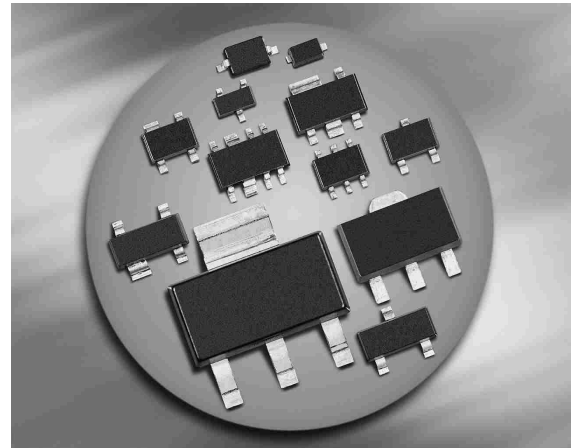




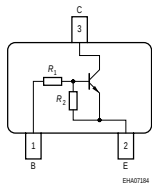
THE DATASHEET OF BCR523U E6327

NPN Silicon Digital Transistors

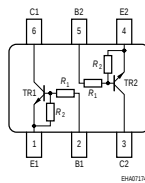
- Switching circuit, inverter circuit, driver circuit
- Built in bias resistor ($R_1 = 1\text{ k}\Omega$, $R_2 = 10\text{ k}\Omega$)
- BCR523U: Two (galvanic) internal isolated transistors with good matching in one package
- Pb-free (RoHS compliant) package
- Qualified according AEC Q101



BCR523



BCR523U



Type	Marking	Pin Configuration						Package
BCR523	XGs	1=B	2=E	3=C	-	-	-	SOT23
BCR523U	XGs	1=E1	2=B1	3=C2	4=E2	5=B2	6=C1	SC74

Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-emitter voltage	V_{CEO}	50	V
Collector-base voltage	V_{CBO}	50	
Input forward voltage	$V_{i(fwd)}$	12	
Input reverse voltage	$V_{i(rev)}$	5	
Collector current	I_C	500	mA
Total power dissipation-	P_{tot}		mW
$T_S \leq 79\text{ }^\circ\text{C}$, BCR523		330	
$T_S \leq 115\text{ }^\circ\text{C}$, BCR523U		330	
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}		K/W
BCR523		≤ 215	
BCR523U		≤ 105	

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	

DC Characteristics

Collector-emitter breakdown voltage $I_C = 100 \mu\text{A}$, $I_B = 0$	$V_{(BR)CEO}$	50	-	-	V
Collector-base breakdown voltage $I_C = 10 \mu\text{A}$, $I_E = 0$	$V_{(BR)CBO}$	50	-	-	
Collector-base cutoff current $V_{CB} = 50 \text{ V}$, $I_E = 0$	I_{CBO}	-	-	100	nA
Emitter-base cutoff current $V_{EB} = 5 \text{ V}$, $I_C = 0$	I_{EBO}	-	-	0.72	mA
DC current gain- $I_C = 50 \text{ mA}$, $V_{CE} = 5 \text{ V}$	h_{FE}	70	-	-	-
Collector-emitter saturation voltage ²⁾ $I_C = 50 \text{ mA}$, $I_B = 2.5 \text{ mA}$	V_{CEsat}	-	-	0.3	V
Input off voltage $I_C = 100 \mu\text{A}$, $V_{CE} = 5 \text{ V}$	$V_{i(off)}$	0.3	-	1	
Input on voltage $I_C = 10 \text{ mA}$, $V_{CE} = 0.3 \text{ V}$	$V_{i(on)}$	0.4	-	1.4	
Input resistor	R_1	0.7	1	1.3	k Ω
Resistor ratio	R_1/R_2	0.09	0.1	0.11	-

