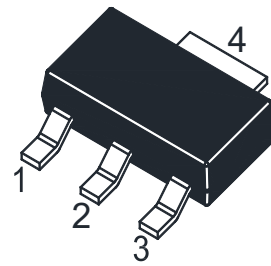


2SB751Q-HAF

PNP Silicon Epitaxial Planar Power Transistor

Features

- High current
- Halogen and Antimony Free(HAF), RoHS compliant



1.Base 2.Collector 3.Emitter 4.Collector
SOT-223 Plastic Package

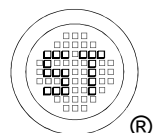
Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CBO}$	80	V
Collector Emitter Voltage	$-V_{CEO}$	60	V
Emitter Base Voltage	$-V_{EBO}$	5	V
Collector Current	$-I_C$	2	A
Power Dissipation	P_D	0.8	W
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 65 to + 150	$^\circ\text{C}$

Thermal Characteristics

Parameter	Symbol	Max.	Unit
Thermal Resistance from Junction to Ambient ¹⁾	$R_{\theta JA}$	156	$^\circ\text{C/W}$

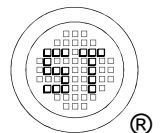
¹⁾ Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.



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Characteristics at $T_a = 25\text{ }^\circ\text{C}$

Parameter	Symbol	Min.	Max.	Unit
DC Current Gain				
at $-V_{CE} = 2\text{ V}$, $-I_C = 50\text{ mA}$	h_{FE}	75	-	-
at $-V_{CE} = 2\text{ V}$, $-I_C = 500\text{ mA}$	h_{FE}	75	-	-
at $-V_{CE} = 2\text{ V}$, $-I_C = 1\text{ A}$	h_{FE}	75	-	-
at $-V_{CE} = 2\text{ V}$, $-I_C = 2\text{ A}$	h_{FE}	40	-	-
Collector Base Breakdown Voltage at $-I_C = 100\text{ }\mu\text{A}$	$-V_{(BR)CBO}$	80	-	V
Collector Emitter Breakdown Voltage at $-I_C = 10\text{ mA}$	$-V_{(BR)CEO}$	60	-	V
Emitter Base Breakdown Voltage at $-I_E = 10\text{ }\mu\text{A}$	$-V_{(BR)EBO}$	5	-	V
Collector Base Cutoff Current at $-V_{CB} = 80\text{ V}$	$-I_{CBO}$	-	100	nA
Emitter Base Cutoff Current at $-V_{EB} = 4\text{ V}$	$-I_{EBO}$	-	100	nA
Collector Emitter Saturation Voltage at $-I_C = 2\text{ A}$, $-I_B = 200\text{ mA}$ at $-I_C = 1\text{ A}$, $-I_B = 100\text{ mA}$	$-V_{CE(sat)}$	-	0.5 0.3	V
Base Emitter Saturation Voltage at $-I_C = 1\text{ A}$, $-I_B = 100\text{ mA}$	$-V_{BE(sat)}$	-	1.2	V
Base Emitter Voltage at $-V_{CE} = 2\text{ V}$, $-I_C = 1\text{ A}$	$-V_{BE(on)}$	-	1	V
Transition Frequency at $-V_{CE} = 5\text{ V}$, $-I_C = 50\text{ mA}$, $f = 100\text{ MHz}$	f_T	75	-	MHz



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Electrical Characteristics Curves

