



MCH6536

 — PNP / NPN Epitaxial Planar Silicon Transistor

Push-Pull Circuit Applications

Applications

- MOSFET gate drivers, low-frequency power amplifier, high-speed switching, motor drivers.

Features

- Composite type with a PNP transistor and an NPN transistor contained in one package facilitating high-density mounting.
- Ultrasmall package permitting applied sets to be small and slim.
- Small ON-resistance (Ron).

Specifications () : PNP

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CB0}		(-15)20	V
Collector-to-Emitter Voltage	V _{CEO}		(-12)15	V
Emitter-to-Base Voltage	V _{EBO}		(-) ⁵	V
Collector Current	I _C		(-500)700	mA
Collector Current (Pulse)	I _{CP}		(-1.0)1.4	A
Collector Dissipation	P _C	When mounted on ceramic substrate (600mm ² ×0.8m)	0.5	W
Total Power Dissipation	P _T	When mounted on ceramic substrate (600mm ² ×0.8m)	0.55	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} =(-12)15V, I _E =0A			(-) ¹⁰⁰	nA
Emitter Cutoff Current	I _{EBO}	V _{EB} =(-)4V, I _C =0A			(-) ¹⁰⁰	nA
DC Current Gain	h _{FE}	V _{CE} =(-)2V, I _C =(-)10mA	300		(700)800	
Gain-Bandwidth Product	f _T	V _{CE} =(-)2V, I _C =(-)50mA		(490)330		MHz

Marking : EJ

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MCH6536

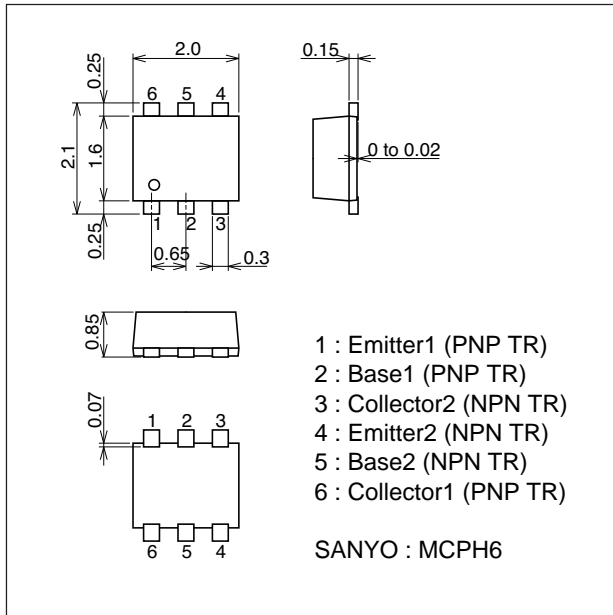
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output Capacitance	Cob	$V_{CB} = (-)10V, f = 1MHz$		(4)3.2		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)200mA, I_B = (-)10mA$		(-)150	(-)300	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = (-)200mA, I_B = (-)10mA$		(-)0.9	(-)1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)10\mu A, I_E = 0A$	(-15)20			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1mA, R_{BE} = \infty$	(-12)15			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-)10\mu A, I_C = 0A$	(-)5			V
Turn-ON Time	t_{on}	See specified Test Circuit.		30		ns
Storage Time	t_{stg}	See specified Test Circuit.		(57)77		ns
Fall Time	t_f	See specified Test Circuit		(30)40		ns

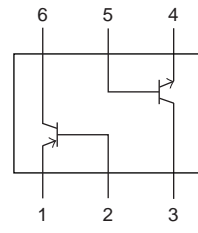
Package Dimensions

unit : mm (typ)

7022A-012



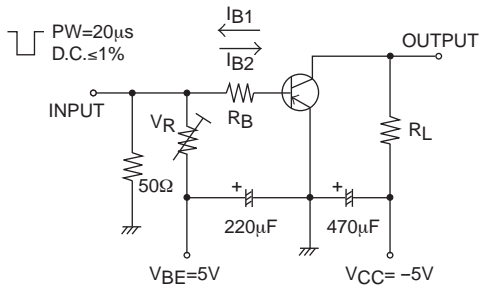
Electrical Connection



- 1 : Emitter1 (PNP TR)
- 2 : Base1 (PNP TR)
- 3 : Collector2 (NPN TR)
- 4 : Emitter2 (NPN TR)
- 5 : Base2 (NPN TR)
- 6 : Collector1 (PNP TR)

