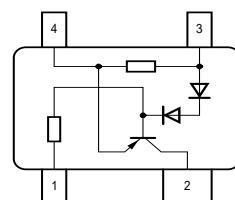
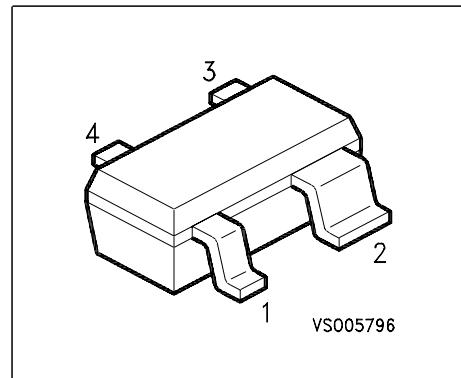


LED Driver

- 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
BCR402R	W6s	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, $T_S = 87^\circ\text{C}$	P_{tot}	330	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-65 ... 150	

Thermal Resistance

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

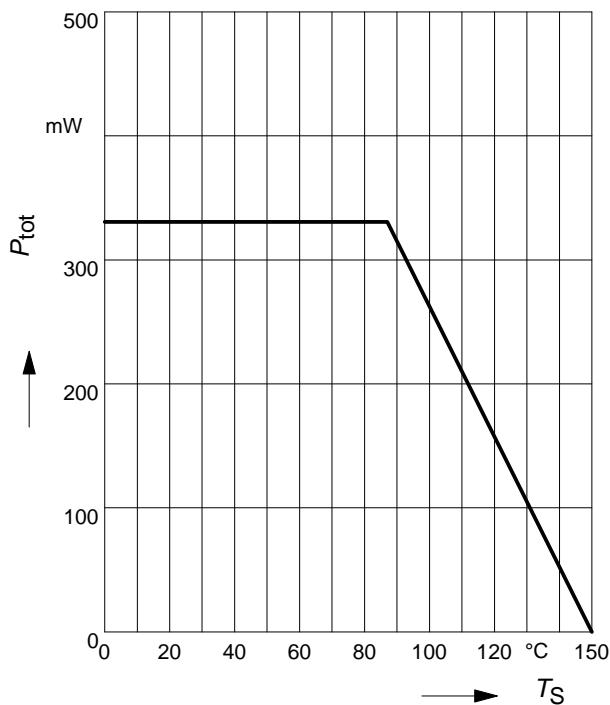
¹⁾For calculation of R_{thJA} please refer to Application Note Thermal Resistance

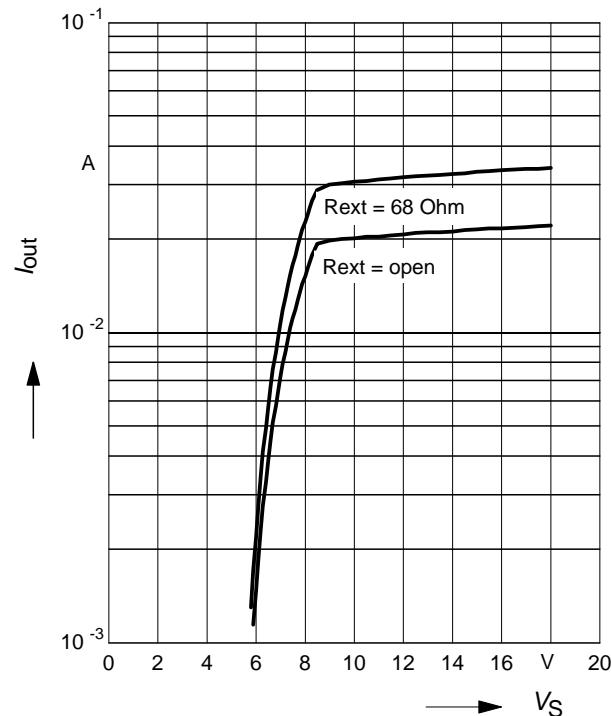
Electrical Characteristics at $T_A=25^\circ\text{C}$, unless otherwise specified

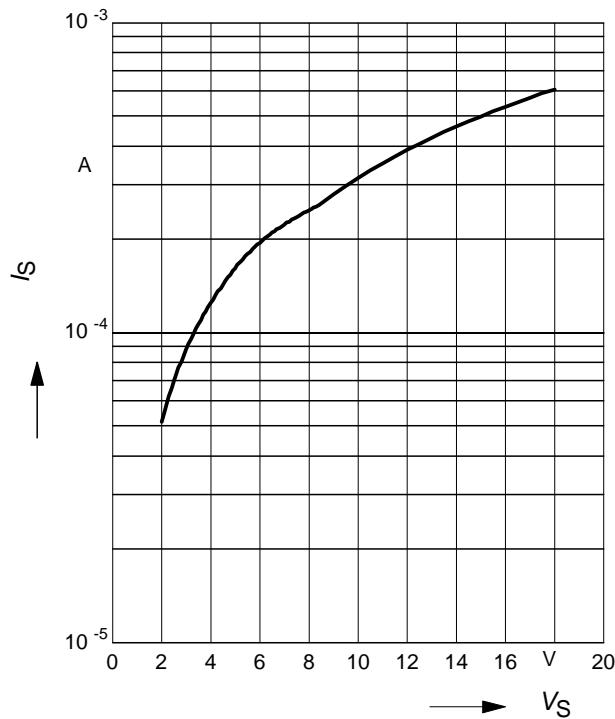
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Characteristics					
Supply current $V_S = 10 \text{ V}$	I_S	350	440	540	μA
Output current $V_S = 10 \text{ V}, V_{out} = 7.6 \text{ V}$	I_{out}	18	20	22	mA

DC Characteristics with stabilized LED load

Lowest sufficient battery voltage overhead $I_{out} > 18\text{mA}$	V_{Smin}	-	1.4	-	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:
