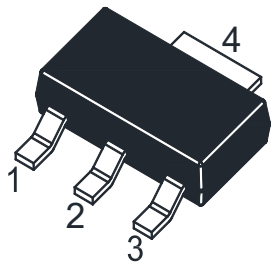
PZTA42Q-HAF

NPN Silicon Epitaxial Planar High Voltage Transistor

Features

• Halogen and Antimony Free(HAF),
RoHS compliant



1.Base 2.4.Collector 3.Emitter
SOT-223 Plastic Package

Absolute Maximum Ratings (T_a = 25℃ unless otherwise specified)

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	I_C	500	mA
Power Dissipation	P_{tot}	1.5	W
Operating Junction Temperature Range	T_j	- 55 to + 150	℃
Storage Temperature Range	T_{stg}	- 55 to + 150	℃

Thermal Resistance Ratings

Parameter	Symbol	Max.	Unit
Thermal Resistance from Junction to Ambient [1)]	$R_{\theta JA}$	83.3	℃/W

[1)] Device mounted on FR-4 substrate PC board, 2oz copper, with 1-inch square copper plate.

Dated: 02/12/2022 Rev: 02

Characteristics at T_a = 25°C

Parameter	Symbol	Min.	Max.	Unit
DC Current Gain at V_{CE} = 10 V, I_C = 1 mA at V_{CE} = 10 V, I_C = 10 mA at V_{CE} = 10 V, I_C = 30 mA	 h_{FE} h_{FE} h_{FE}	 25 40 40	 - - -	 - - -
Collector Base Cutoff Current at V_{CB} = 200 V	I_{CBO}	-	100	nA
Emitter Base Cutoff Current at V_{EB} = 6 V	I_{EBO}	-	100	nA
Collector Emitter Breakdown Voltage at I_C = 1 mA	$V_{(BR)CEO}$	300	-	V
Collector Base Breakdown Voltage at I_C = 100 µA	$V_{(BR)CBO}$	300	-	V
Emitter Base Breakdown Voltage at I_E = 100 µA	$V_{(BR)EBO}$	6	-	V
Collector Emitter Saturation Voltage at I_C = 20 mA, I_B = 2 mA	$V_{CE(sat)}$	-	500	mV
Base Emitter Saturation Voltage at I_C = 20 mA, I_B = 2 mA	$V_{BE(sat)}$	-	900	mV
Current Gain Bandwidth Product at V_{CE} = 20 V, I_C = 10 mA, f = 100 MHz	f_T	50	-	MHz
Collector Output Capacitance at V_{CB} = 20 V, I_E = 0, f = 1 MHz	C_{ob}	-	3	pF