AC Characteristics

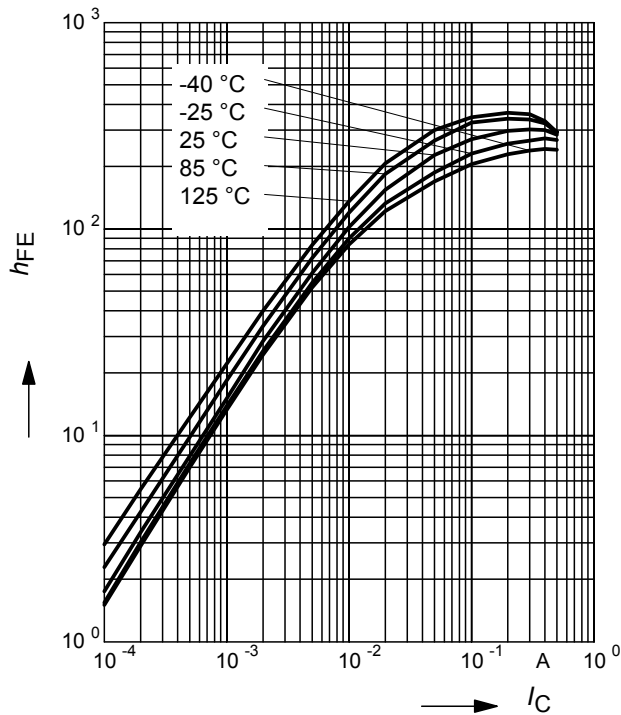
Transition frequency $I_C = 50 \text{ mA}$, $V_{CE} = 5 \text{ V}$, $f = 100 \text{ MHz}$	f_T	-	100	-	MHz
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¹⁾For calculation of R_{thJA} please refer to Application Note AN077 (Thermal Resistance Calculation)

²⁾Pulse test: $t < 300 \mu\text{s}$; $D < 2\%$

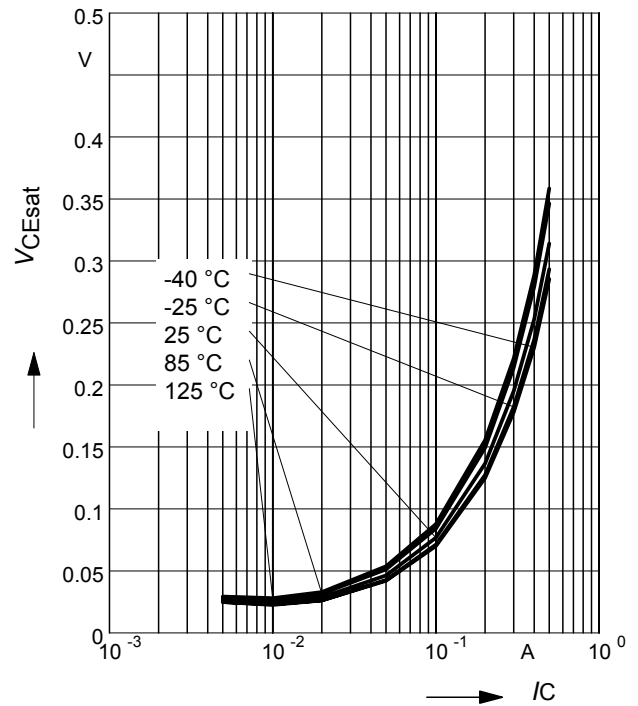
DC current gain $h_{FE} = f(I_C)$

$V_{CE} = 5 \text{ V}$ (common emitter configuration)



