



SANYO Semiconductors

DATA SHEET

2SA2169 / 2SC6017 — PNP / NPN Epitaxial Planar Silicon Transistors

High-Current Switching Applications

Applications

- Relay drivers, lamp drivers, motor drivers.

Features

- Adoption of MBIT process.
- Large current capacitance.
- Low collector-to-emitter saturation voltage.
- High-speed switching.

Specifications () : 2SA2169

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CB0}		(-50)100	V
Collector-to-Emitter Voltage	V _{CEO}		(-)50	V
Emitter-to-Base Voltage	V _{EBO}		(-)6	V
Collector Current	I _C		(-)10	A
Collector Current (Pulse)	I _{CP}	PW≤100μs	(-)13	A
Base Current	I _B		(-)2	A
Collector Dissipation	P _C		0.95	W
		T _C =25°C	20	W
Junction Temperature	T _J		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I _{CB0}	V _{CB} =(-)40V, I _E =0			(-)10	μA
Emitter Cutoff Current	I _{EBO}	V _{EB} =(-)4V, I _C =0			(-)10	μA
DC Current Gain	h _{FE}	V _{CE} =(-)2V, I _C =(-)1A	200		(560)700	
Gain-Bandwidth Product	f _T	V _{CE} =(-)5V, I _C =(-)1A		(130)200		MHz
Output Capacitance	C _{ob}	V _{CB} =(-)10V, f=1MHz		(90)60		pF
Collector-to-Emitter Saturation Voltage	V _{CE(sat)}	I _C =(-)5A, I _B =(-)250mA		(-290)180	(-580)360	mV
Base-to-Emitter Saturation Voltage	V _{BE(sat)}	I _C =(-)5A, I _B =(-)250mA		(-)0.93	(-)1.4	V

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SANYO Electric Co., Ltd. Semiconductor Company

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

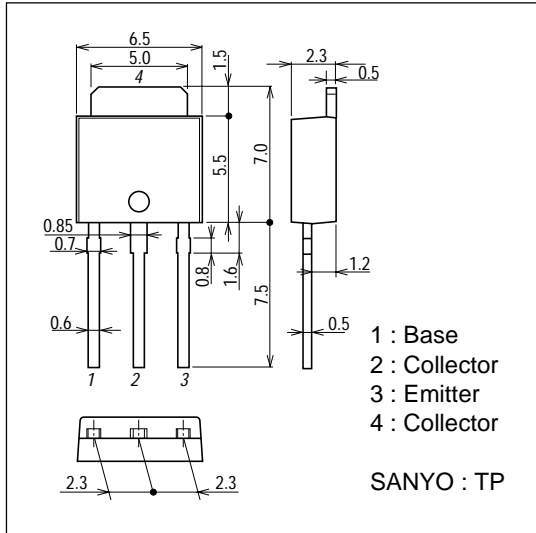
2SA2169 / 2SC6017

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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)100\mu A, I_E = 0$	(-50)100			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1mA, R_{BE} = \infty$	(-)50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-)100\mu A, I_C = 0$	(-)6			V
Turn-On Time	t_{on}	See specified Test Circuit.		(70)40		ns
Storage Time	t_{stg}	See specified Test Circuit.		(650)1000		ns
Fall Time	t_f	See specified Test Circuit.		(60)80		ns