Electrical Characteristics Curves

Fig. 1 Output Characteristics Curve

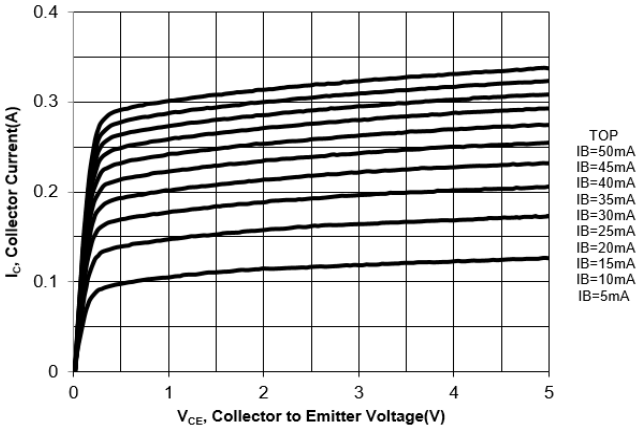


Fig. 2 Collector Current vs. V_{BE}

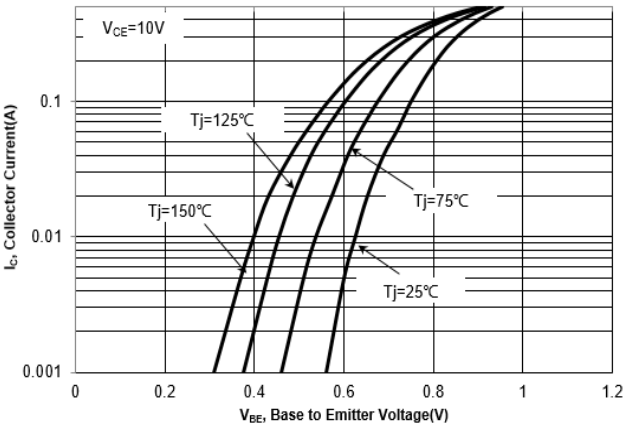


Fig. 3 DC Current Gain vs. Collector Current

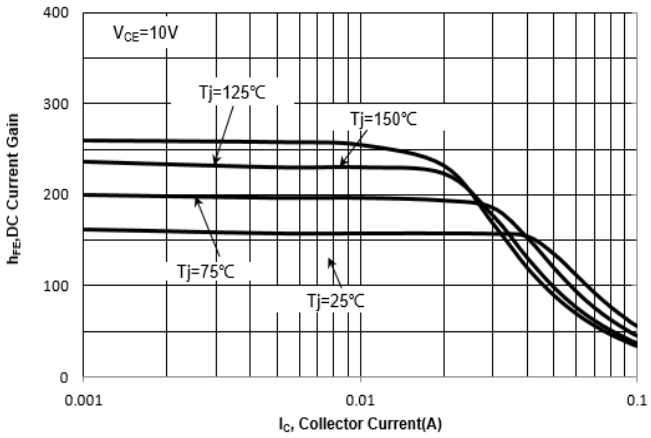
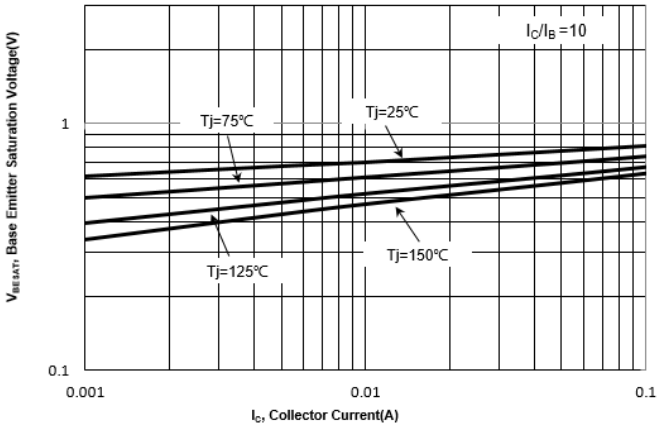


