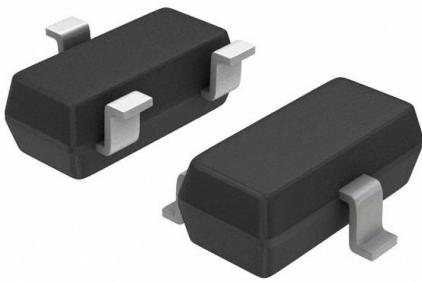


CPH3212-TL-E Datasheet

www.digi-electronics.com



<https://www.DiGi-Electronics.com>

DiGi Electronics Part Number	CPH3212-TL-E-DG
Manufacturer	onsemi
Manufacturer Product Number	CPH3212-TL-E
Description	TRANS NPN 50V 5A 3CPH
Detailed Description	Bipolar (BJT) Transistor NPN 50 V 5 A 330MHz 900 mW Surface Mount 3-CPH



Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

DiGi is a global authorized distributor of electronic components.

Purchase and inquiry

Manufacturer Product Number:

CPH3212-TL-E

Series:

-

Transistor Type:

NPN

Voltage - Collector Emitter Breakdown (Max):

50 V

Current - Collector Cutoff (Max):

100nA (ICBO)

Power - Max:

900 mW

Operating Temperature:

150°C (TJ)

Package / Case:

TO-236-3, SC-59, SOT-23-3

Base Product Number:

CPH3212

Manufacturer:

onsemi

Product Status:

Obsolete

Current - Collector (Ic) (Max):

5 A

Vce Saturation (Max) @ Ib, Ic:

150mV @ 40mA, 2A

DC Current Gain (hFE) (Min) @ Ic, Vce:

200 @ 500mA, 2V

Frequency - Transition:

330MHz

Mounting Type:

Surface Mount

Supplier Device Package:

3-CPH

Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8541.21.0075

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99

Ordering number : EN6147E



ON Semiconductor®

<http://onsemi.com>

CPH3212

Bipolar Transistor 50V, 5A, Low VCE(sat), NPN Single CPH3

Applications

- Relay drivers, lamp drivers, motor drivers, flash

Features

- Adoption of MBIT processes
- High current capacitance
- Low collector-to-emitter saturation voltage
- Ultrasmall package facilitates miniaturization in end products (mounting height : 0.9mm)
- High allowable power dissipation

Specifications

Absolute Maximum Ratings at Ta=25°C

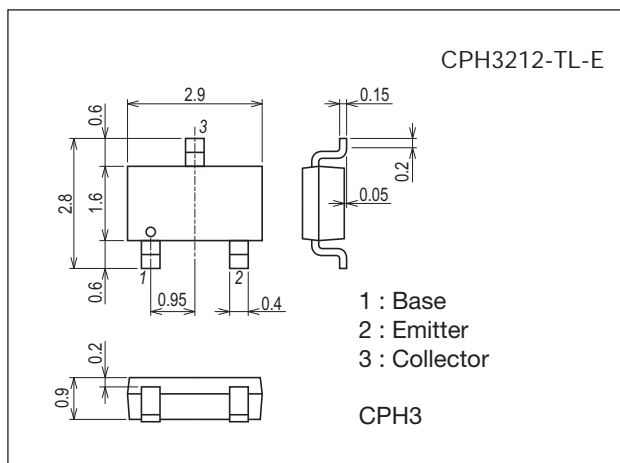
Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CB0}		100	V
Collector-to-Emitter Voltage	V _{CES}		100	V
Collector-to-Emitter Voltage	V _{CEO}		50	V
Emitter-to-Base Voltage	V _{EB0}		6	V
Collector Current	I _C		5	A
Collector Current (Pulse)	I _{CP}		7	A
Base Current	I _B		1.2	A
Collector Dissipation	P _C	When mounted on ceramic substrate (600mm ² ×0.8mm)	0.9	W
Junction Temperature	T _j		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Package Dimensions

unit : mm (typ)

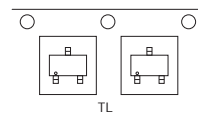
7015A-003



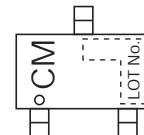
Product & Package Information

- Package : CPH3
- JEITA, JEDEC : SC-59, TO-236, SOT-23
- Minimum Packing Quantity : 3,000 pcs./reel

