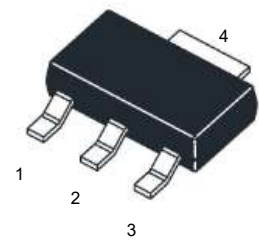


BCP69Q-HAF

PNP Silicon Epitaxial Power Transistor

Features

- Halogen and Antimony Free(HAF), RoHS compliant



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

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

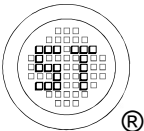
Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CBO}$	32	V
Collector Emitter Voltage	$-V_{CEO}$	20	V
Emitter Base Voltage	$-V_{EBO}$	5	V
Collector Current	$-I_C$	2	A
Peak Collector Current, Pulsed ($t_p \leq 1\text{ms}$)	$-I_{CM}$	3	A
Peak Base Current, Pulsed ($t_p \leq 1\text{ms}$)	$-I_{BM}$	400	mA
Total Power Dissipation	P_{tot}	1 ¹⁾ 2 ²⁾	W
Junction Temperature	T_j	150	$^{\circ}\text{C}$
Storage Temperature Range	T_{stg}	- 65 to + 150	$^{\circ}\text{C}$

Thermal Resistance Ratings

Parameter	Symbol	Max.	Unit
Maximum Junction to Ambient	$R_{\theta JA}$	125 ¹⁾ 62.5 ²⁾	$^{\circ}\text{C/W}$

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

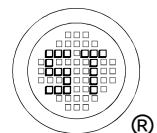
²⁾ Device mounted on FR-4 substrate PC board, 2oz copper, with 1-inch square copper plate



BCP69Q-HAF

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

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain					
at $-V_{CE} = 10\text{ V}$, $-I_C = 5\text{ mA}$	h_{FE}	50	-	-	-
at $-V_{CE} = 1\text{ V}$, $-I_C = 500\text{ mA}$	h_{FE}	100	-	250	-
	h_{FE}	160	-	375	-
at $-V_{CE} = 1\text{ V}$, $-I_C = 1\text{ A}$	h_{FE}	60	-	-	-
at $-V_{CE} = 1\text{ V}$, $-I_C = 2\text{ A}$	h_{FE}	40	-	-	-
Collector Base Cutoff Current					
at $-V_{CB} = 25\text{ V}$	$-I_{CBO}$	-	-	100	nA
at $-V_{CB} = 25\text{ V}$, $T_J = 150^\circ\text{C}$		-	-	10	μA
Emitter Base Cutoff Current					
at $-V_{EB} = 5\text{ V}$	$-I_{EBO}$	-	-	100	nA
Collector Emitter Saturation Voltage					
at $-I_C = 1\text{ A}$, $-I_B = 100\text{ mA}$	$-V_{CE(sat)}$	-	-	0.5	V
at $-I_C = 2\text{ A}$, $-I_B = 200\text{ mA}$		-	-	0.6	
Base Emitter Voltage					
at $-V_{CE} = 10\text{ V}$, $-I_C = 5\text{ mA}$	$-V_{BE}$	-	-	0.7	V
at $-V_{CE} = 1\text{ V}$, $-I_C = 1\text{ A}$		-	-	1	
Transition Frequency					
at $-V_{CE} = 5\text{ V}$, $-I_C = 50\text{ mA}$, $f = 100\text{ MHz}$	f_T	-	140	-	MHz
Collector Capacitance					
at $-V_{CB} = 10\text{ V}$, $f = 1\text{ MHz}$	C_c	-	28	-	pF



