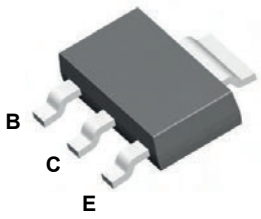
GOOD-ARK SEMICONDUCTOR

PZTA42

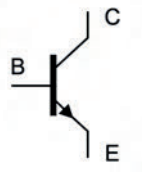
NPN Transistor

Features

- High breakdown voltage
- Low collector-emitter saturation voltage



SOT-223



Schematic Diagram

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

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	300	V
Collector-Emitter Voltage	V_{CEO}	300	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current-Continuous	I_C	0.2	A
Collector Current-Pulsed	I_{CM}	0.5	A
Collector Power Dissipation	P_C	1	W
Operation Junction and Storage Temperature Range	T_J,T_{stg}	-55 to +150	℃

Electrical Characteristics (T_A=25°C unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=100μA, I_E=0	300	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=1mA, I_B=0	300	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=100μA, I_C=0	6	-	-	V
Collector Cut-Off Current	I_{CBO}	V_{CB}=200V, I_E=0	-	-	0.1	μA
Emitter Cut-Off Current	I_{EBO}	V_{EB}=6V, I_C=0	-	-	0.1	μA
DC Current Gain	$h_{FE(1)}$	V_{CE}=10V, I_C=1mA	25	-	-	-
	$h_{FE(2)}$	V_{CE}=10V, I_C=10mA	40	-	-	-
	$h_{FE(3)}$	V_{CE}=10V, I_C=30mA	40	-	-	-
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=20mA, I_B=2mA	-	-	0.5	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=20mA, I_B=2mA	-	-	0.9	V
Transition Frequency	f_T	V_{CE}=20V, I_C=10mA, F=100MHz	50	-	-	MHz
Collector Output Capacitance	C_{ob}	V_{CB}=20V, I_E=0, F=1MHz	-	-	3	pF