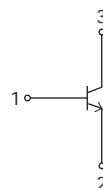
Packing Type: TL



Marking



Electrical Connection

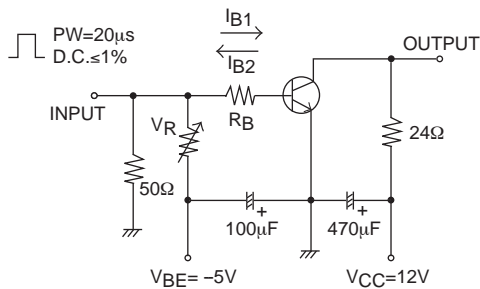


CPH3212

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=40V, I_E=0A$			0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=4V, I_C=0A$			0.1	μA
DC Current Gain	h_{FE}	$V_{CE}=2V, I_C=500mA$	200		560	
Gain-Bandwidth Product	f_T	$V_{CE}=10V, I_C=500mA$		330		MHz
Output Capacitance	C_{ob}	$V_{CB}=10V, f=1MHz$		26		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=2A, I_B=40mA$		100	150	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=2A, I_B=40mA$		0.80	1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0A$	100			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CES}$	$I_C=100\mu A, R_{BE}=0\Omega$	100			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1mA, R_{BE}=\infty$	50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0A$	6			V
Turn-On Time	t_{on}	See specified Test Circuit.		32		ns
Storage Time	t_{stg}			420		ns
Fall Time	t_f			28		ns

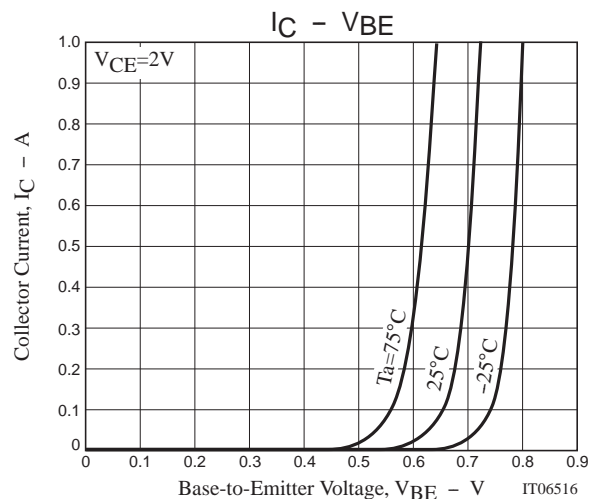
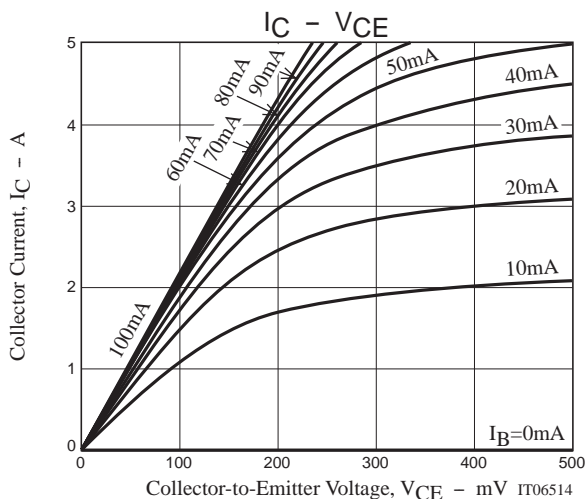
Switching Time Test Circuit