Electrical Characteristics Curves

Fig. 1 Output Characteristics Curve

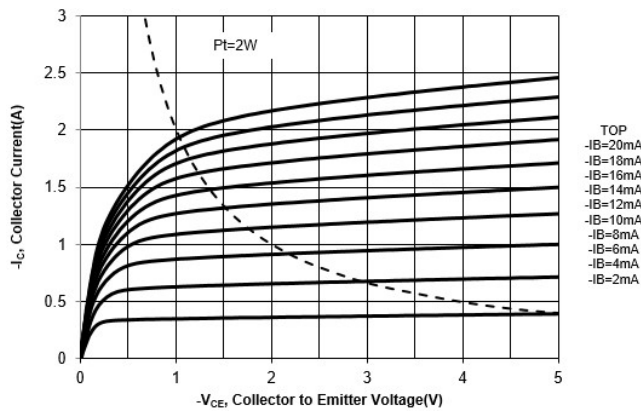


Fig. 2 Collector Current vs. Base to Emitter Voltage

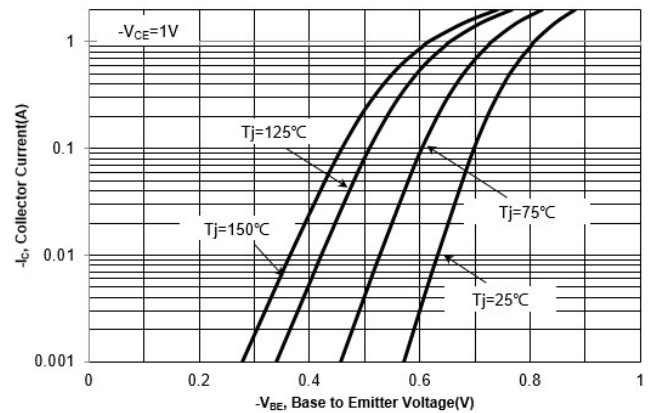


Fig. 3 DC Current Gain vs. Collector Current

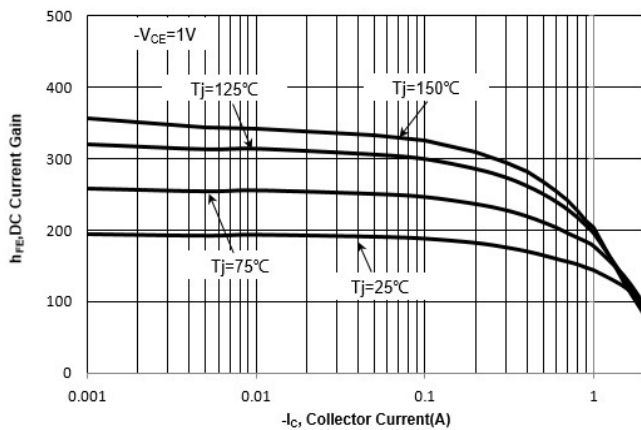


Fig. 4 V_{BESAT} vs. Collector Current

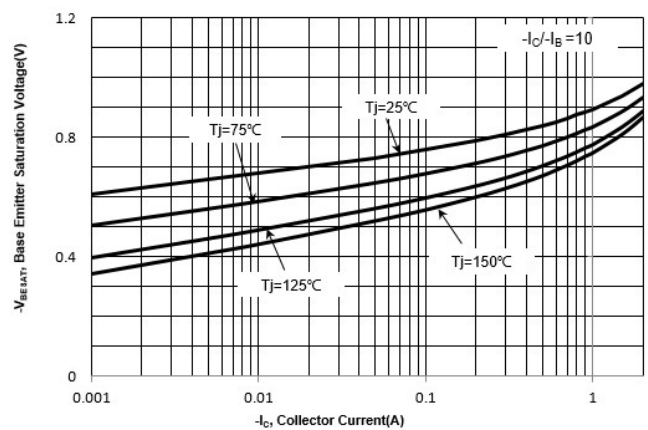


Fig. 5 V_{CESAT} vs. Collector Current

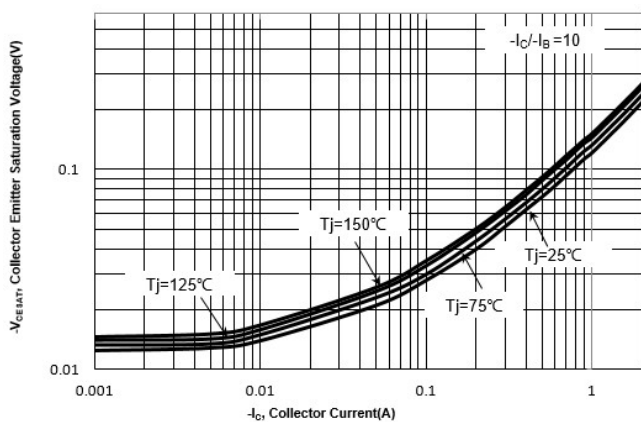
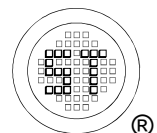
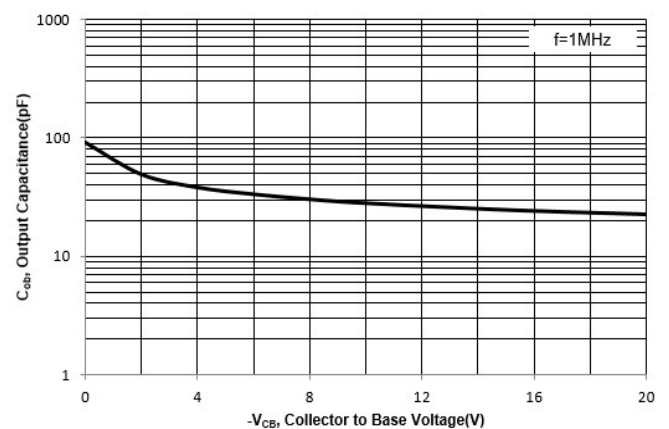


