

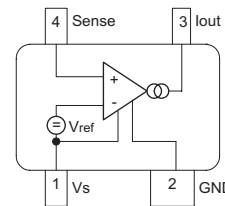
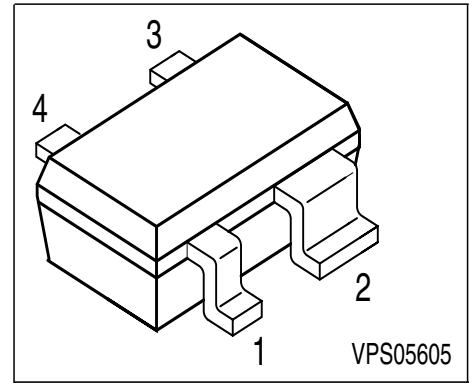
**Active Bias Controller**

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

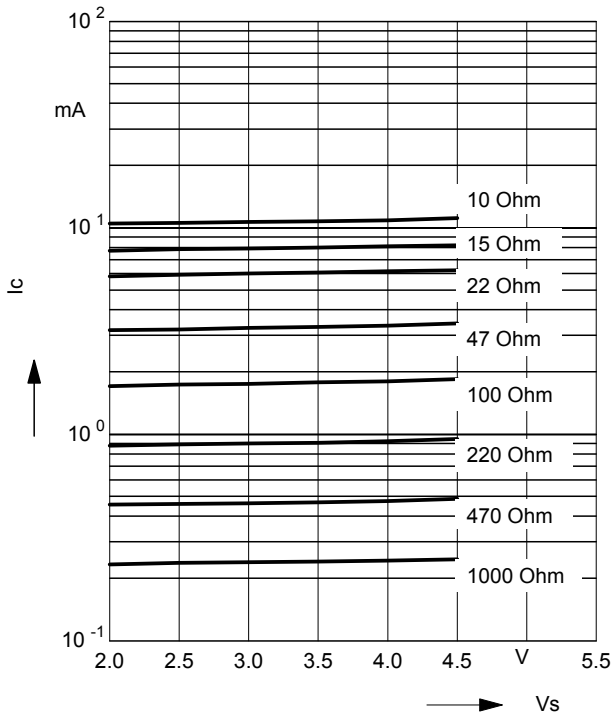
**Electrical Characteristics** at  $T_A = 25^\circ\text{C}$ , unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>DC Characteristics</b>					
Additional current consumption $V_S = 3\text{ V}$	$I_0$	-	200	400	$\mu\text{A}$
<b>DC Characteristics with stabilized NPN-Transistors</b>					
Lowest sufficient battery voltage	$V_{S\text{min}}$	-	1.8	-	V
Voltage drop $I_C = 10\text{ mA}$	$V_{\text{drop}}$	-	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

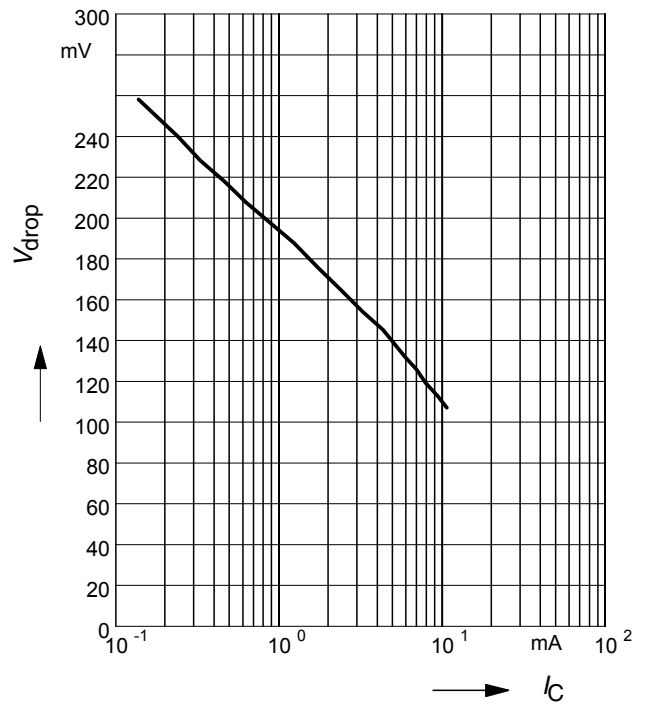
**Collector Current  $I_C = f(V_S)$**

of stabilized NPN Transistor

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

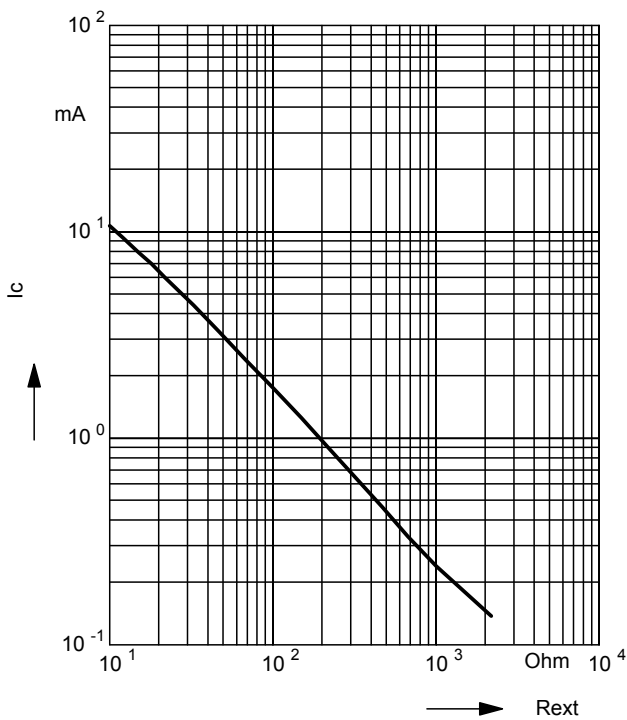


**Voltage drop  $V_{drop} = f(I_C)$**

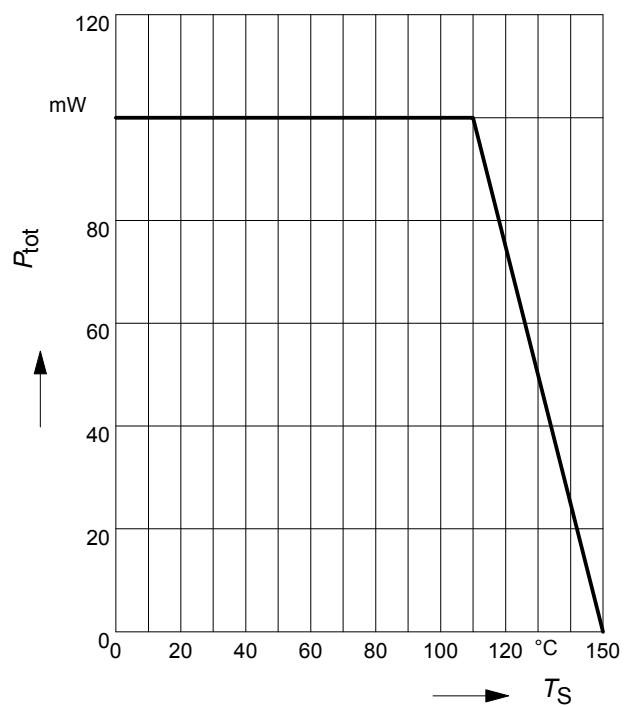


**Collector current  $I_C = f(R_{ext.})$**

of stabilized NPN Transistor



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



**Application Circuit:**

