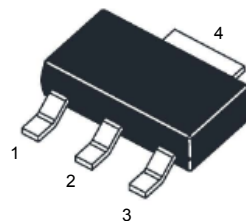


BCX69Q-HAF

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	$-I_C$	1	A
Peak Collector Current ($t_p = 1\text{ms}$)	$-I_{CM}$	2	A
Peak Base Current ($t_p = 1\text{ms}$)	$-I_{BM}$	200	mA
Total Power Dissipation $T_a = 25^\circ\text{C}$	P_{tot}	0.625 ¹⁾ 1 ²⁾ 1.4 ³⁾	W
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 65 to + 150	$^\circ\text{C}$

¹⁾ Device mounted on an FR4 Printed-Circuit Board (PCB), single-sided copper, tin-plated and standard footprint.

²⁾ Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for collector 1 cm².

³⁾ Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for collector 6 cm².

Thermal Resistance Ratings

Parameter	Symbol	Max.	Unit
Maximum Junction to Ambient	$R_{\theta JA}$	200 ¹⁾ 125 ²⁾ 89 ³⁾	$^\circ\text{C}/\text{W}$

¹⁾ Device mounted on an FR4 PCB, single-sided copper, tin-plated and standard footprint.

²⁾ Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for collector 1 cm².

³⁾ Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for collector 6 cm².

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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}	85	-	375	-
at $-V_{CE} = 1\text{ V}$, $-I_C = 1\text{ A}$	h_{FE}	60	-	-	-
at $-V_{CE} = 1\text{ V}$, $-I_C = 500\text{ mA}$	BCX69-16Q h_{FE}	100	-	250	-
at $-V_{CE} = 1\text{ V}$, $-I_C = 500\text{ mA}$	BCX69-25Q h_{FE}	160	-	375	-
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
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

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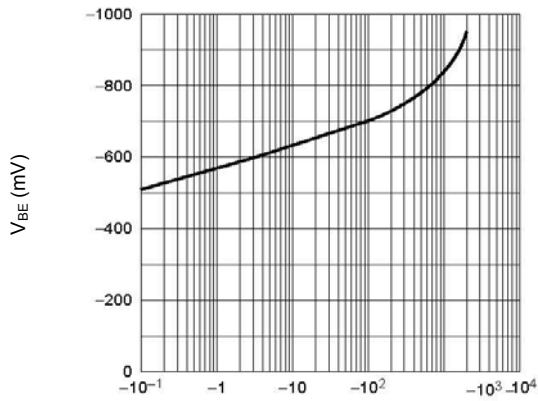


Figure 1. BCX69-16Q: Base-emitter voltage as a function of collector current; typical values
 I_C (mA)
 $V_{CE} = -1$ V

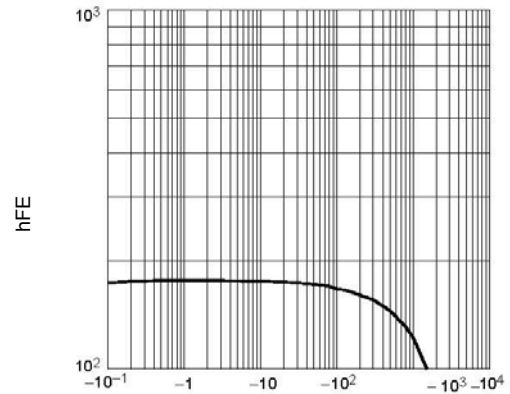


Figure 2. BCX69-16Q: DC current gain as a function of collector current; typical values
 I_C (mA)
 $V_{CE} = -1$ V

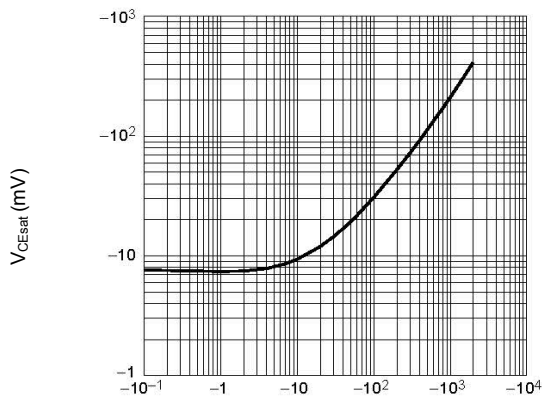


Figure 3. BCX69-16Q: Collector-emitter saturation voltage as a function of collector current; typical values
 I_C (mA)
 $I_C/I_B = 10$

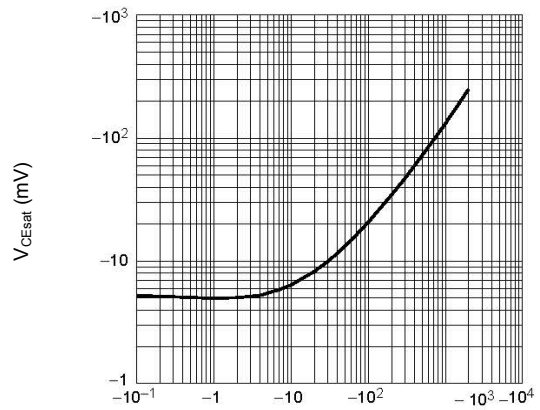


Figure 4. BCX69-25Q: Collector-emitter saturation voltage as a function of collector current; typical values
 I_C (mA)
 $I_C/I_B = 10$