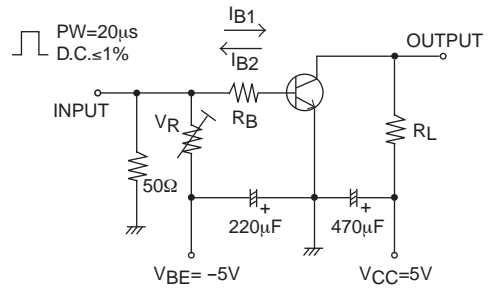
Switching Time Test Circuit

[PNP]



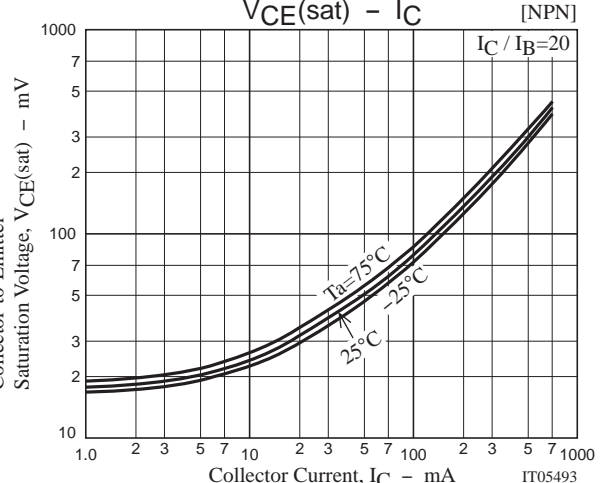
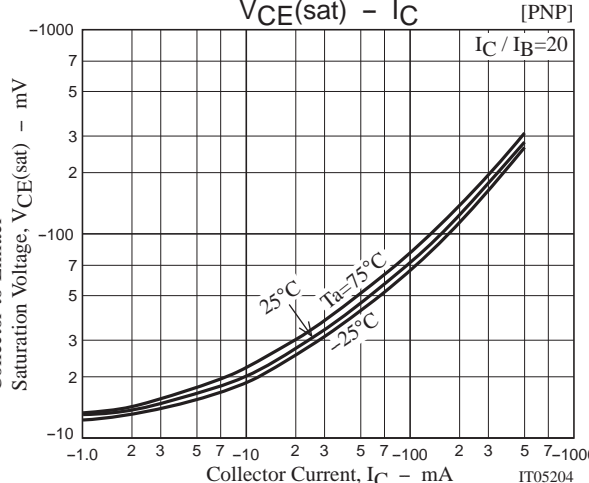
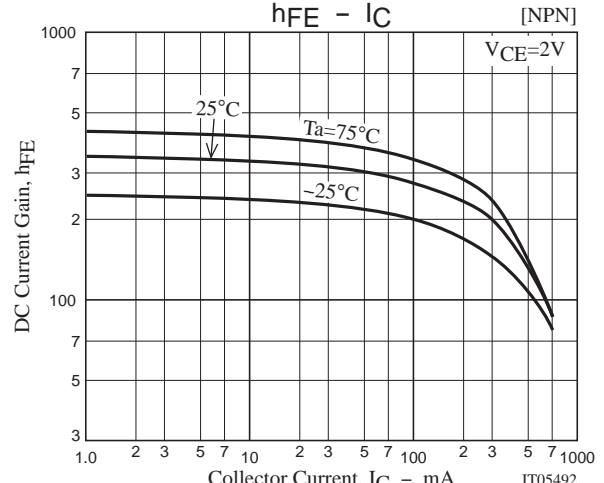
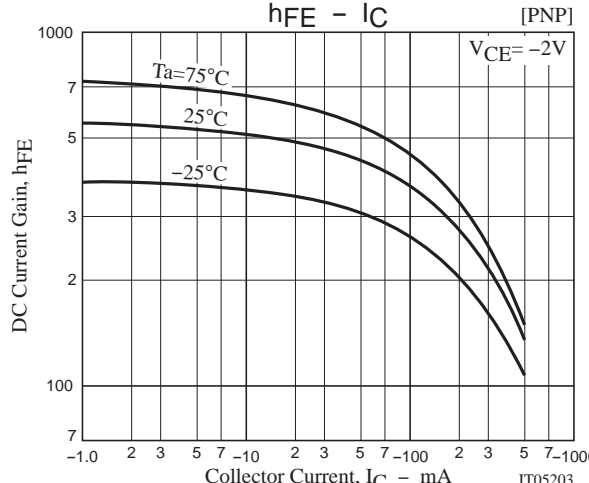