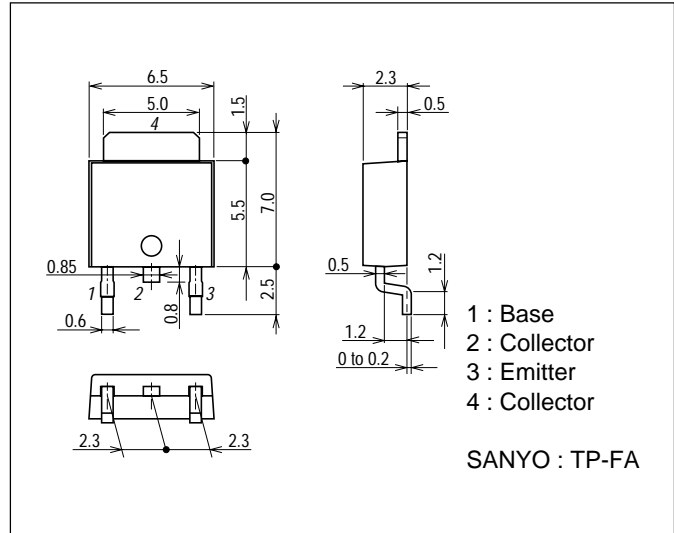
Package Dimensions

unit : mm
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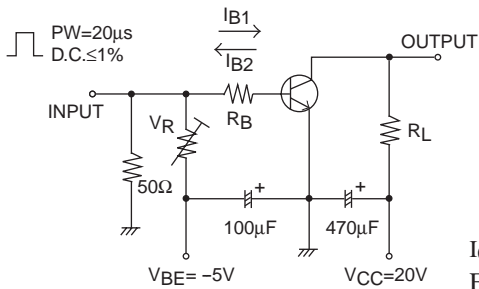


