V, I_E = 0, f = 1MHz	C_{OBO}			7	pF
Transition frequency	I_C = 10mA, V_{CE} = 20V, f = 100MHz	f_T	50			MHz

Rating and Characteristic Curves (PZTA44-HF)

Fig.1 - h_{FE} — I_C

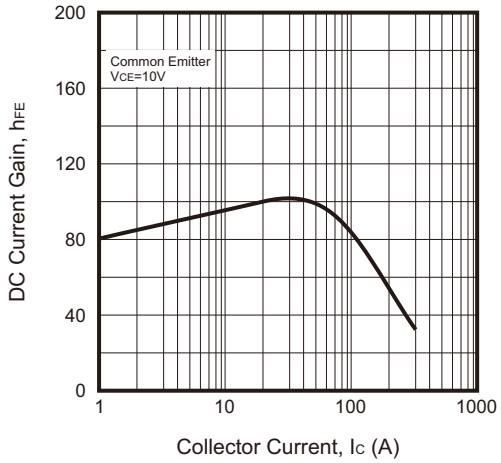


Fig.2 - Turn-on Switching Characteristics

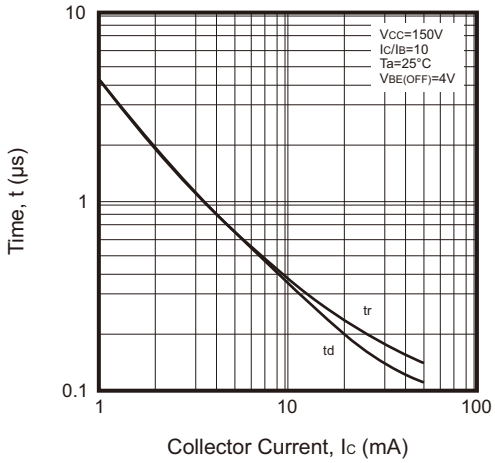


Fig.3 - Turn-off Switching Characteristics