Typical Electrical Characteristic Curves

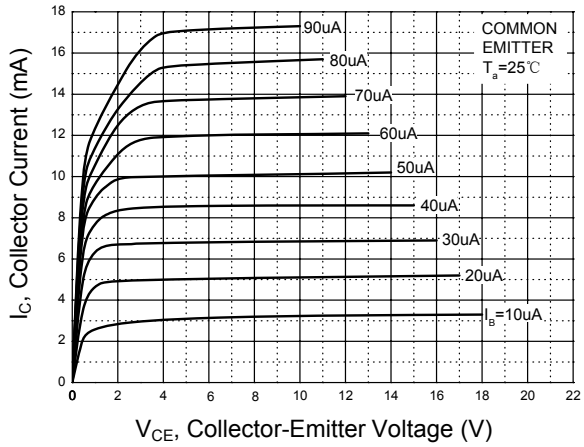


Figure 1. I_C — V_{CE}

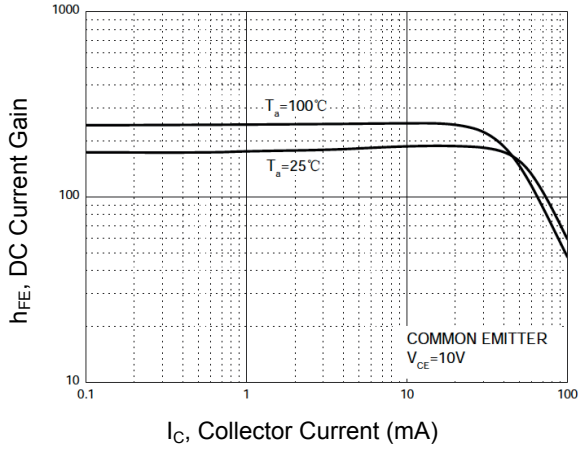


Figure 2. h_{FE} — I_C

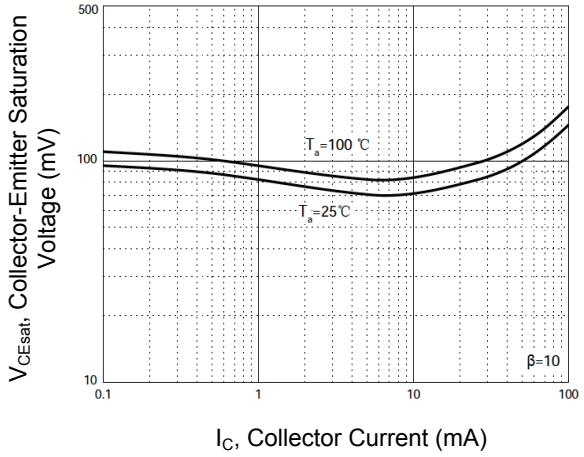


Figure 3. V_{CEsat} — I_C

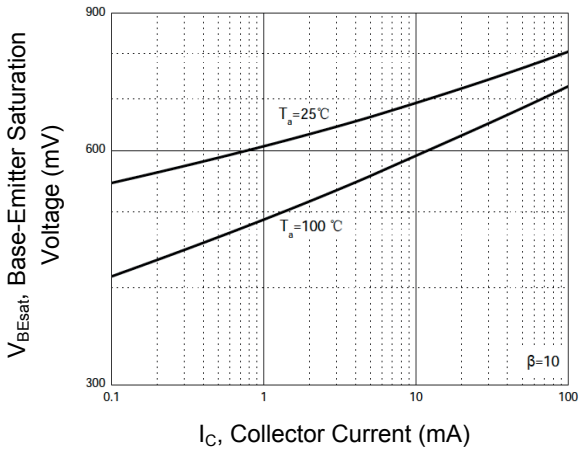


Figure 4. V_{BEsat} — I_C

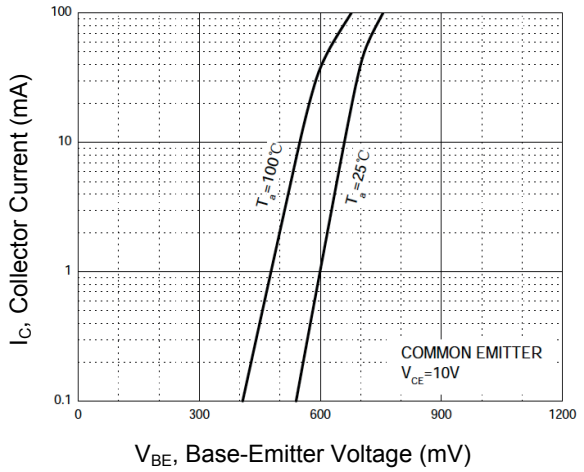


Figure 5. I_C — V_{BE}

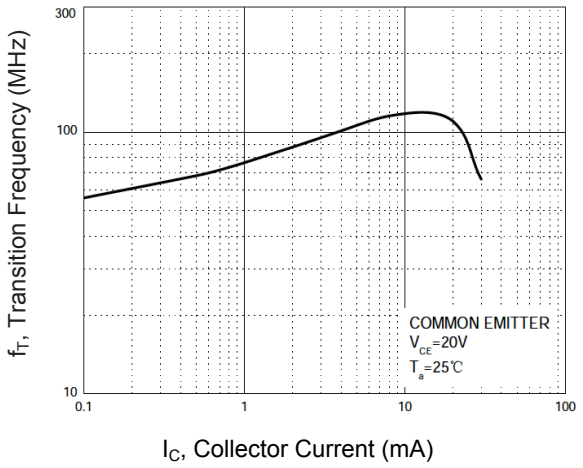


Figure 6. f_T — I_C

Typical Electrical Characteristic Curves

