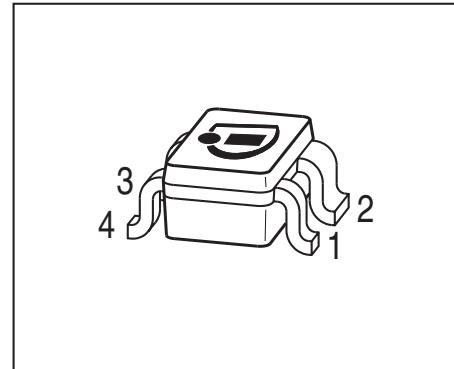


Active Bias Controller

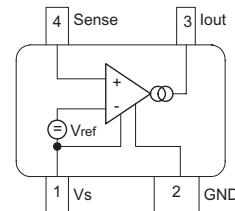
Characteristics

- 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 100 μ A to 20mA
- Ideal supplement for Sieget and other transistors
- Pb-free (RoHS compliant) package¹⁾
- Qualified according AEC Q101



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

Maximum Ratings

Parameter	Symbol	Value	Unit
Supply voltage	V_S	18	V
Output current	I_{out}	0.5	mA
Total power dissipation, $T_S = 110$ °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

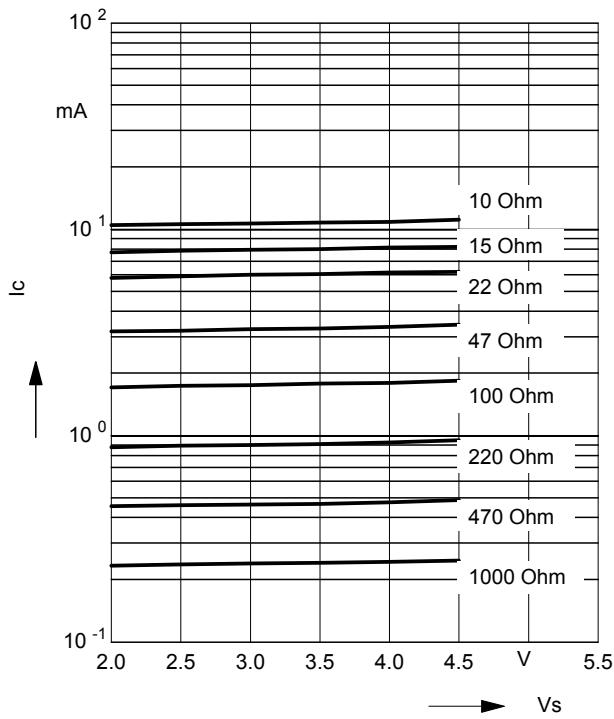
Additional current consumption $V_S = 3 \text{ V}$	I_0	-	200	400	μA
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DC Characteristics with stabilized NPN-Transistors

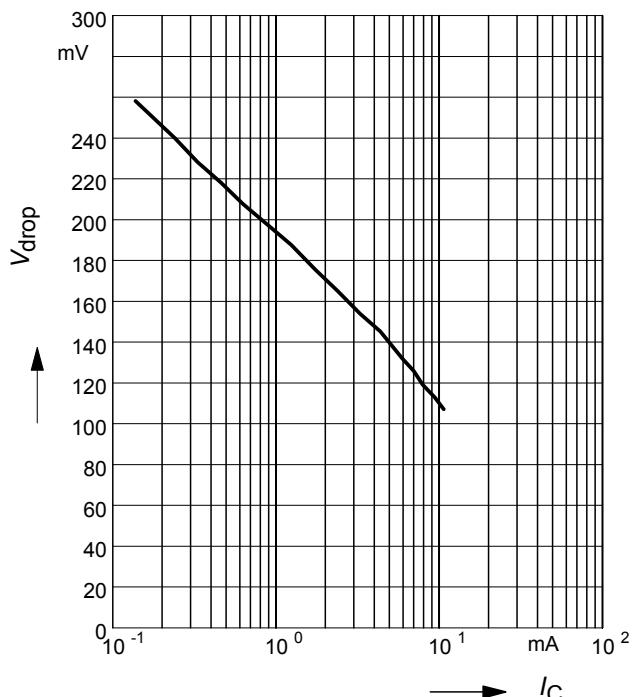
Lowest sufficient battery voltage	$V_{S\min}$	-	1.8	-	V
Voltage drop $I_C = 10 \text{ mA}$	V_{drop}	-	110	-	mV
Change of I_C versus h_{FE} $h_{FE} = 50$	$\Delta I_C/I_C$	-	tbd	-	$\Delta h_{FE} / h_{FE}$
Change of I_C versus V_S $V_S = 3 \text{ V}$	$\Delta I_C/I_C$	-	2	-	%/V
Change of I_C versus T_A	$\Delta I_C/I_C$	-	0.15	-	%/K