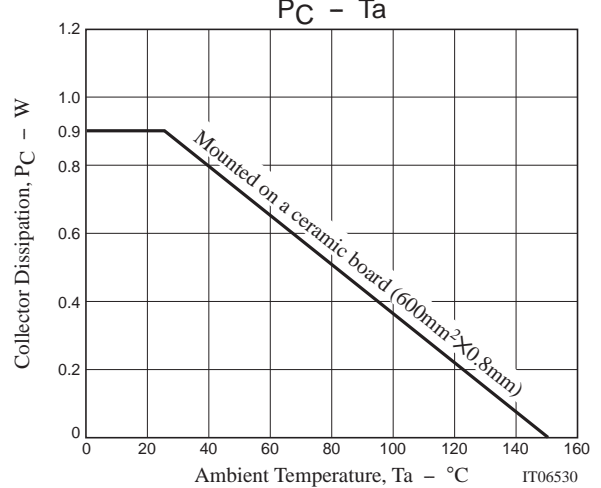
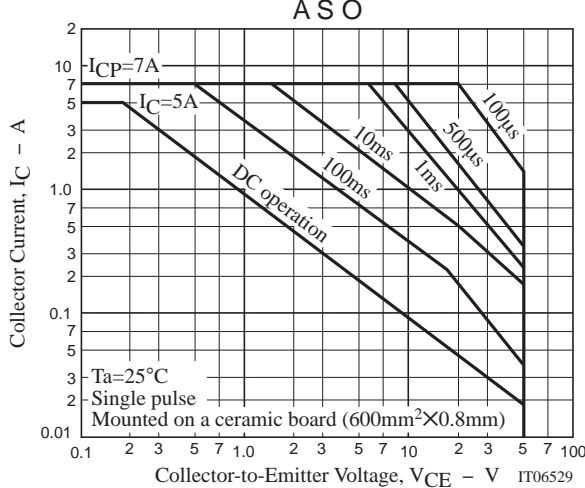
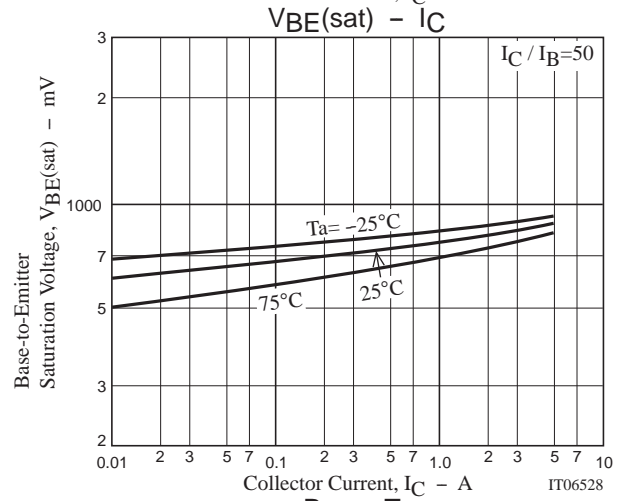
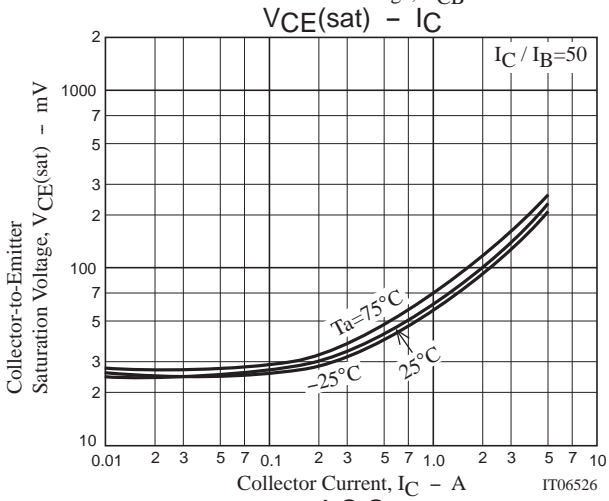
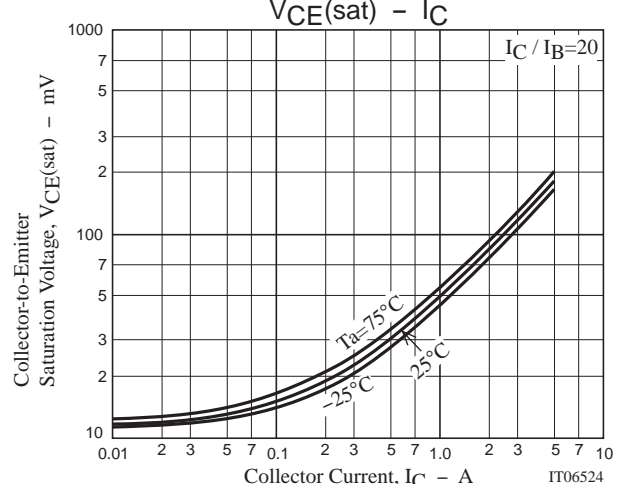
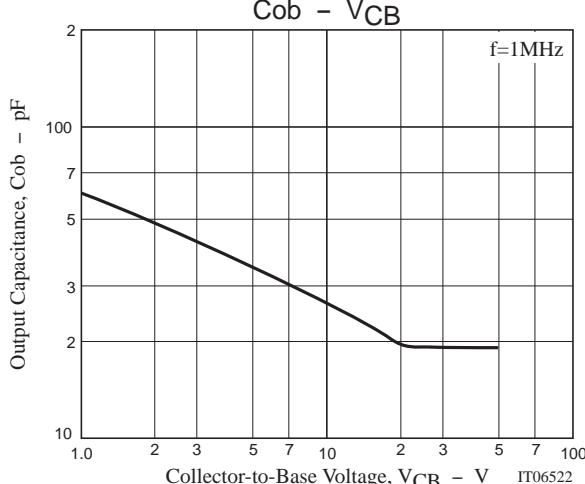
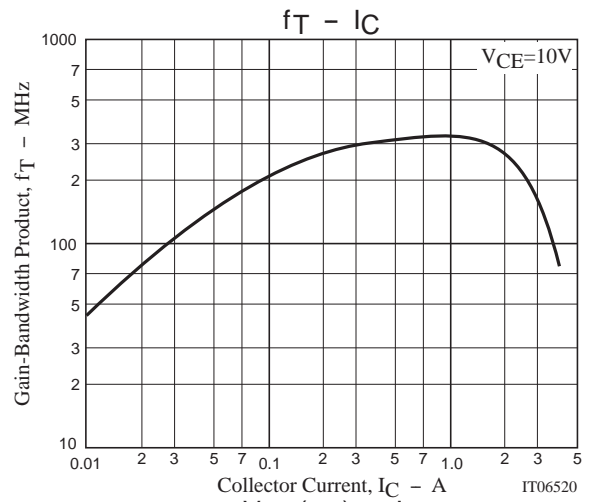
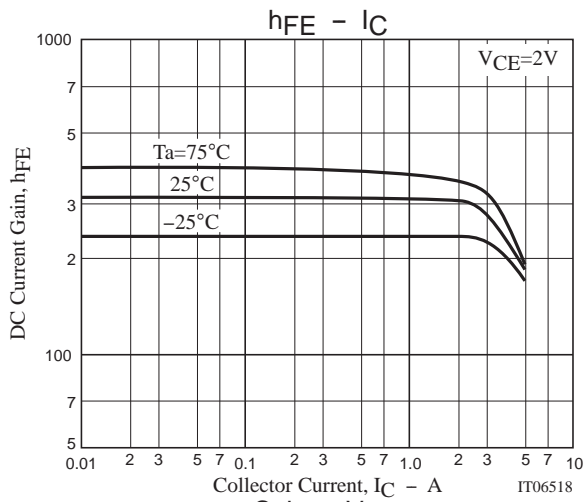
$$I_C = 20I_{B1} = -20I_{B2} = 2.5A$$