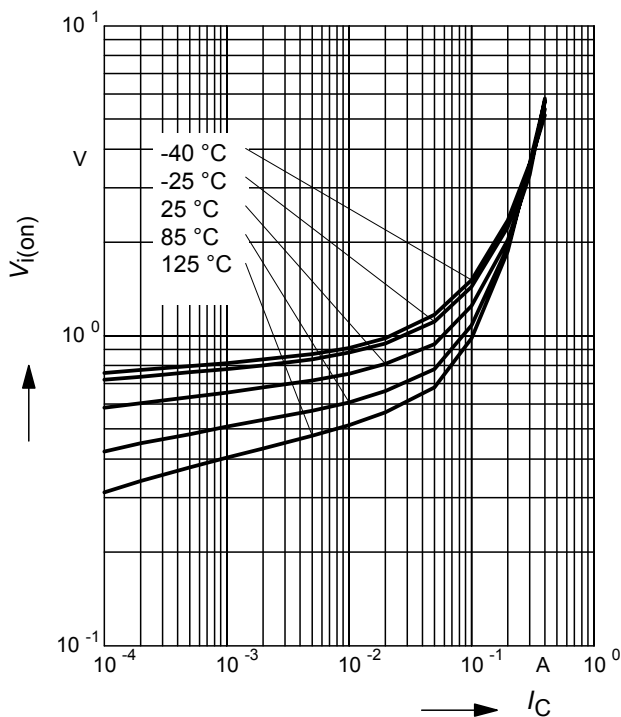
Collector-emitter saturation voltage

$V_{CEsat} = f(I_C)$, $h_{FE} = 20$



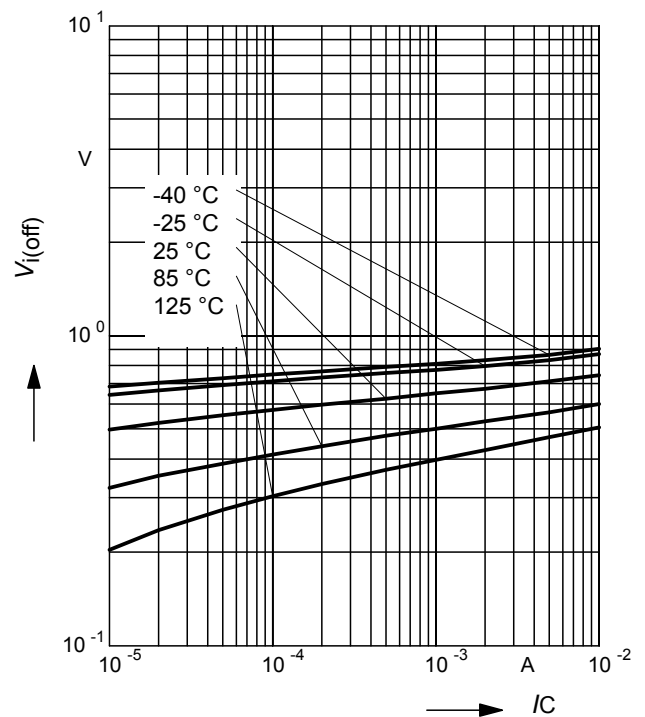
Input on Voltage $V_{i(on)} = f(I_C)$

$V_{CE} = 0.3 \text{ V}$ (common emitter configuration)



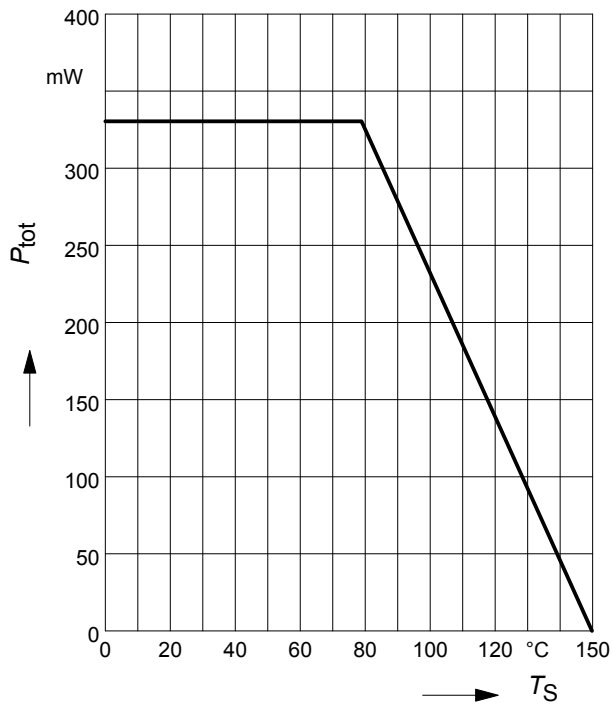
Input off voltage $V_{i(off)} = f(I_C)$

$V_{CE} = 5 \text{ V}$ (common emitter configuration)