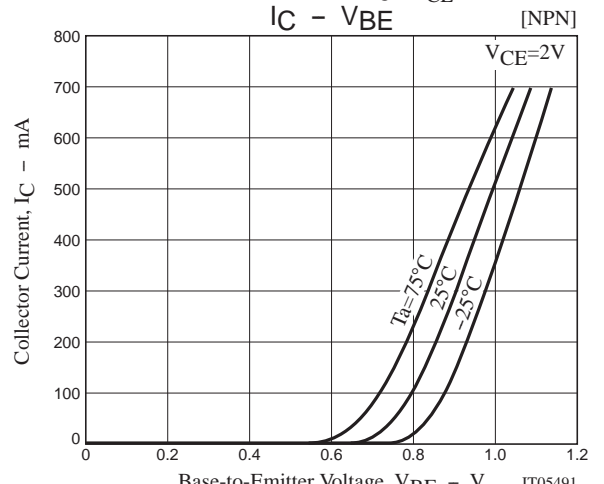
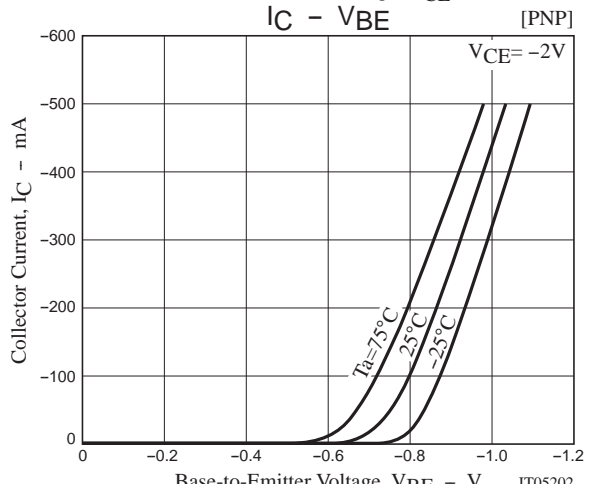
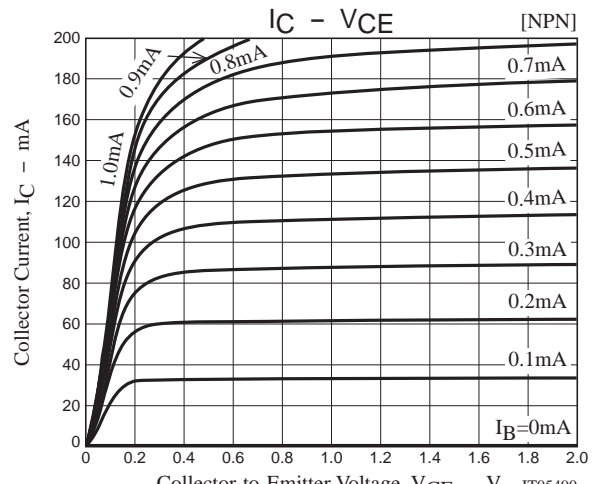
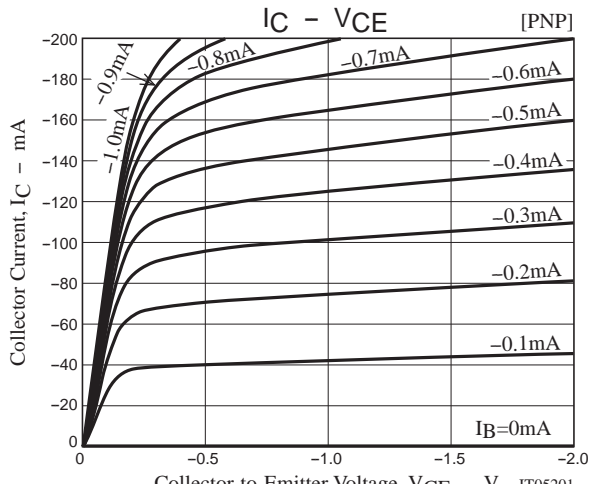
$$I_C = 20I_{B1} = -20I_{B2} = -400mA$$

