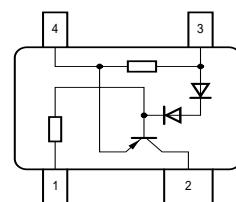
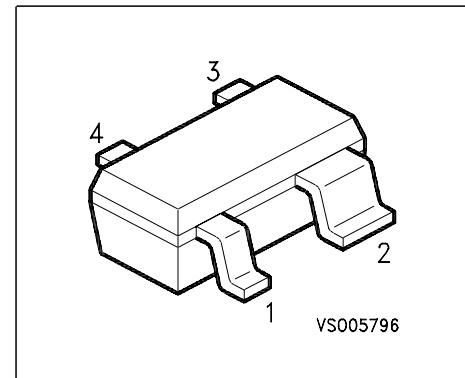


## LED Driver

- Supplies stable bias current even at low battery voltage
- Low voltage drop of 0.75V
- Ideal for stabilizing bias current of LEDs
- Negative temperature coefficient protects LEDs against thermal overload



EHA07188

Type	Marking	Pin Configuration				Package
BCR401R	W5s	1 = GND	2 = $I_{out}$	3 = $V_S$	4 = $R_{ext}$	SOT143R

## Maximum Ratings

Parameter	Symbol	Value	Unit
Source voltage	$V_S$	18	V
Output current	$I_{out}$	60	mA
Output voltage	$V_{out}$	16	V
Reverse voltage between all terminals	$V_R$	0.5	
Total power dissipation, $T_S = 87^\circ C$	$P_{tot}$	330	mW
Junction temperature	$T_j$	150	$^\circ C$
Storage temperature	$T_{stg}$	-65 ... 150	

## Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point <sup>1)</sup>	$R_{thJS}$	190	K/W

<sup>1</sup>For calculation of  $R_{thJA}$  please refer to Application Note Thermal Resistance

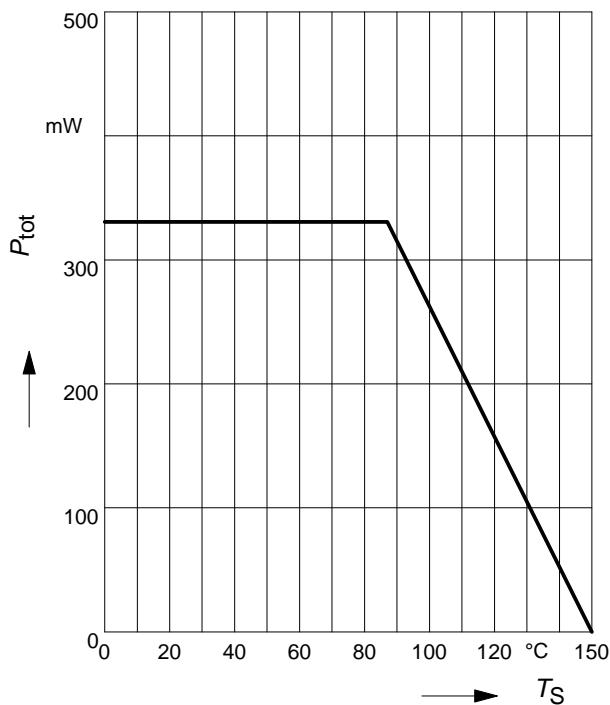
**Electrical Characteristics at  $T_A=25^\circ\text{C}$ , unless otherwise specified**

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>Characteristics</b>					
Supply current $V_S = 10 \text{ V}$	$I_S$	350	440	540	$\mu\text{A}$
Output current $V_S = 10 \text{ V}, V_{out} = 7.6 \text{ V}$	$I_{out}$	9	10	11	mA

**DC Characteristics with stabilized LED load**

Lowest sufficient battery voltage overhead $I_{out} > 8 \text{ mA}$	$V_{Smin}$	-	1.2	-	V
Voltage drop ( $V_S - V_{CE}$ ) $I_{out} = 20 \text{ mA}$	$V_{drop}$	-	0.75	-	
Output current change versus $T_A$ $V_S = 10 \text{ V}$	$\Delta I_{out}/I_{out}$	-	-0.3	-	%/K
Output current change versus $V_S$ $V_S = 10 \text{ V}$	$\Delta I_{out}/I_{out}$	-	2	-	%/V

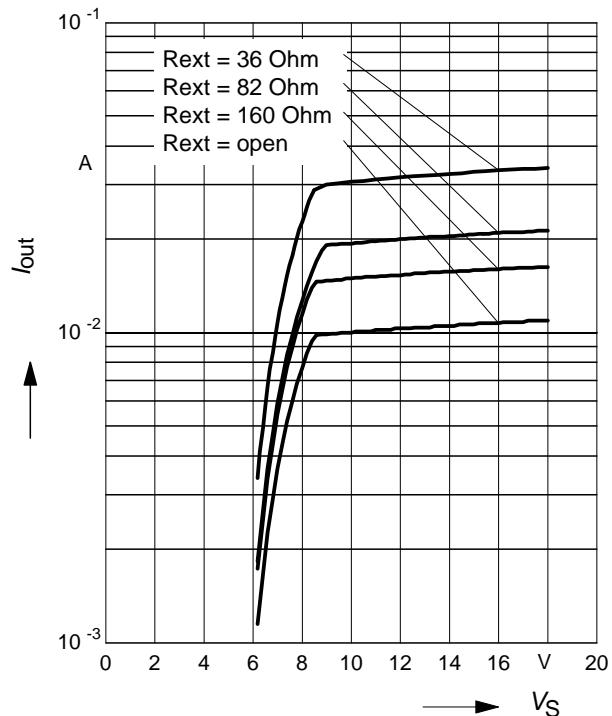
**Total power dissipation  $P_{\text{tot}} = f(T_S)$**



**Output current versus supply voltage**

$I_{\text{out}} = f(V_S); R_{\text{ext}} = \text{Parameter}$

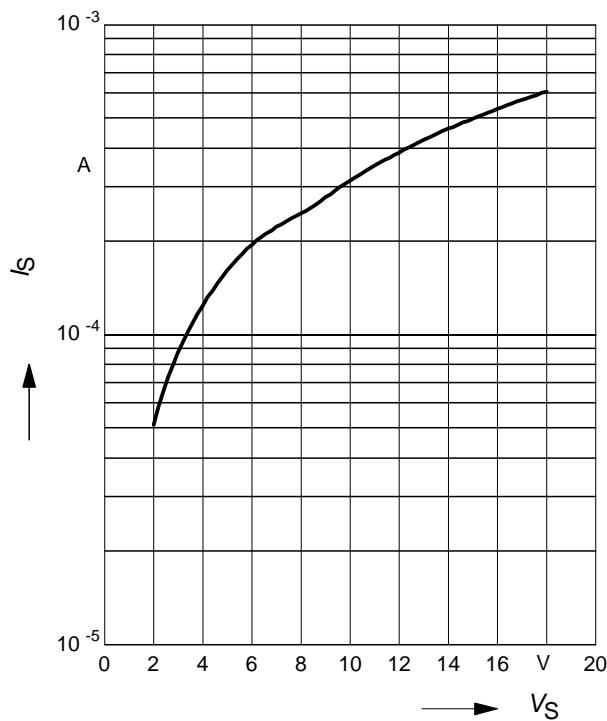
Load: two LEDs with  $V_F = 3.8V$  in series



**Supply current versus supply voltage**

$I_S = f(V_S)$

Load: two LEDs with  $V_F = 3.8V$  in series



**Application Circuit:**

