

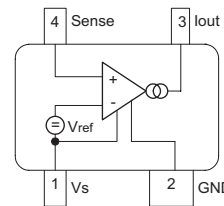
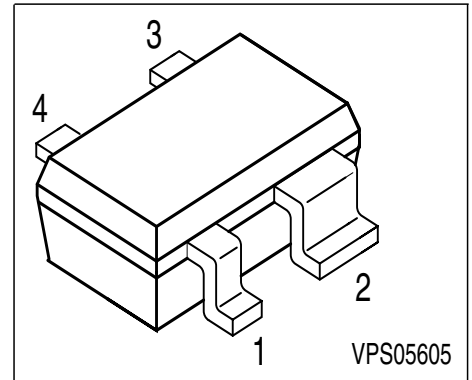
Active Bias Controller

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



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 ¹⁾	R_{thJS}	≤ 470	K/W
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¹⁾For calculation of R_{thJA} please refer to Application Note Thermal Resistance

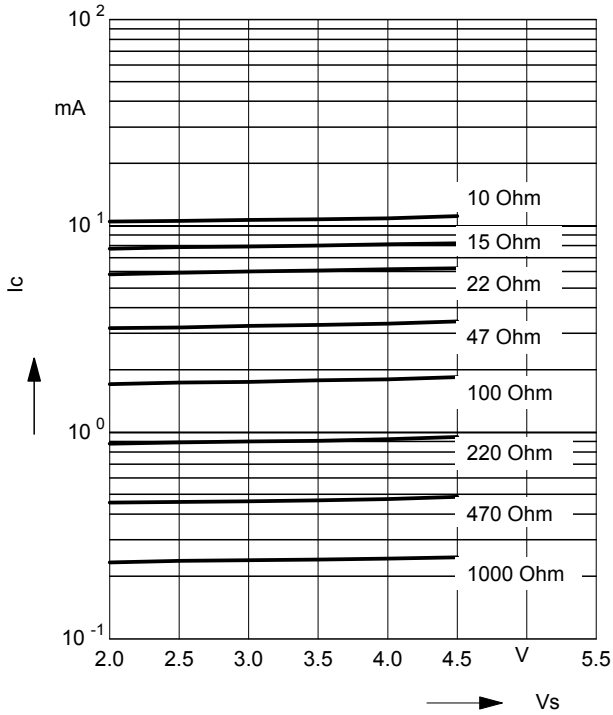
Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified

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} $h_{FE} = 50$	$\Delta I_C / I_C$	-	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

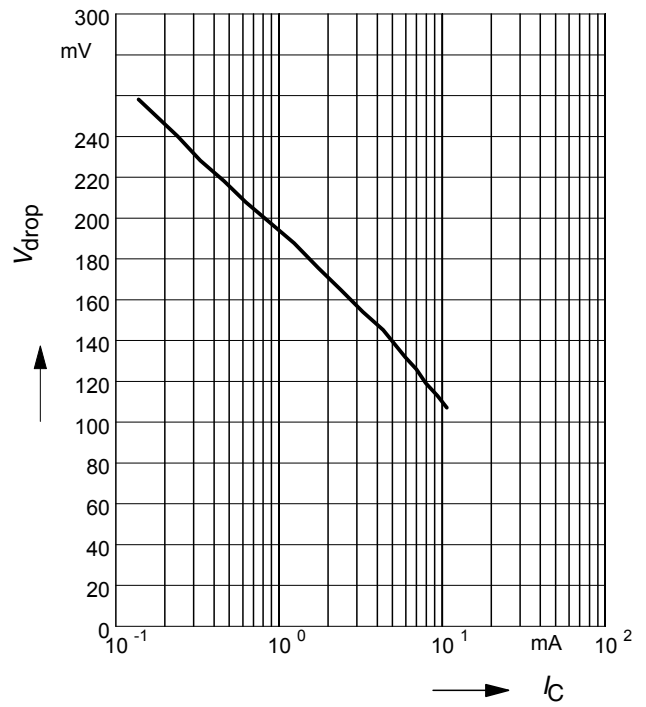
Collector Current $I_C = f(V_S)$

of stabilized NPN Transistor

Parameter $R_{ext.}$ (Ω)

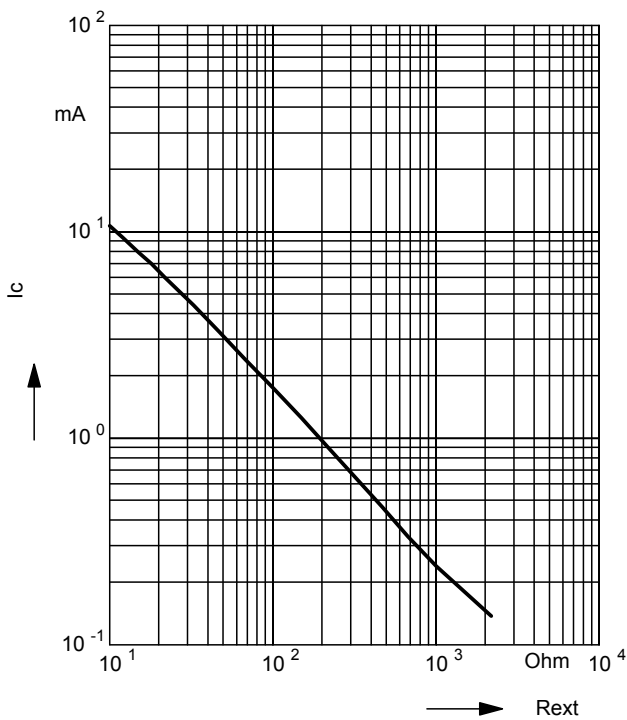


Voltage drop $V_{drop} = f(I_C)$

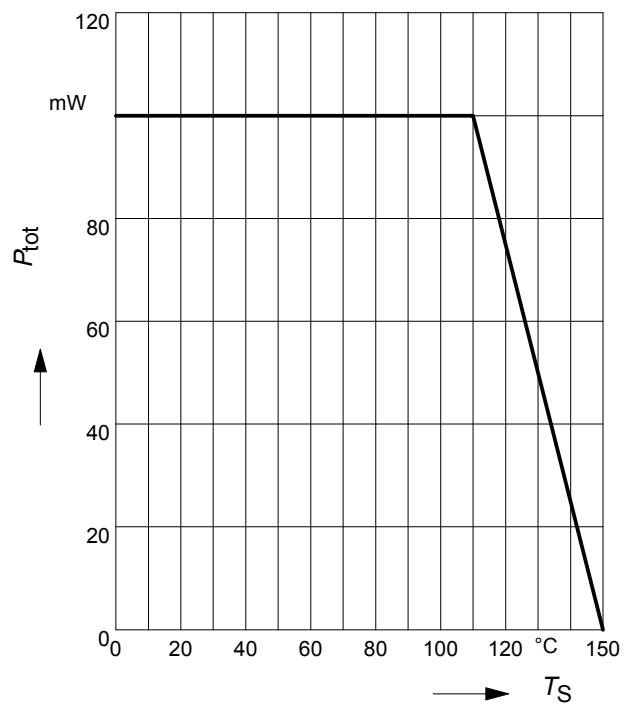


Collector current $I_C = f(R_{ext.})$

of stabilized NPN Transistor



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



Application Circuit:

