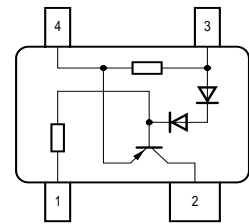
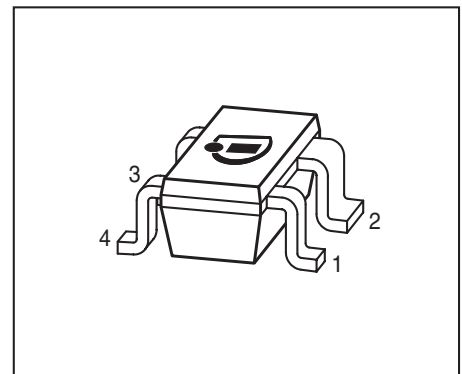


LED Driver

- 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) package¹⁾
- 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 ²⁾	R_{thJS}	225	K/W

¹Pb-containing package may be available upon special request

²For calculation of R_{thJA} please refer to Application Note Thermal Resistance

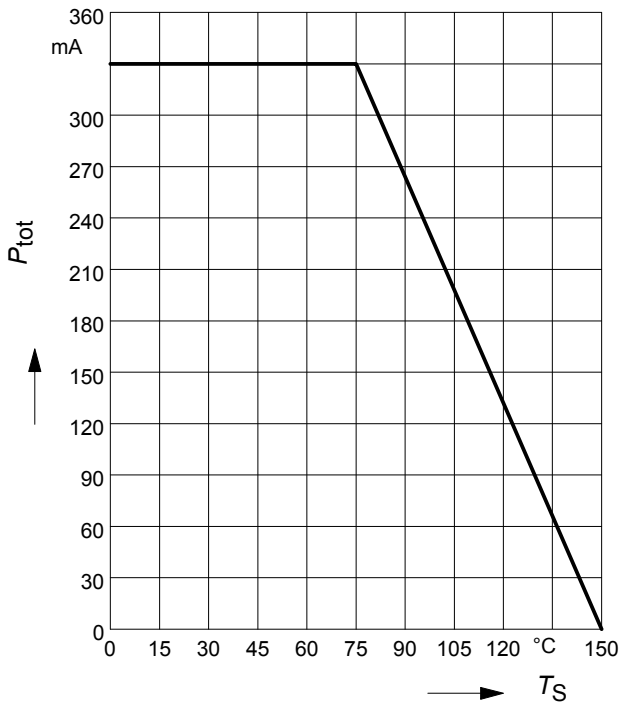
Electrical Characteristics at $T_A=25^\circ\text{C}$, unless otherwise specified

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

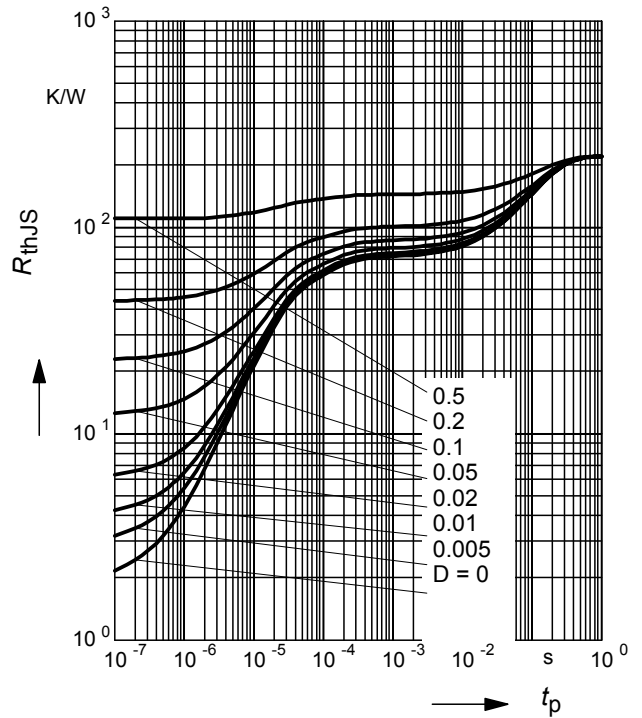
DC Characteristics with stabilized LED load

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_{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 $P_{tot} = f(T_S)$

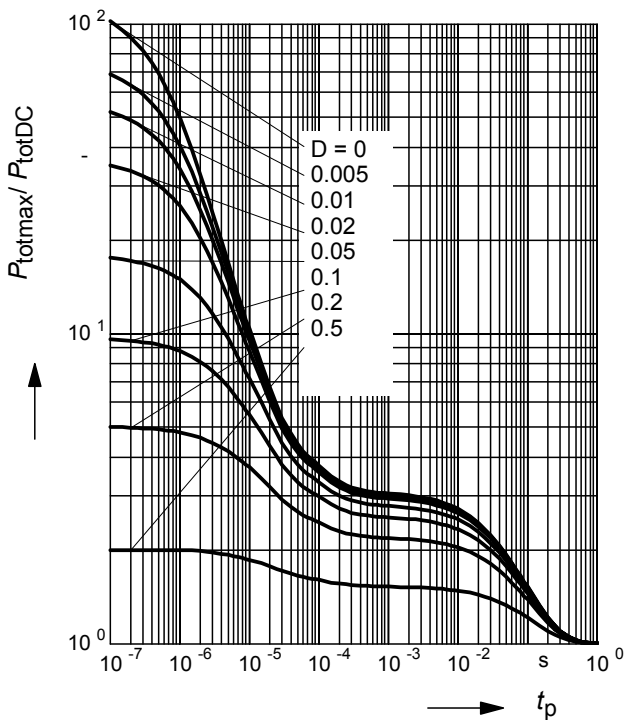


Permissible Pulse Load $R_{thJS} = f(t_p)$



Permissible Pulse Load

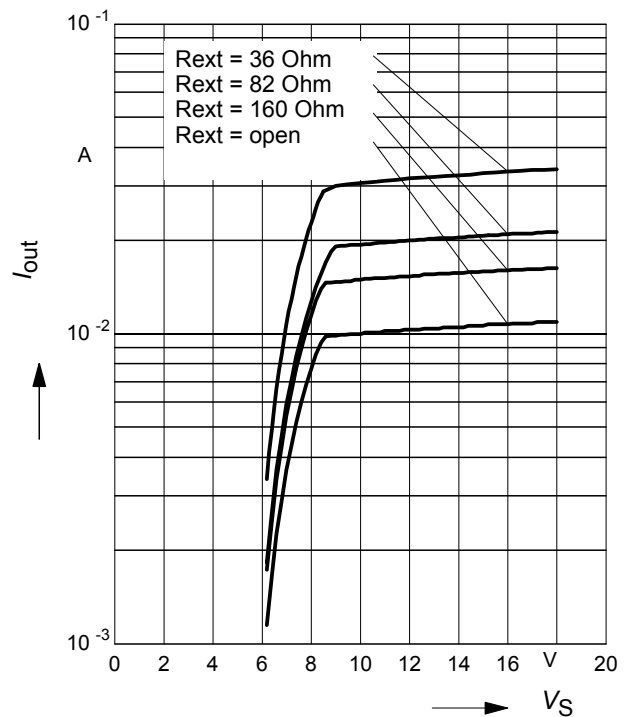
$P_{totmax} / P_{totDC} = f(t_p)$



Output current versus supply voltage

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

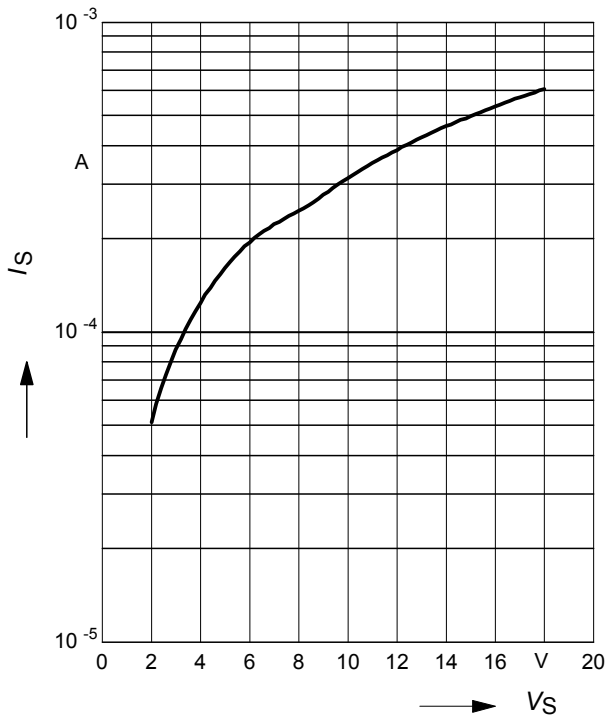
Load: two LEDs with $V_F = 3.8V$ in series



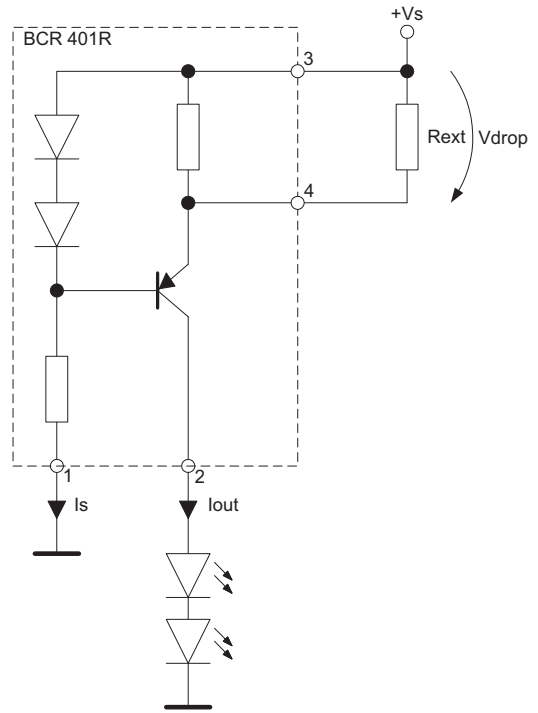
Supply current versus supply voltage

$$I_S = f(V_S)$$

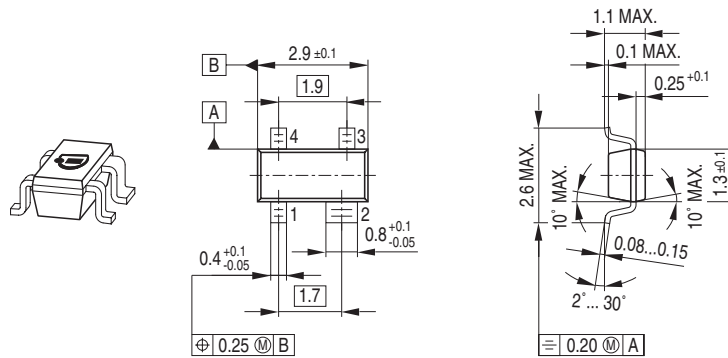
Load: two LEDs with $V_F = 3.8V$ in series



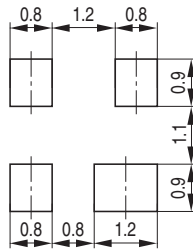
Application Circuit:



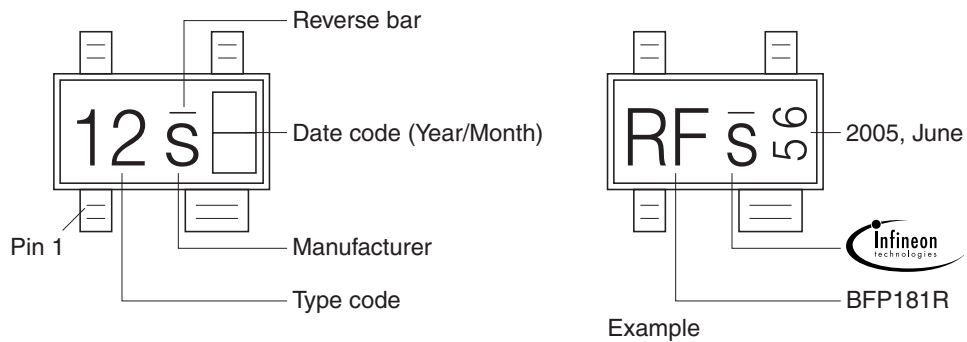
Package Outline



Foot Print

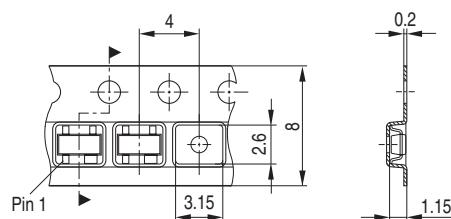


Marking Layout



Standard Packing

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



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