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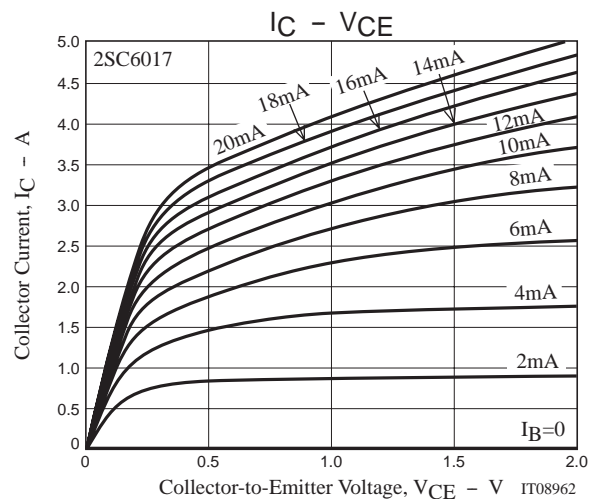
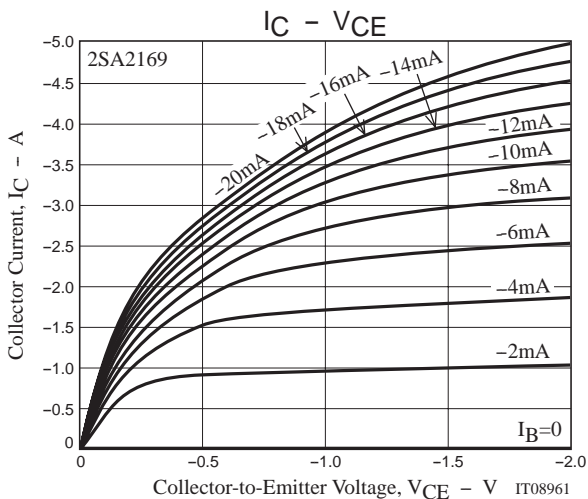
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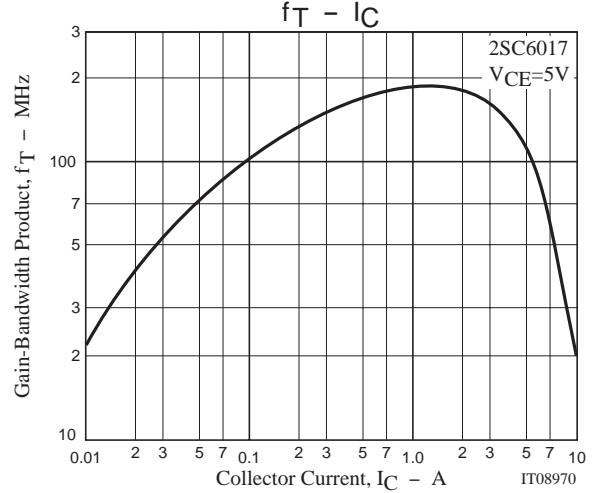
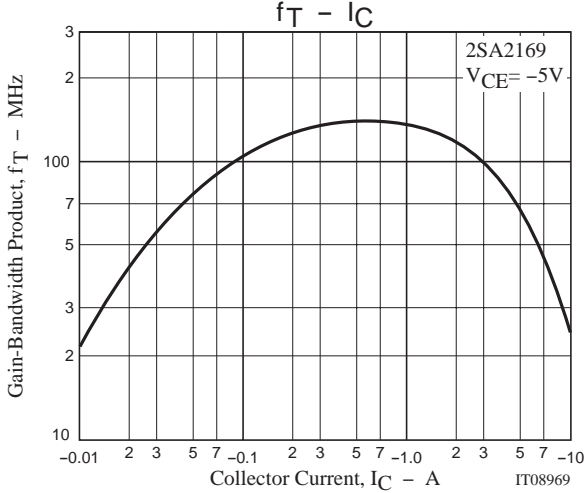