Fig. 1 Output Characteristics Curve

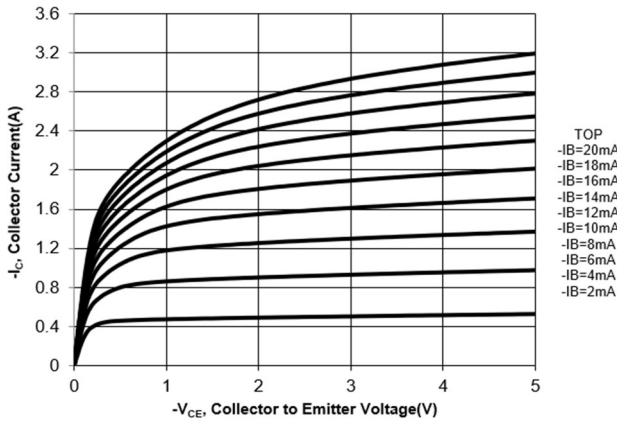


Fig. 2 Collector Current vs. Base to Emitter Voltage

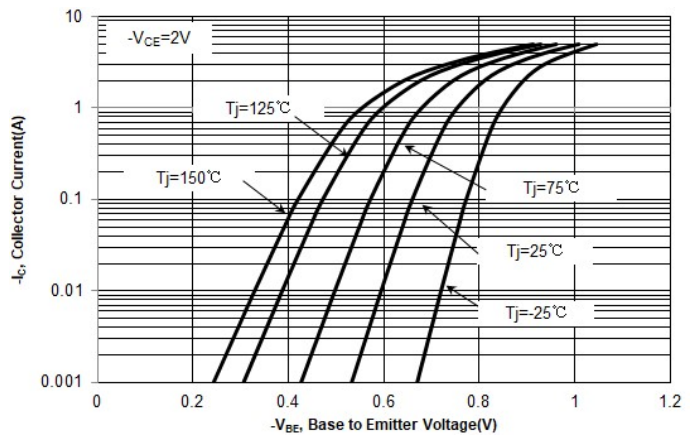


Fig. 3 h_{FE} , DC Current Gain vs. Collector Current

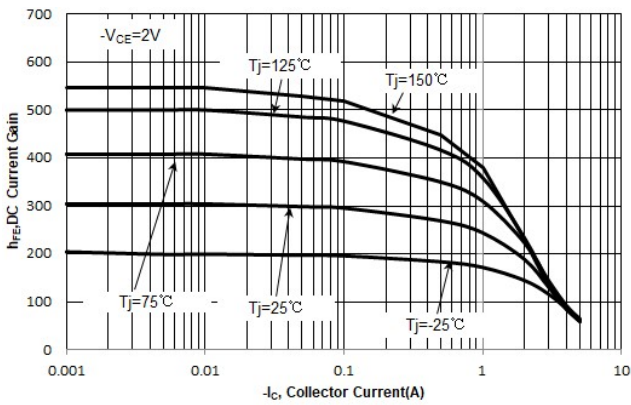


Fig. 4 V_{BESAT} , V_{CESAT} vs. Collector Current

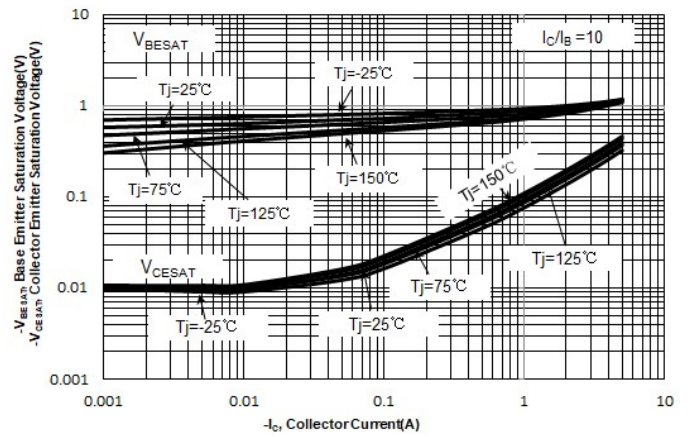


Fig. 5 Junction Capacitance

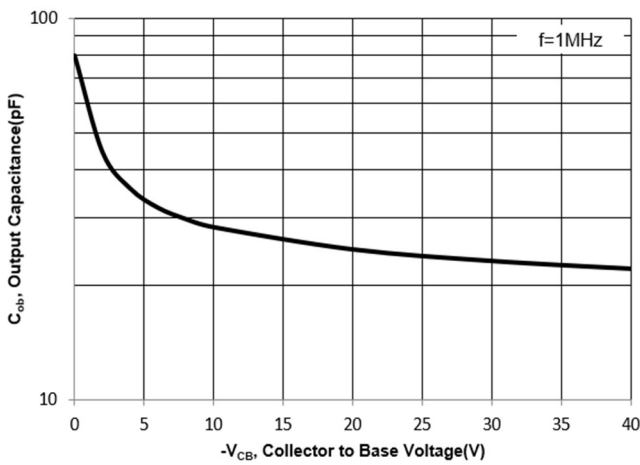
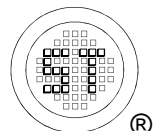
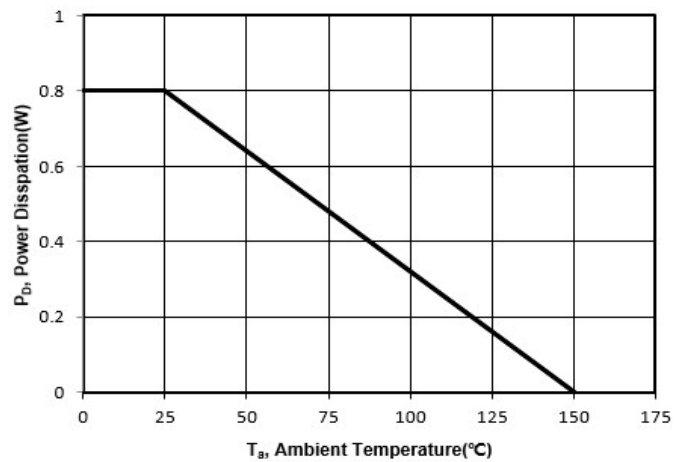