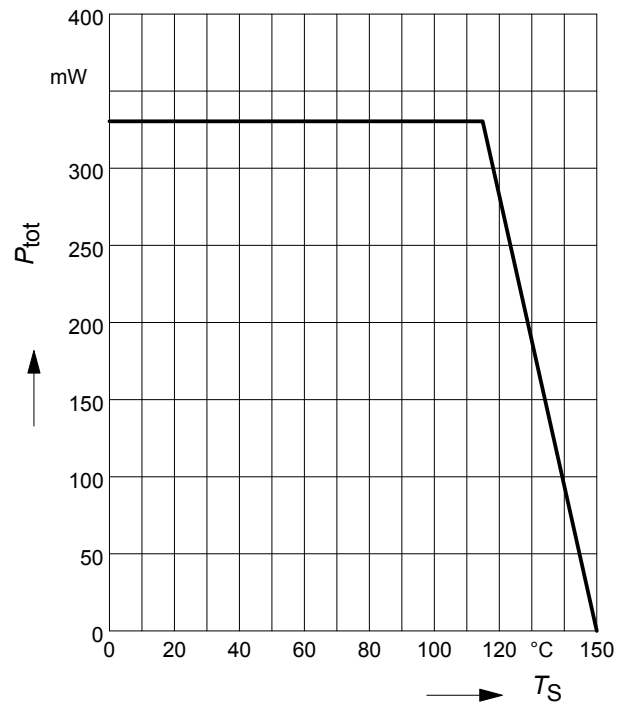
Total power dissipation $P_{\text{tot}} = f(T_S)$

BCR523



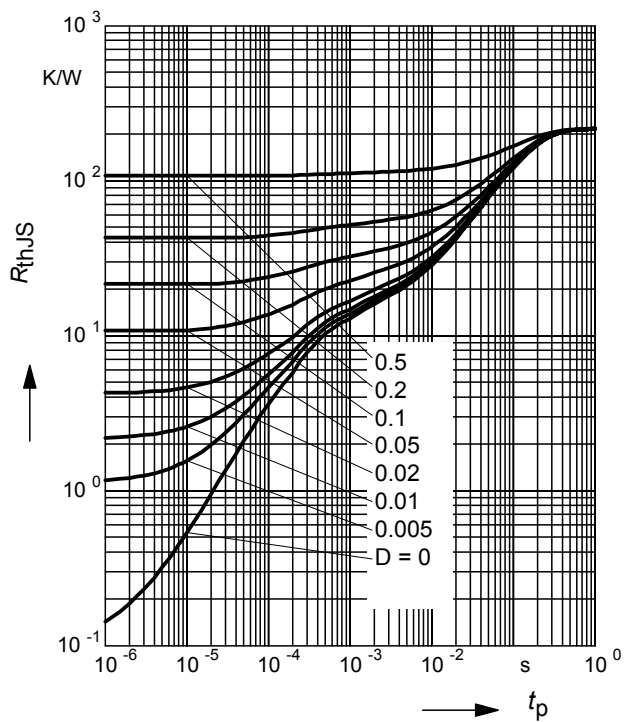
Total power dissipation $P_{\text{tot}} = f(T_S)$