Collector Current $I_C = f(V_S)$
of stabilized NPN Transistor

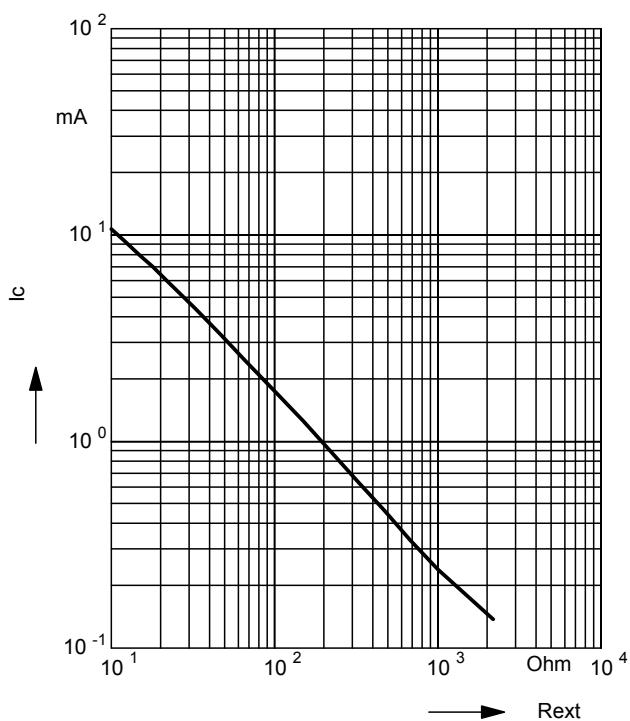
Parameter $R_{\text{ext.}} (\Omega)$



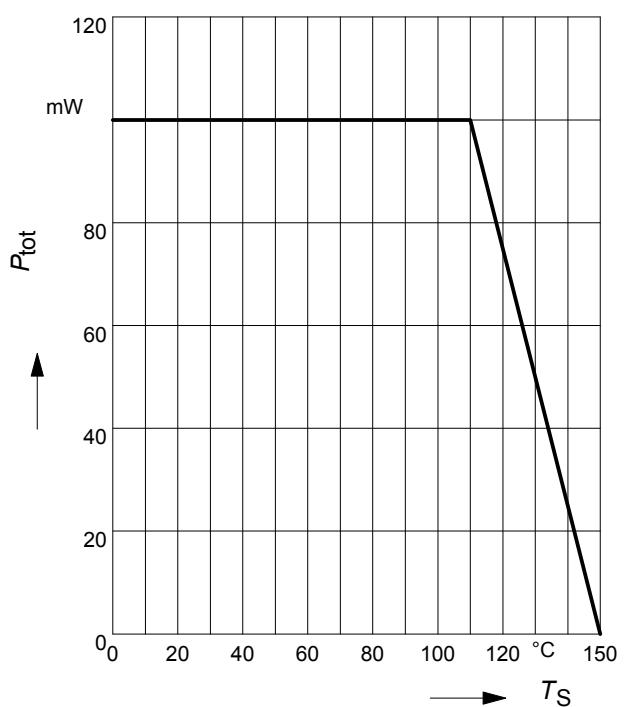
Voltage drop $V_{\text{drop}} = f(I_C)$

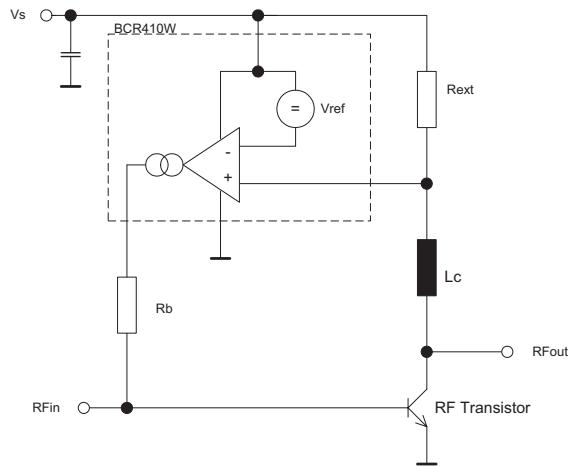


Collector current $I_C = f(R_{\text{ext.}})$
of stabilized NPN Transistor

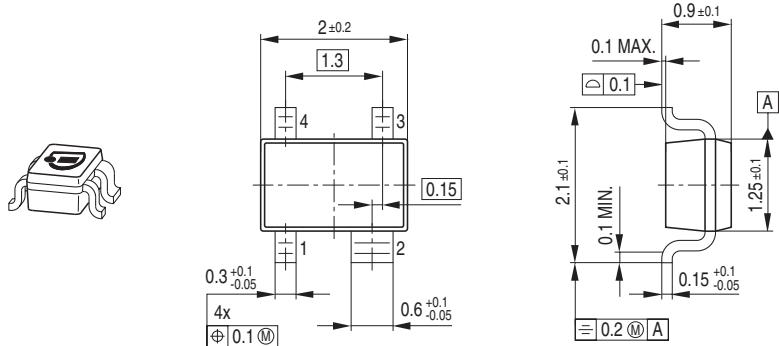


Total power dissipation $P_{\text{tot}} = f(T_S)$

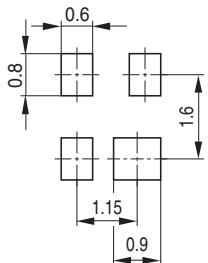


Application Circuit:


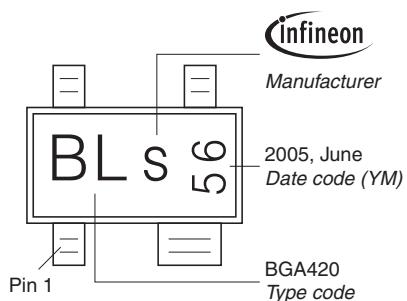
Package Outline



Foot Print



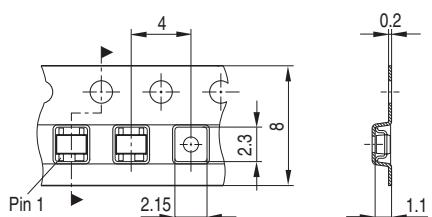
Marking Layout (Example)



Standard Packing

Reel ø180 mm = 3.000 Pieces/Reel

Reel ø330 mm = 10.000 Pieces/Reel



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