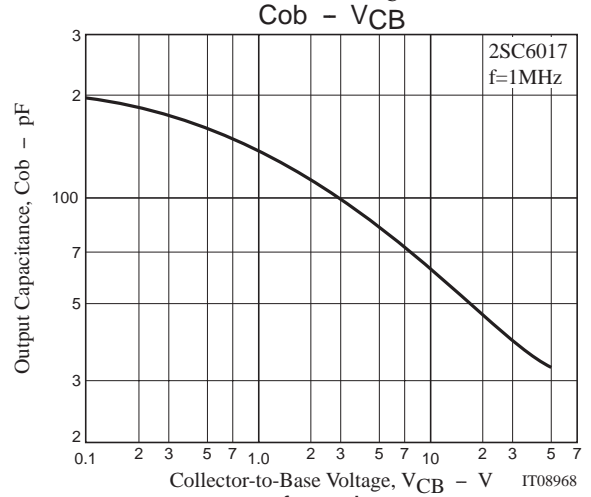
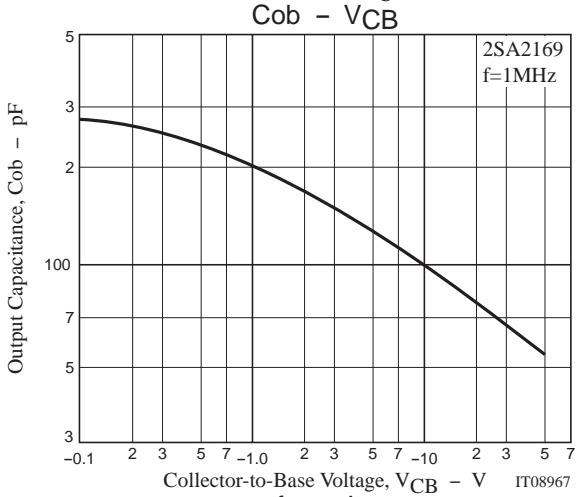
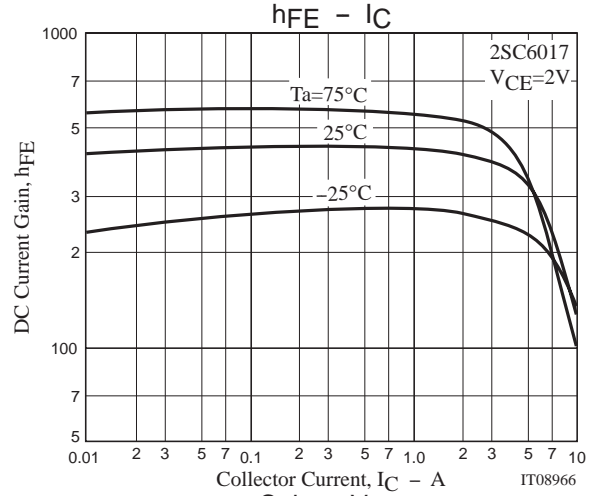
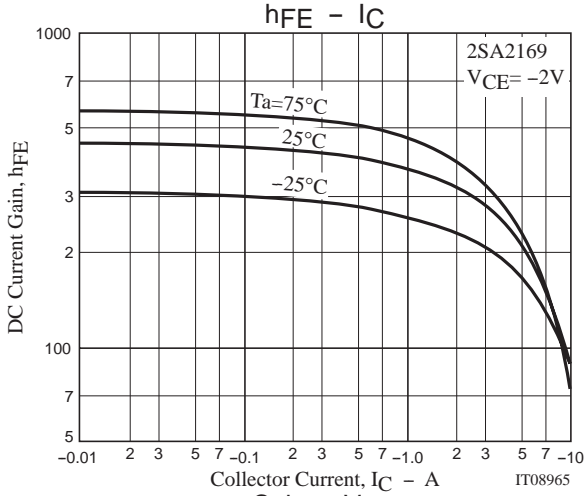
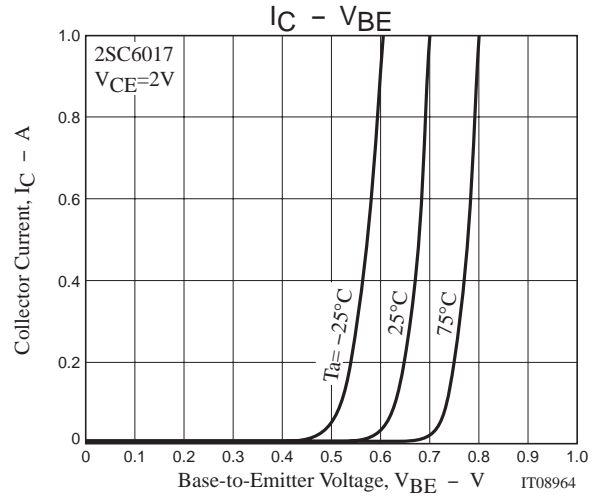
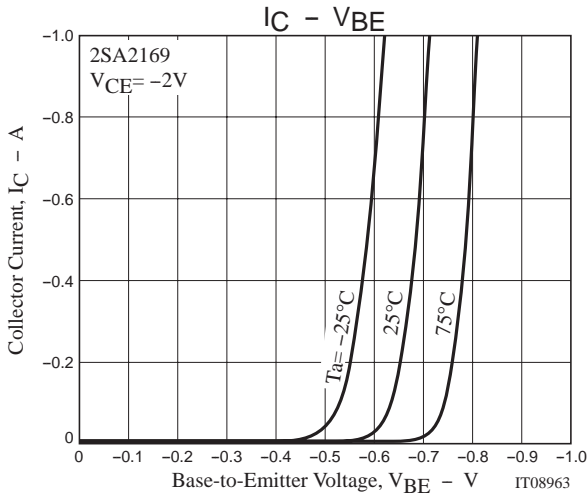
Switching Time Test Circuit