[NPN]

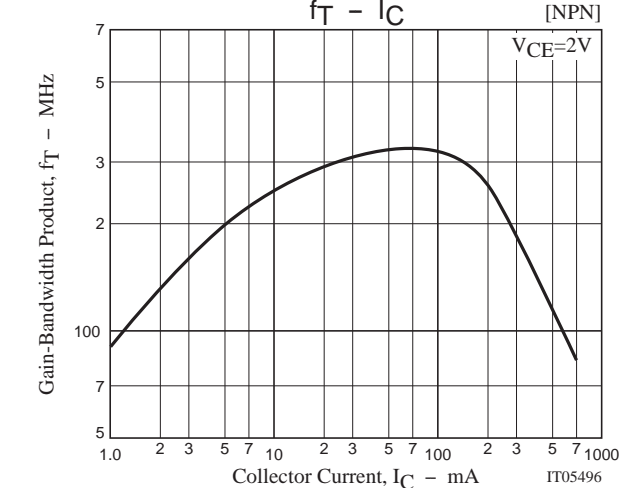
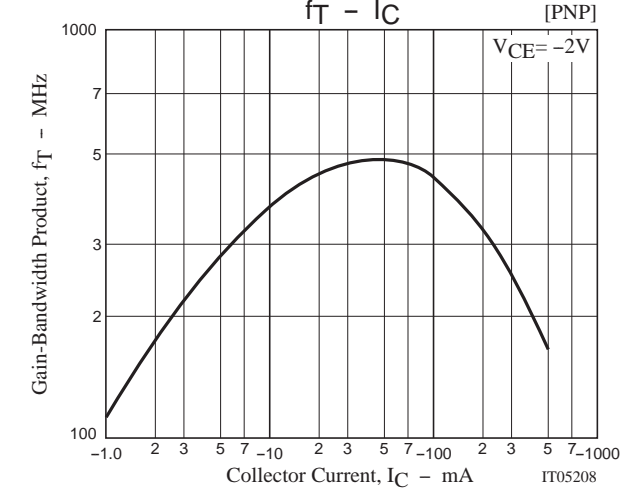
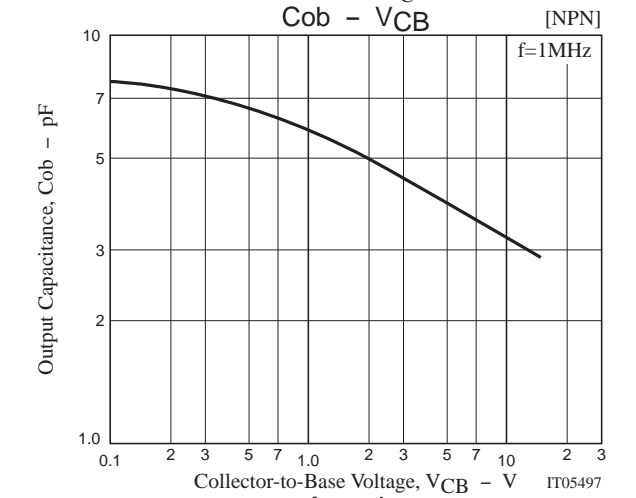
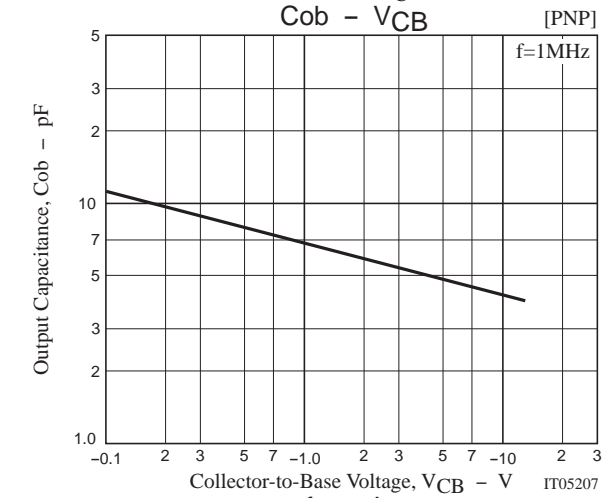
