

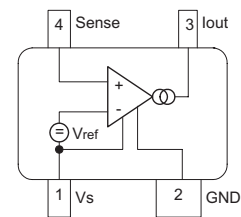
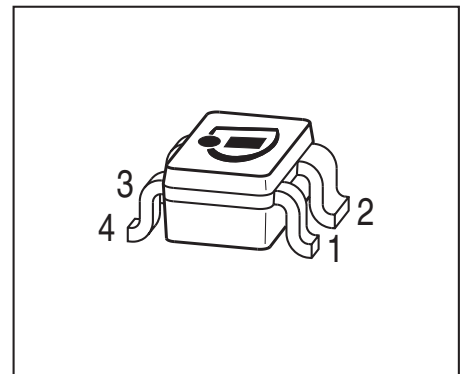
Active Bias Controller

Characteristics

- Supplies stable bias current from 1.8V operating voltage on
- Low voltage drop:
110mV for 10mA collector current

Application notes

- Stabilizing bias current of NPN transistors and FET's from 100μA to 20mA
- Ideal supplement for Sieget and other transistors



- Pb-free (RoHS compliant) package ¹⁾
- Qualified according AEC Q101



Type	Marking	Pin Configuration				Package
BCR410W	W8s	1= Vs	2=GND	3=Iout	4=Sense	SOT343

Maximum Ratings

Parameter	Symbol	Value	Unit
Supply voltage	V_S	18	V
Output current	I_{out}	0.5	mA
Total power dissipation, $T_S = 110\text{ °C}$	P_{tot}	100	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-65 ... 150	

Thermal Resistance

Junction - soldering point ²⁾	R_{thJS}	≤ 470	K/W
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¹Pb-containing package may be available upon special request

²For calculation of R_{thJA} please refer to Application Note Thermal Resistance

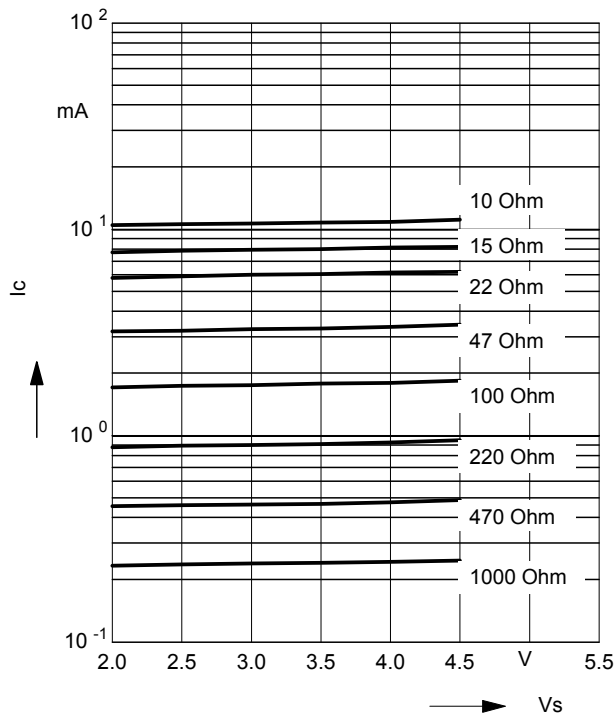
Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Additional current consumption $V_S = 3\text{ V}$	I_0	-	200	400	μA
DC Characteristics with stabilized NPN-Transistors					
Lowest sufficient battery voltage	$V_{S\text{min}}$	-	1.8	-	V
Voltage drop $I_C = 10\text{ mA}$	V_{drop}	-	110	-	mV
Change of I_C versus h_{FE} $h_{\text{FE}} = 50$	$\Delta I_C / I_C$	-	tbd	-	$\Delta h_{\text{FE}} / h_{\text{FE}}$
Change of I_C versus V_S $V_S = 3\text{ V}$	$\Delta I_C / I_C$	-	2	-	%/V
Change of I_C versus T_A	$\Delta I_C / I_C$	-	0.15	-	%/K

