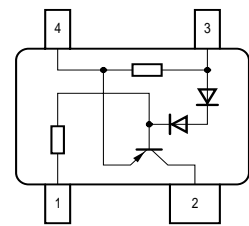
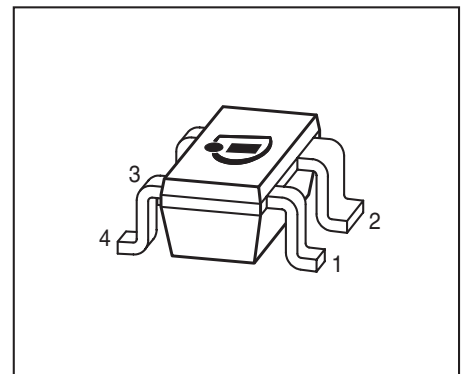


**LED Driver**

- Supplies stable bias current even at low battery voltage
- Suitable for PWM control up to 100kHz
- Ideal for stabilizing bias current of LEDs
- Negative temperature coefficient protects LEDs against thermal overload
- Pb-free (RoHS compliant) package<sup>1)</sup>
- Qualified according AEC Q101


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, $T_S = 75\text{ °C}$	$P_{tot}$	330	mW
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-65 ... 150	

**Thermal Resistance**

Parameter	Symbol	Value	Unit
Junction - soldering point <sup>2)</sup>	$R_{thJS}$	225	K/W

<sup>1</sup>Pb-containing package may be available upon special request

<sup>2</sup>For calculation of  $R_{thJA}$  please refer to Application Note Thermal Resistance

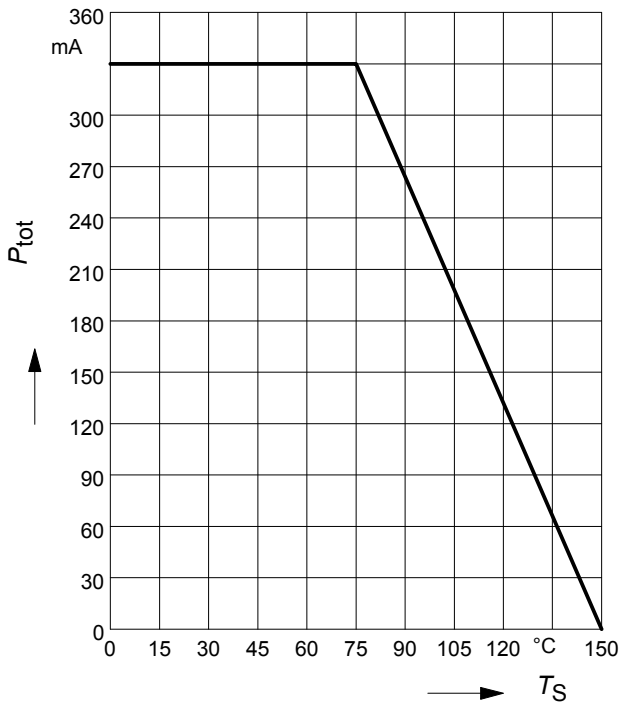
**Electrical Characteristics at  $T_A=25^\circ\text{C}$ , unless otherwise specified**

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 $V_S = 10\text{ V}, V_{\text{out}} = 7.6\text{ V}$	$I_{\text{out}}$	9	10	11	$\text{mA}$

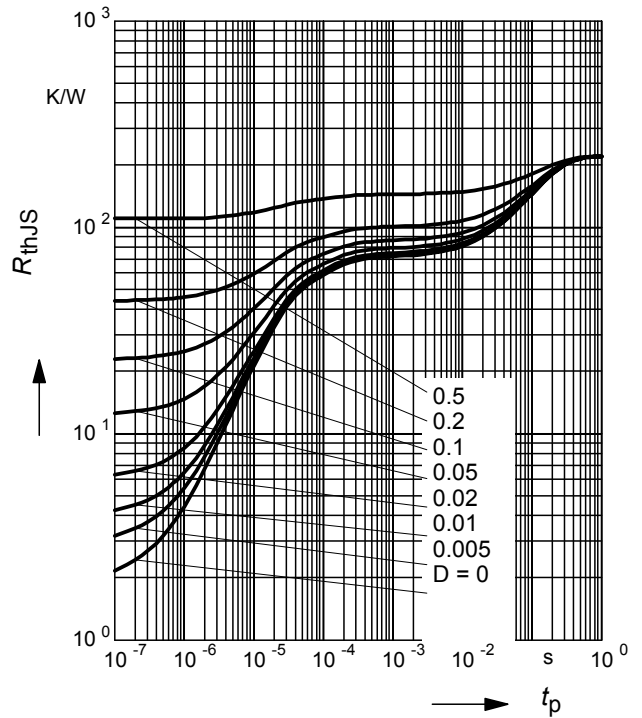
**DC Characteristics with stabilized LED load**