BCR523U



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

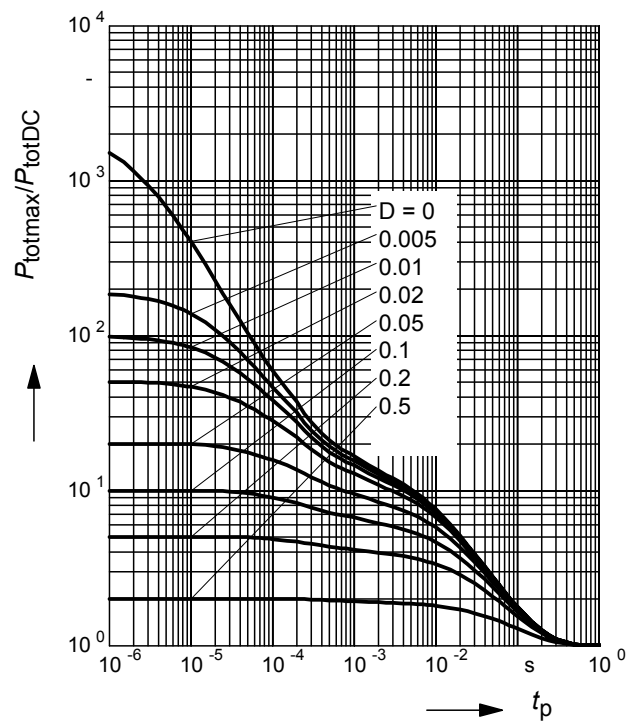
BCR523



Permissible Pulse Load

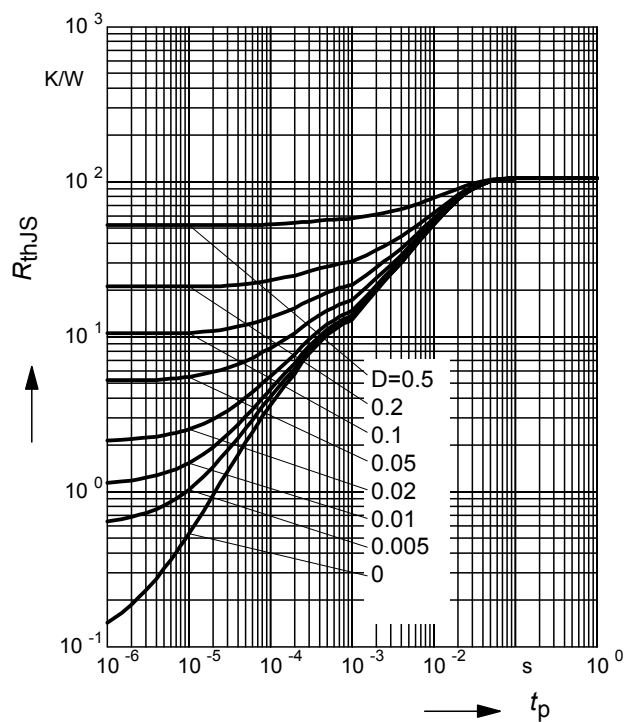
$P_{\text{totmax}}/P_{\text{totDC}} = f(t_p)$