Fig. 4 $V_{BE(sat)}$ vs. Collector Current



Electrical Characteristics Curves

Fig. 5 $V_{CE(sat)}$ vs. Collector Current

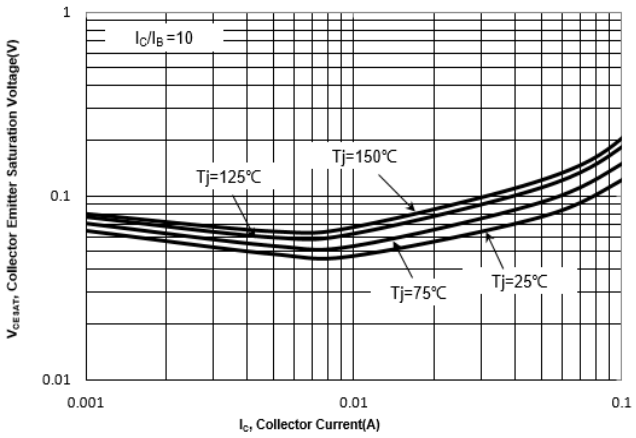


Fig. 6 Output Capacitance

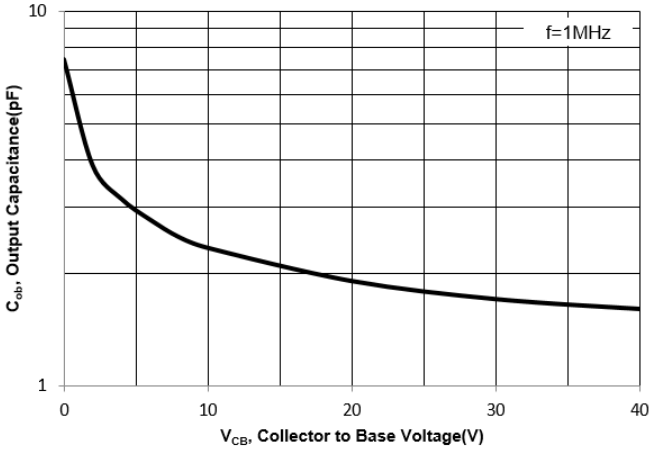
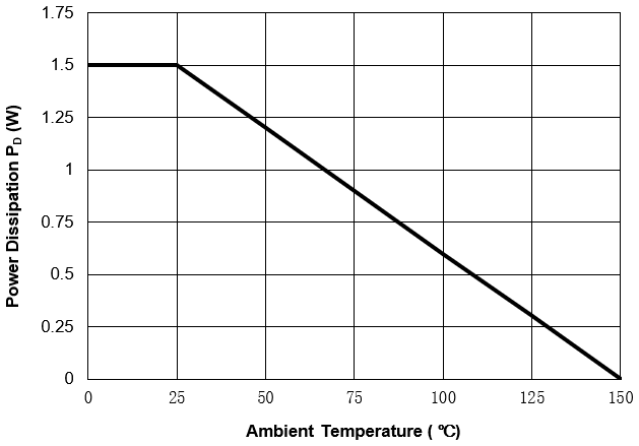


Fig. 7 Power Derating Curve



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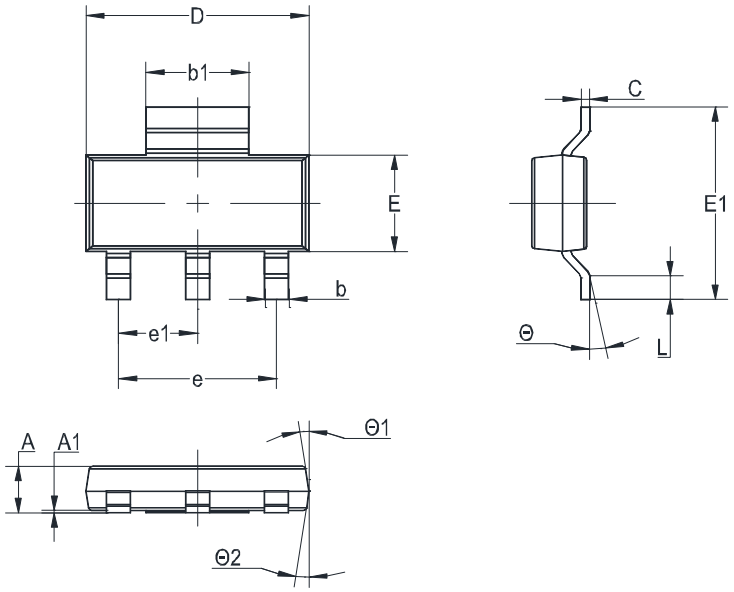
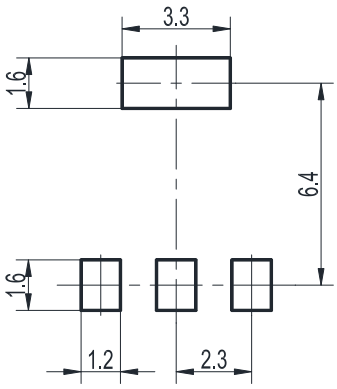
Package Outline (Dimensions in mm) SOT-223



Unit	A	A1	b	b1	C	D	E	E1	e	e1	L	Θ	Θ1	Θ2
mm	1.8 1.5	0.1 MAX	0.8 0.6	3.1 2.9	0.32 0.22	6.7 6.3	3.7 3.3	7.3 6.7	4.6 TYP	2.3 TYP	1.1 0.7	10° 0°	7° 0°	7° 0°

Recommended Soldering Footprint



Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
SOT-223	12	8 ± 0.1	0.315 ± 0.004	330	13	3,000

Marking information

" PZTA42Q " = Part No.

" ****** " = Date Code Marking

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