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

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

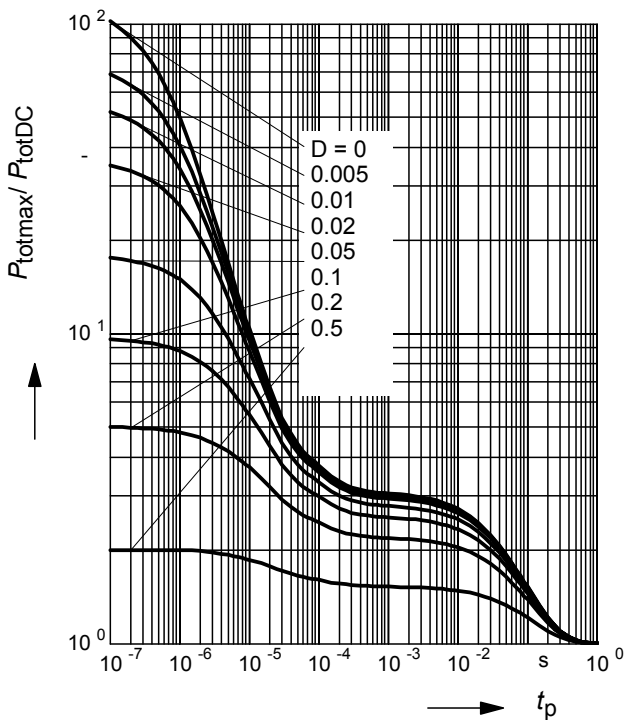


**Permissible Pulse Load  $R_{thJS} = f(t_p)$**



**Permissible Pulse Load**

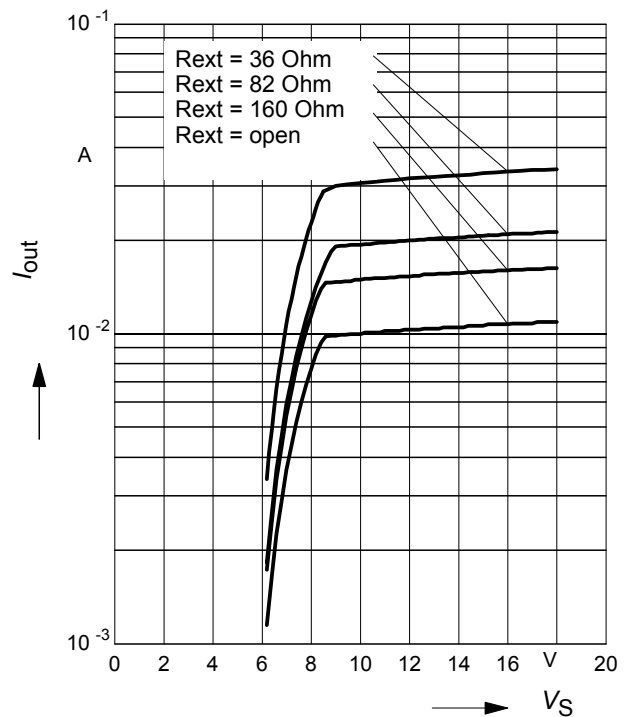
$P_{totmax} / P_{totDC} = f(t_p)$



**Output current versus supply voltage**

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

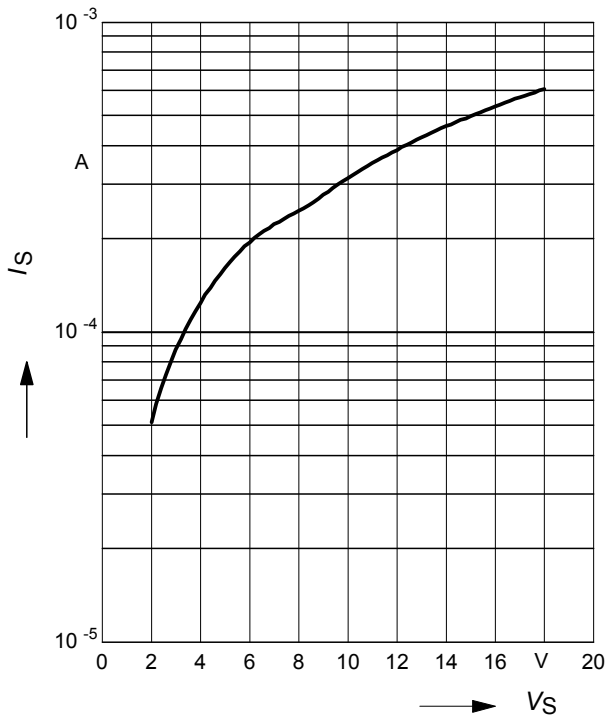
Load: two LEDs with  $V_F = 3.8V$  in series