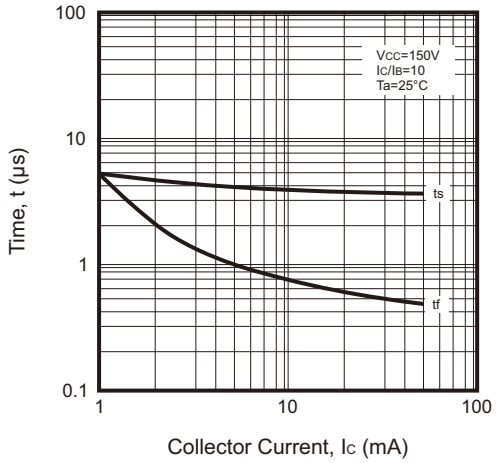


Fig.4 - C_{ib}/C_{ob} — V_{CB}

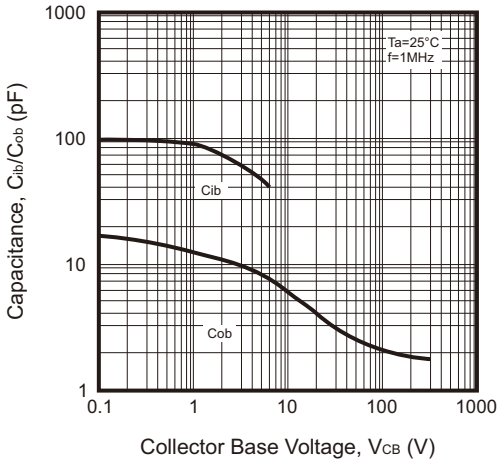


Fig.5 - $V_{BE(sat)}/V_{CE(sat)}$ — I_C

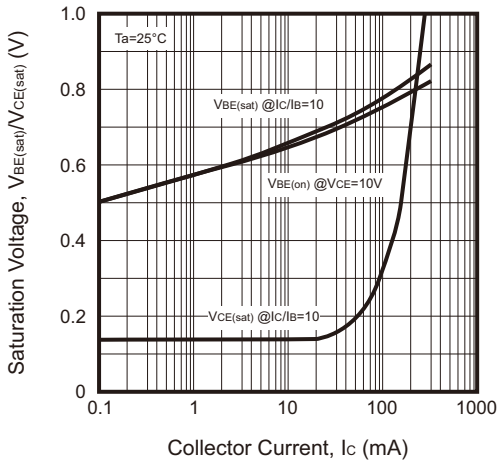
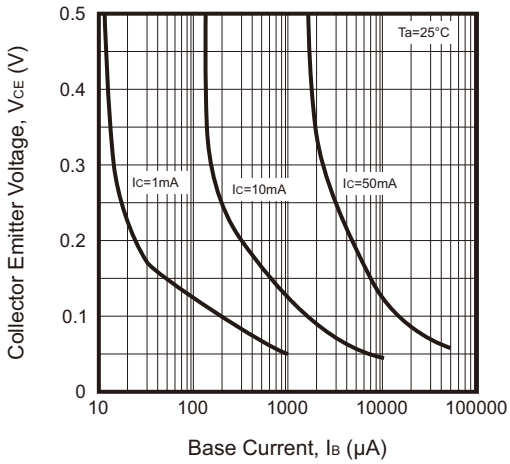
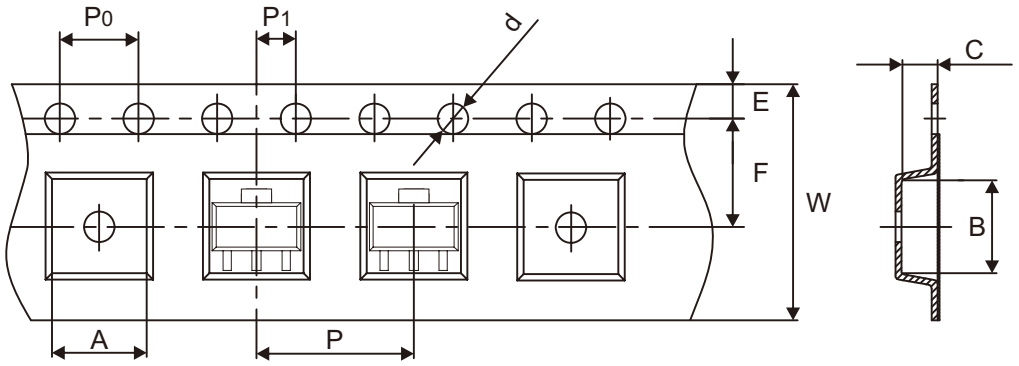
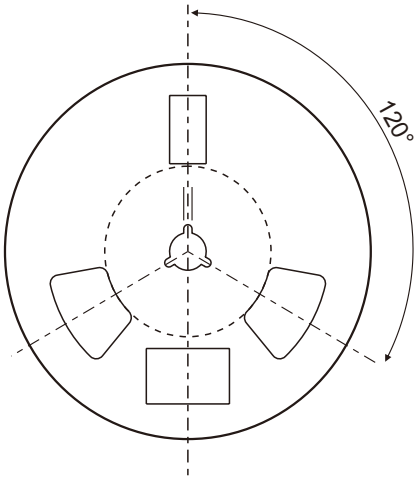