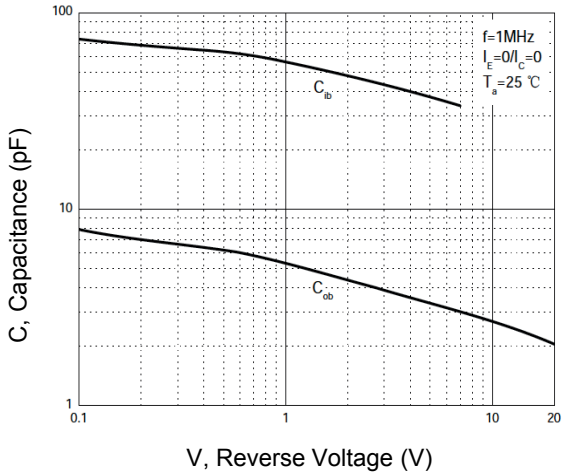


Figure 7. C_{ob}/C_{ib} — V_{CB}/V_{EB}

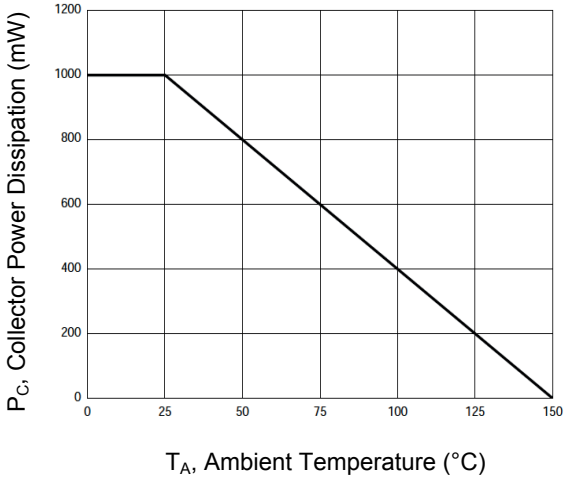
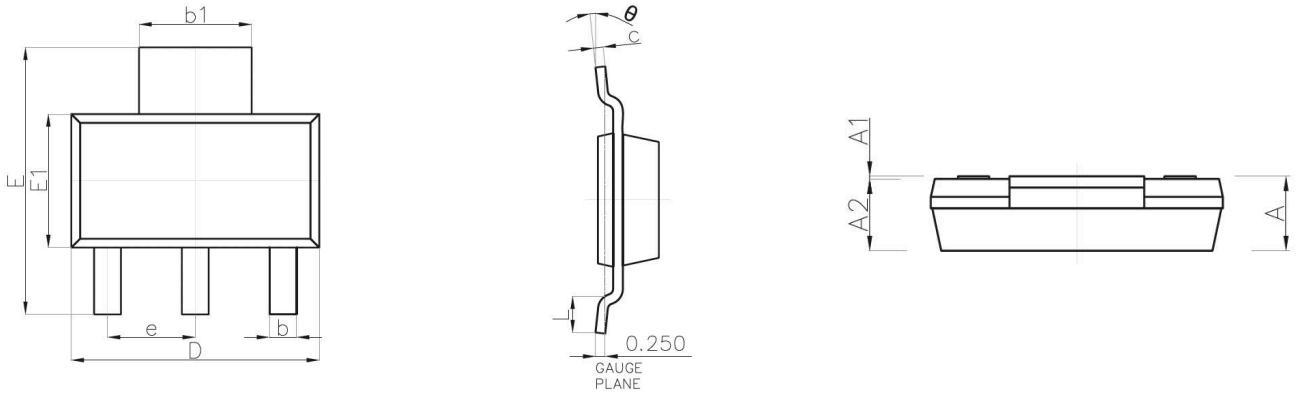


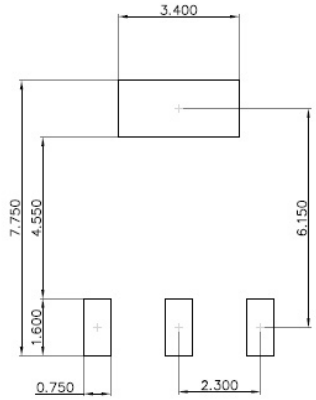
Figure 8. P_C — T_a

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: ±0.05mm.
3. The pad layout is for reference purposes only.

Order Information

Device	Package	Marking	Quantity	HSF Status
PZTA42	SOT-223	ZTA42	2,500pcs / Reel	RoHS Compliant