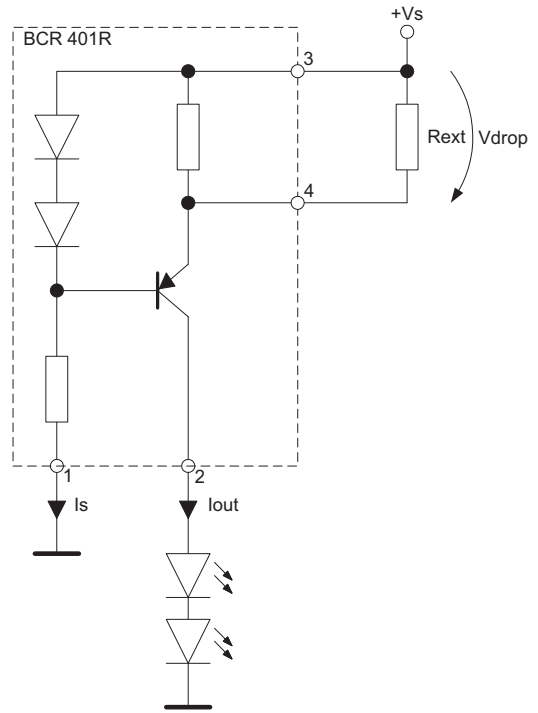
**Supply current versus supply voltage**

$$I_S = f(V_S)$$

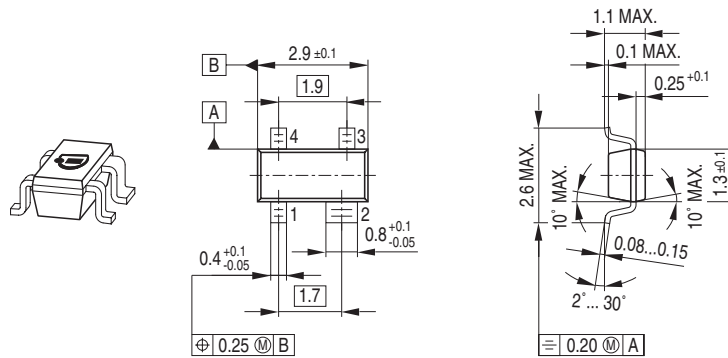
Load: two LEDs with  $V_F = 3.8V$  in series



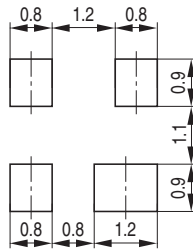
**Application Circuit:**



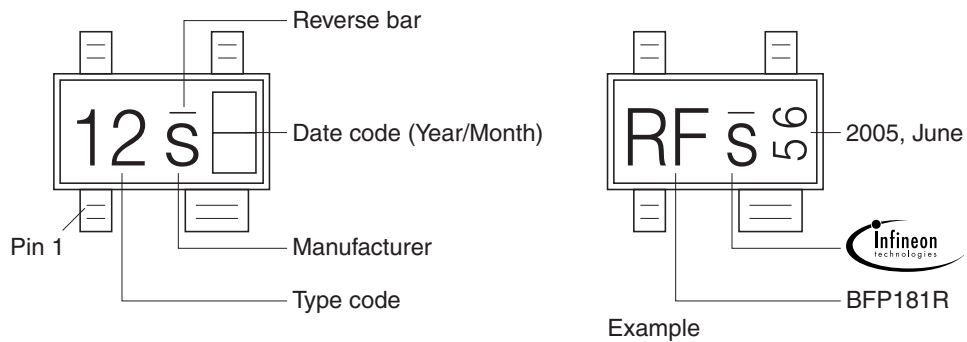
## Package Outline



## Foot Print

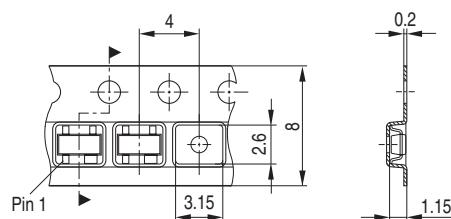


## Marking Layout



## Standard Packing

Reel  $\varnothing$ 180 mm = 3.000 Pieces/Reel  
 Reel  $\varnothing$ 330 mm = 10.000 Pieces/Reel



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