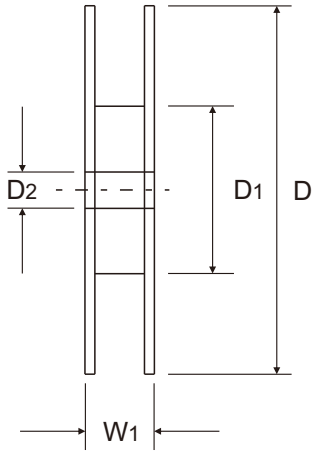
Fig.6 - Collector Saturation Region

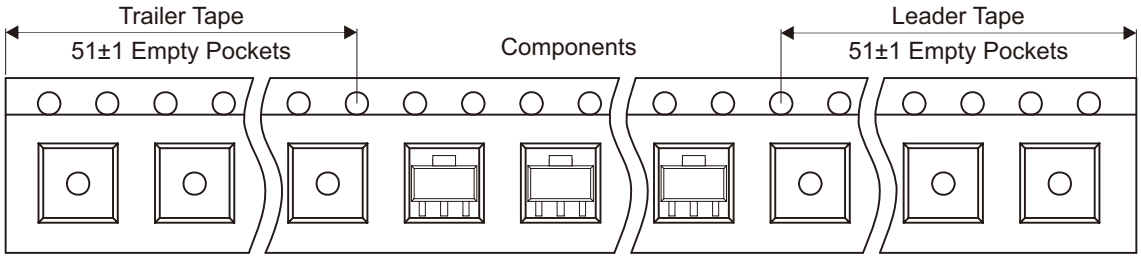


Reel Taping Specification







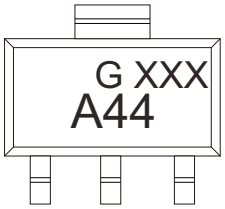


	SYMBOL	A	B	C	d	D	D_1	D_2
SOT-223	(mm)	7.05 ± 0.10	7.40 ± 0.10	1.90 ± 0.10	1.55 ± 0.05	330.00 ± 1.00	100.00 ± 1.00	13.00 ± 0.20
	(inch)	0.278 ± 0.004	0.291 ± 0.004	0.075 ± 0.004	0.061 ± 0.002	12.992 ± 0.039	3.937 ± 0.039	0.512 ± 0.008

	SYMBOL	E	F	P	P_0	P_1	W	W_1
SOT-223	(mm)	1.75 ± 0.10	5.50 ± 0.10	8.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	12.00 + 0.30 − 0.10	16.40 ± 0.30
	(inch)	0.069 ± 0.004	0.217 ± 0.004	0.315 ± 0.004	0.157 ± 0.004	0.079 ± 0.004	0.472 + 0.012 − 0.004	0.646 ± 0.012

Marking Code

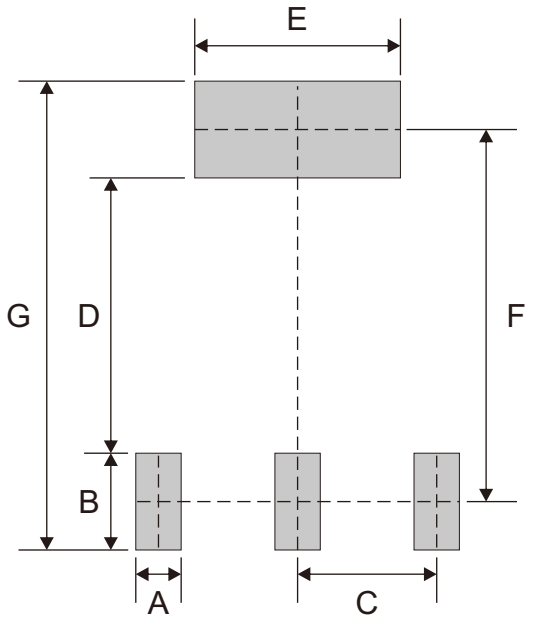
Part Number	Marking Code
PZTA44-HF	A44



G / XXX = Control code

Suggested P.C.B. PAD Layout

SIZE	SOT-223	
	(mm)	(inch)
A	0.75	0.030
B	1.60	0.063
C	2.30	0.091
D	4.55	0.179
E	3.40	0.134
F	6.15	0.242
G	7.75	0.305



Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
SOT-223	4,000	13