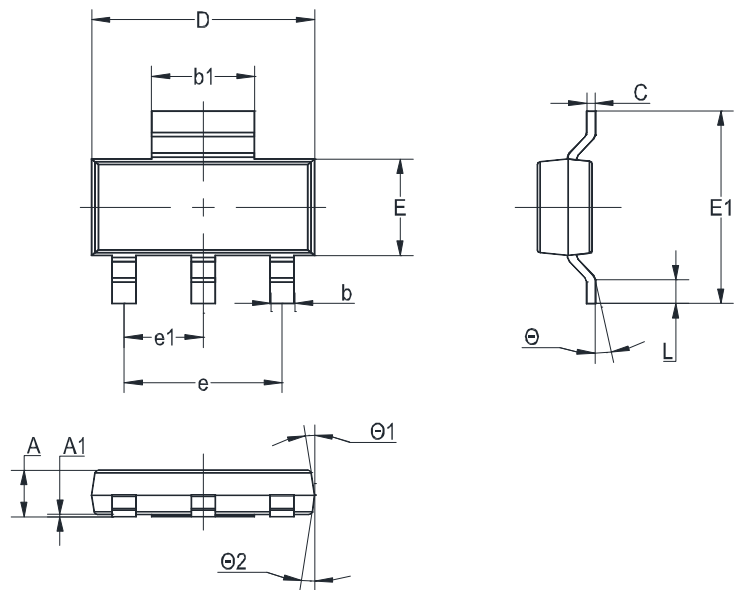
Fig. 6 Output Capacitance



BCP69Q-HAF

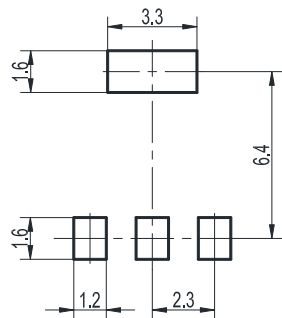
Package Outline (Dimensions in mm)

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

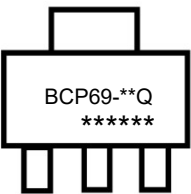
Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
SOT-223	12	8 ± 0.1	0.315 ± 0.004	330	13	3,000

Marking information

" BCP69-**Q " = Part No. (" * " = HFE grouping Code)

" ***** " = Date Code Marking

Font type: Arial



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