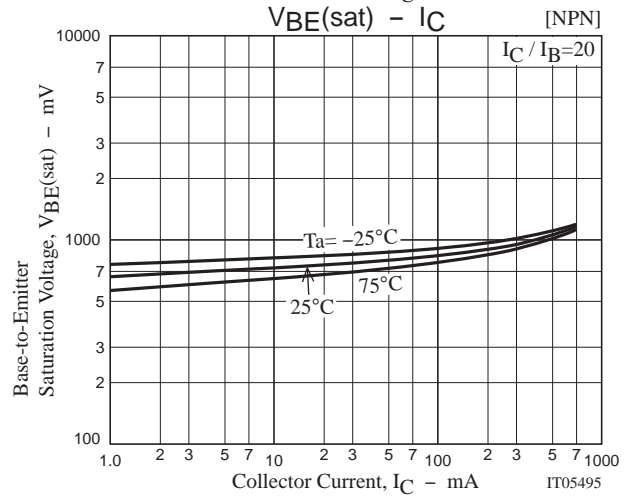
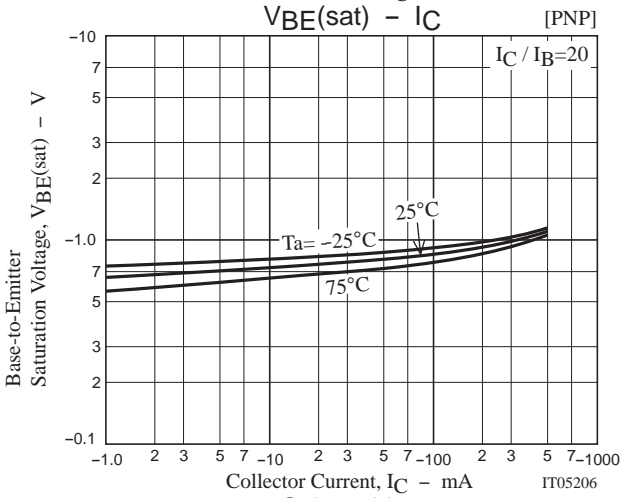
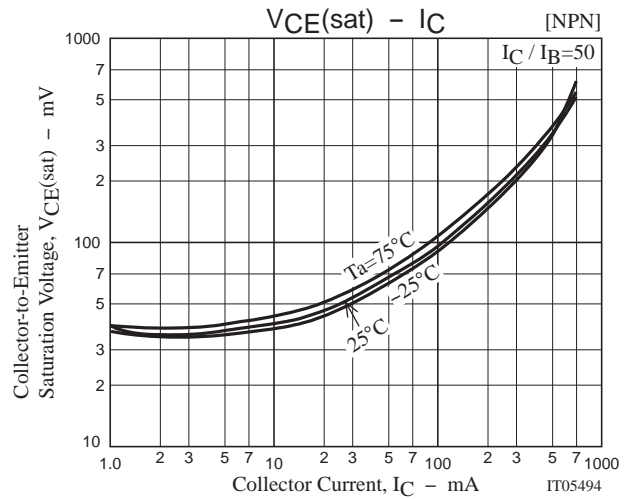
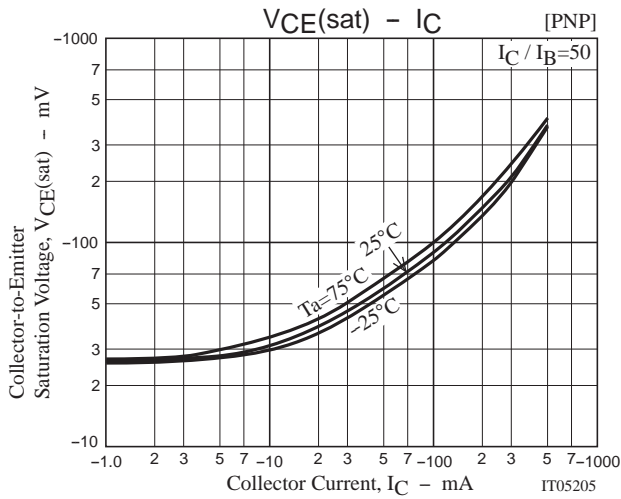