BCR523



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

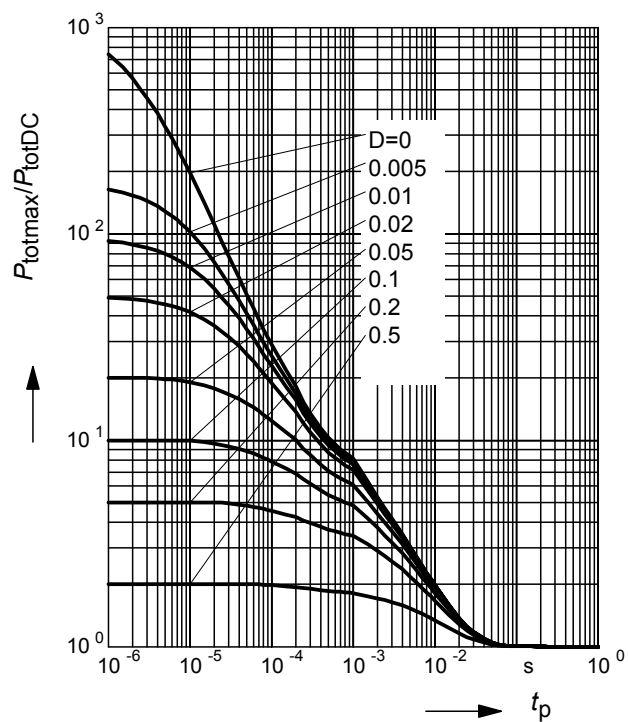
BCR523U



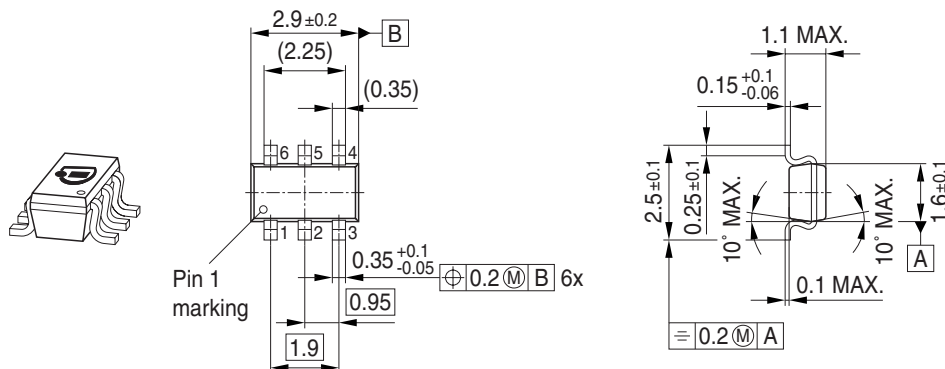
Permissible Pulse Load

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

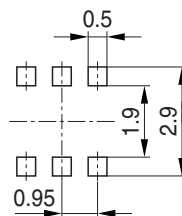
BCR523U



Package Outline

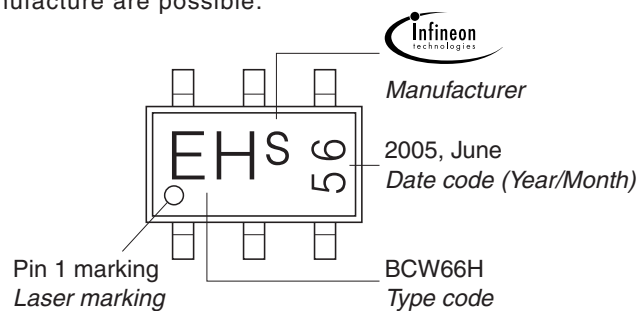


Foot Print



Marking Layout (Example)

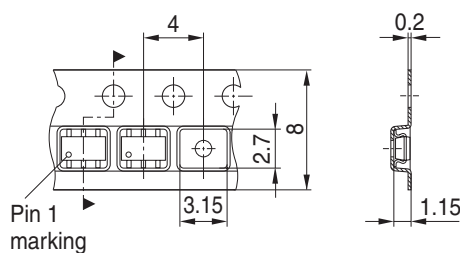
Small variations in positioning of
Date code, Type code and Manufacture are possible.

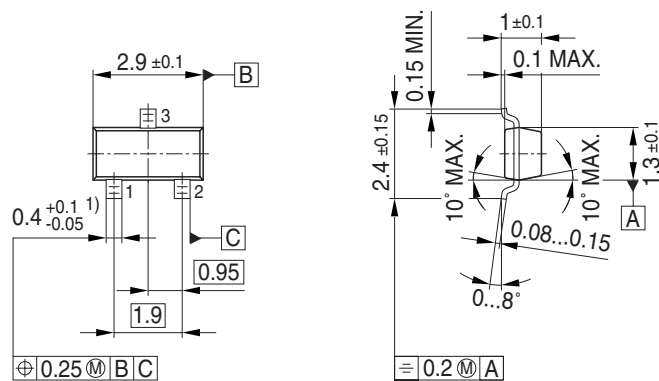


Standard Packing

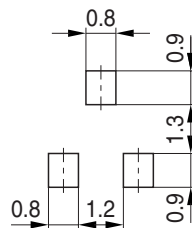
Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel

For symmetric types no defined Pin 1 orientation in reel.



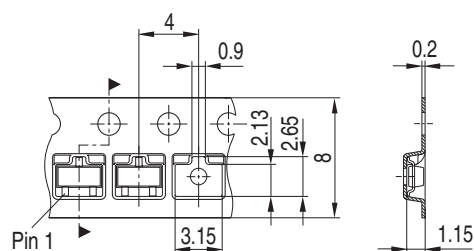


Foot Print



The diagram shows a top-down view of a BCW66 LED package. It is a rectangular component with four pins. The top pin is labeled 'Pin 1'. The package has a central rectangular area containing the text 'EH S' and a date code '05 05'. To the right of the package, the Infineon logo is shown with the text 'Manufacturer'. Below the logo, the text '2005, June' is shown with the text 'Date code (YM)' below it. At the bottom right, the text 'BCW66' is shown with the text 'Type code' below it.

Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel



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