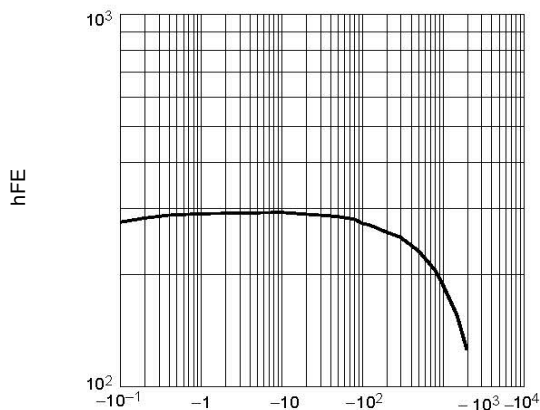


Figure 5. BCX69-25Q: DC current gain as a function of collector current; typical values
 I_C (mA)
 $V_{CE} = -1$ V

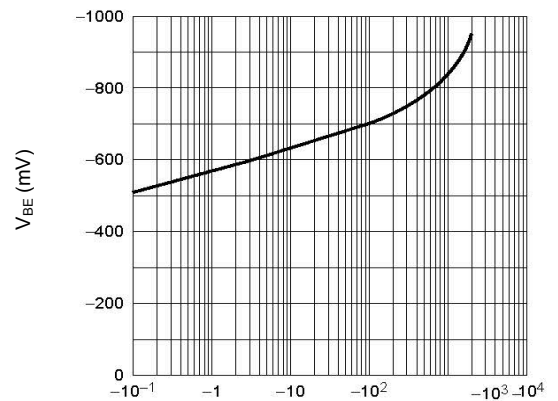
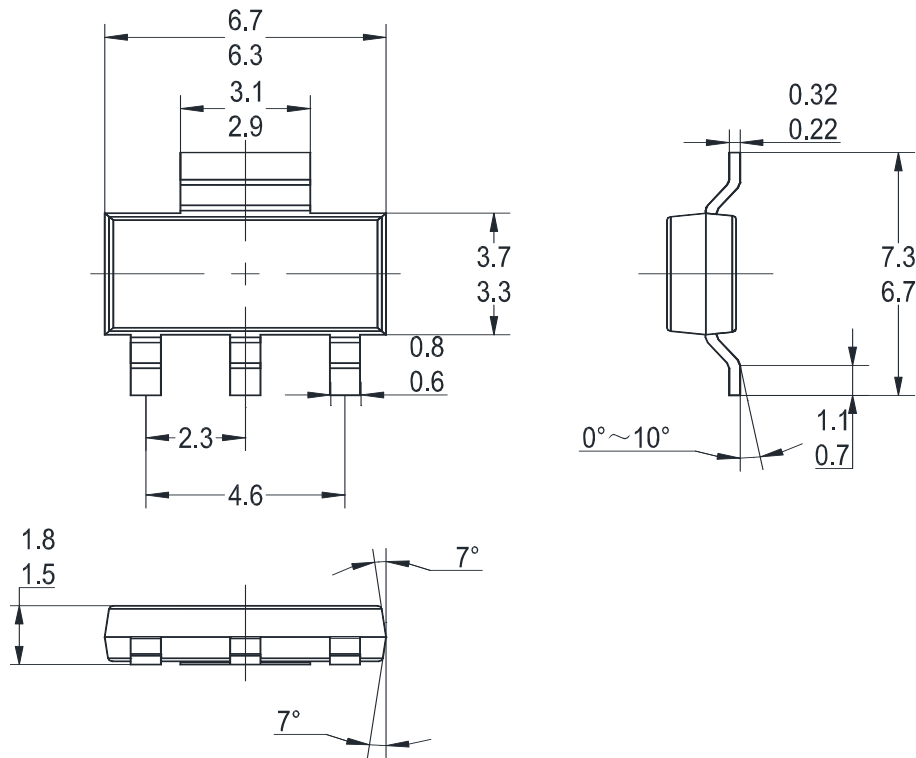


Figure 6. BCX69-25Q: Base-emitter voltage as a function of collector current; typical values
 I_C (mA)
 $V_{CE} = -1$ V

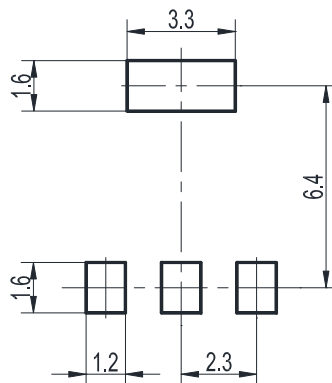
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Package Outline (Dimensions in mm)

SOT-223



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

" BCX69*Q " = Part No. (" * "=HFE grouping Code)

" ***** " = Date Code Marking

Font type: Arial