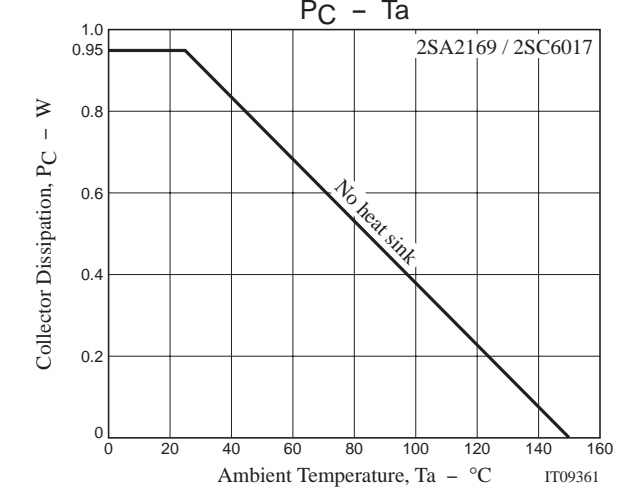
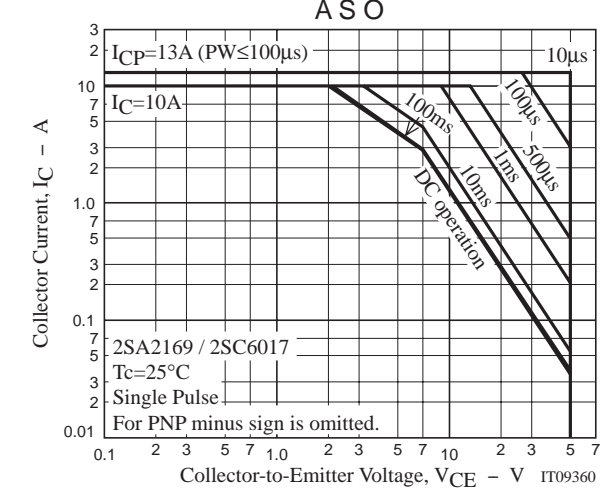
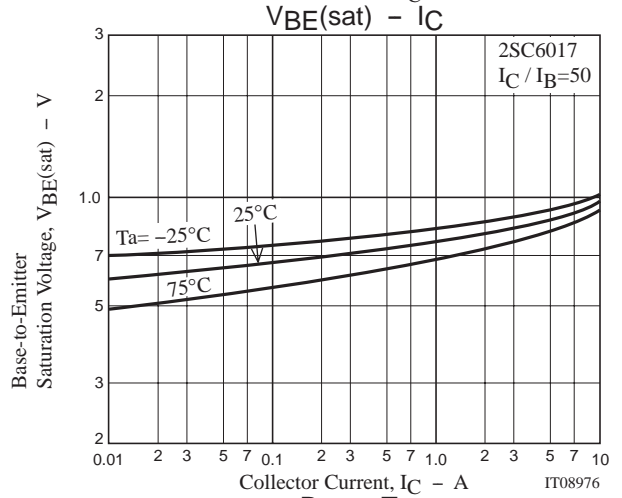
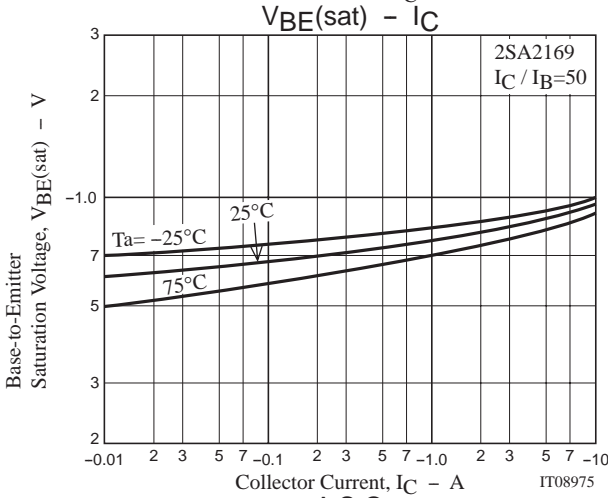
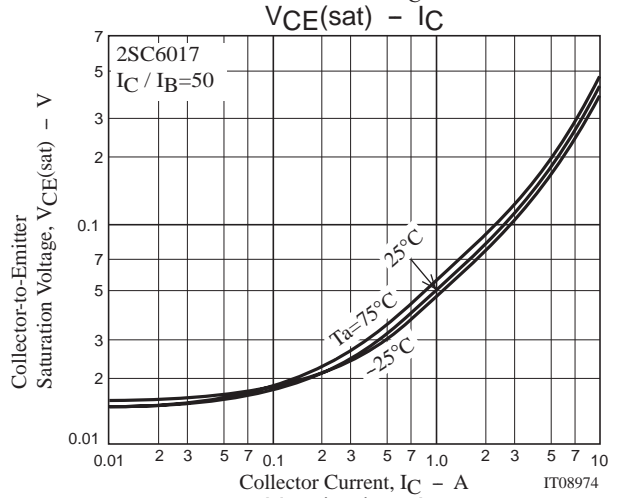
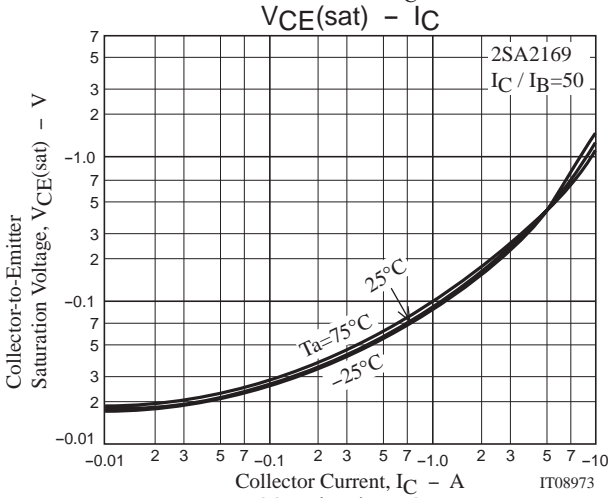
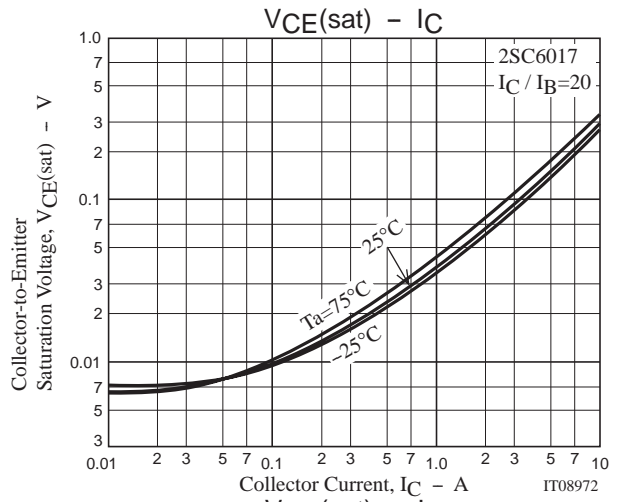