$$I_C = 20I_{B1} = -20I_{B2} = 500mA$$

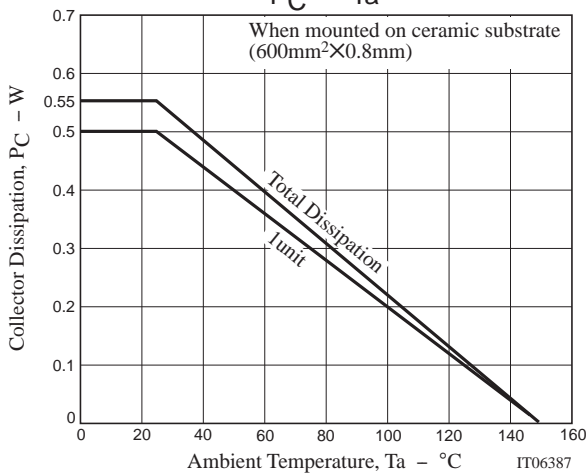
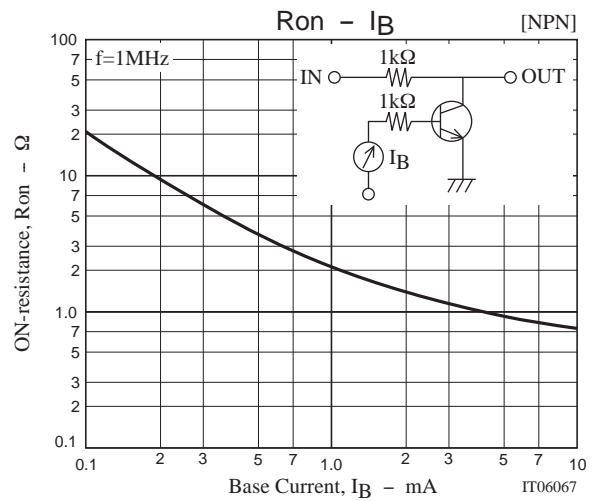
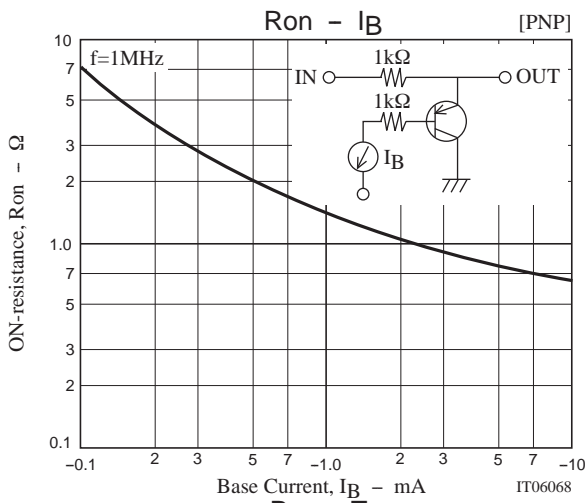
MCH6536



MCH6536



MCH6536



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