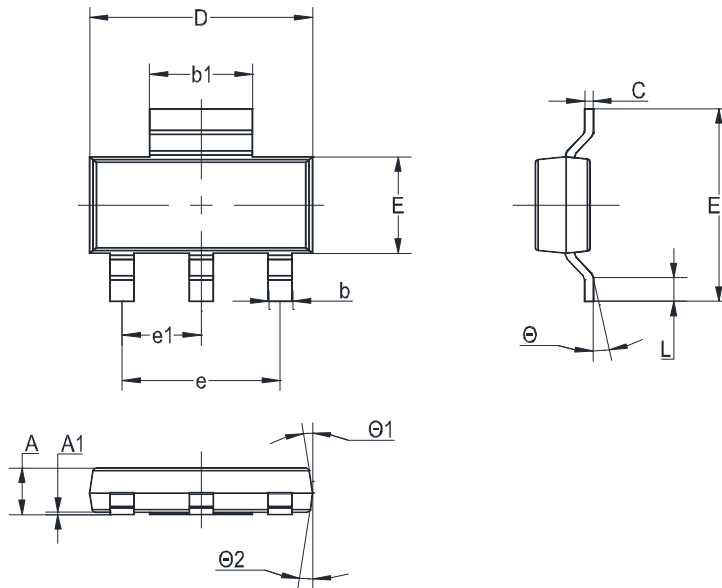
Fig. 6 Power Derating Curve



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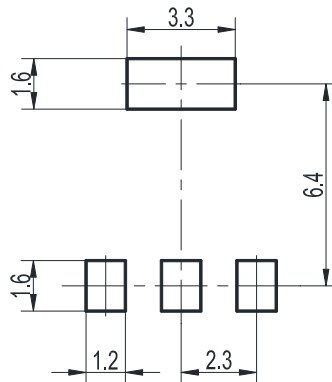
Package Outline (Dimensions in mm)

SOT-223



Unit	A	A1	b	b1	C	D	E	E1	e	e1	L	θ	θ_1	θ_2
mm	1.8	0.1	0.8	3.1	0.32	6.7	3.7	7.3	4.6	2.3	1.1	10°	7°	7°
	1.5	MAX	0.6	2.9	0.22	6.3	3.3	6.7	TYP	TYP	0.7	0°	0°	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

" 2SB751Q " = Part No.

" ***** " = Date Code Marking

Font type: Arial