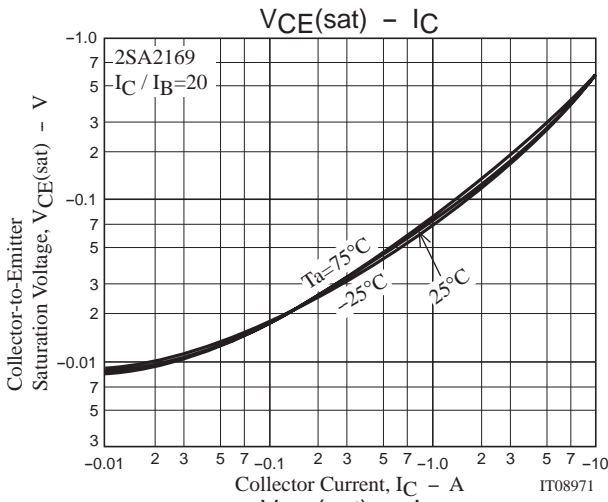
$I_C = 20I_{B1} = -20I_{B2} = 3A$
For PNP, the polarity is reversed.

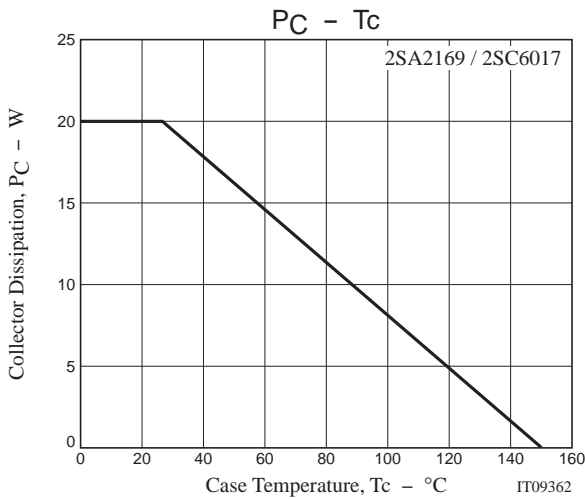


2SA2169 / 2SC6017



2SA2169 / 2SC6017





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