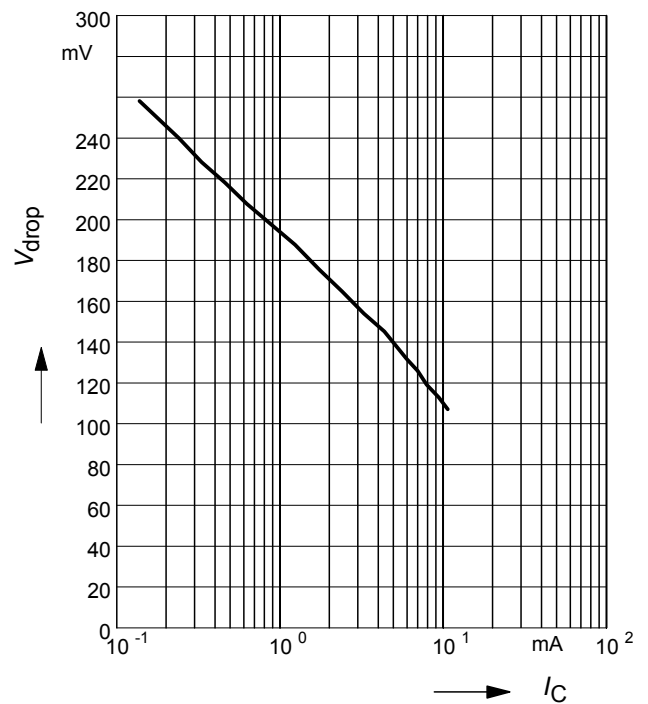
Collector Current $I_C = f(V_S)$

of stabilized NPN Transistor

Parameter $R_{ext.} (\Omega)$

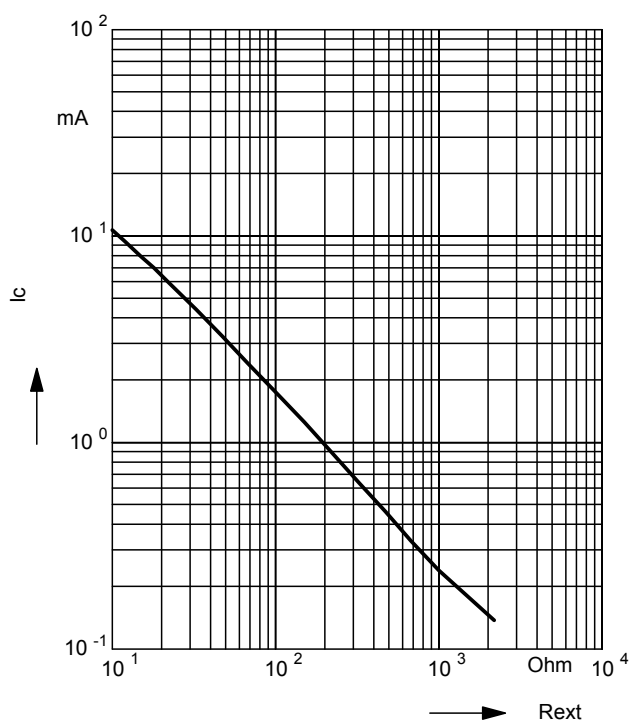


Voltage drop $V_{drop} = f(I_C)$

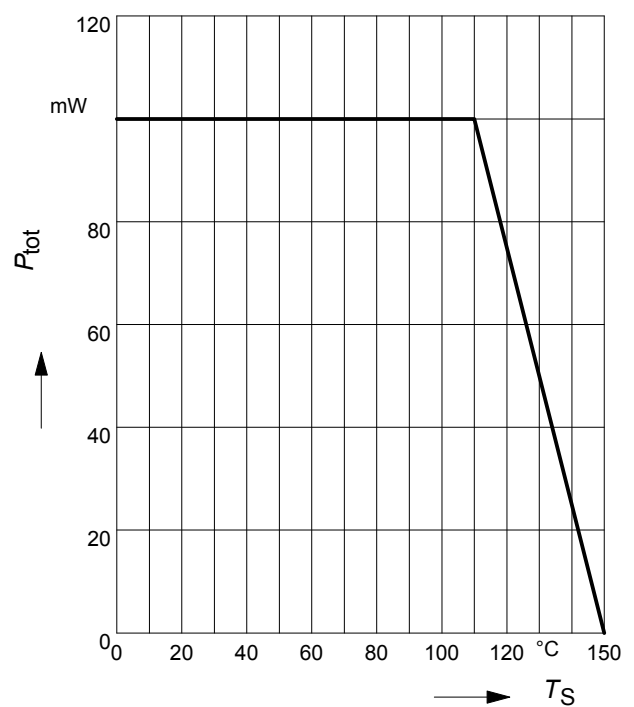


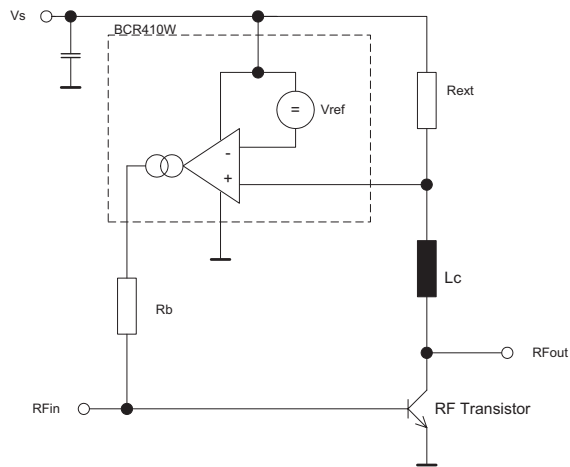
Collector current $I_C = f(R_{ext.})$

of stabilized NPN Transistor



Total power dissipation $P_{tot} = f(T_S)$



Application Circuit:


Technical drawing of a mechanical part with dimensions: 0.6, 0.8, 1.15, 0.9, and 1.6.

Pin 1

Manufacturer

2005, June
Date code (YM)

BGA420
Type code

The technical drawing shows two views of a mechanical component:

- Top View:** A rectangular plate with overall dimensions of 8 mm by 4 mm. It features three circular holes spaced at 2.15 mm intervals. The distance from the left edge to the first hole center is 0.75 mm, and from the last hole center to the right edge is 0.75 mm. The distance between the bottom edge and the hole centers is 2.3 mm.
- Side View:** Shows the profile of the component with a total thickness of 1.1 mm and a fillet radius of 0.2 mm at the corners.

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