Ordering Information

Device	Package	Shipping	memo
CPH3212-TL-E	CPH3	3,000pcs./reel	Pb Free



CPH3212



CPH3212

Embossed Taping Specification

CPH3212-TL-E

1. Packing Format

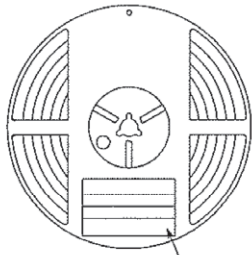
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
CPH3	CPH3	3,000	15,000	90,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

Reel label, Inner box label
(unit:mm)

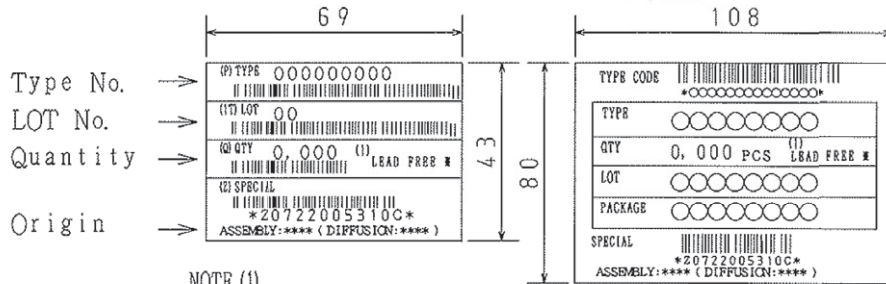
Outer box label

It is a label at the time of factory shipments.
The form of a label may change in physical distribution process.

Packing method



Reel label



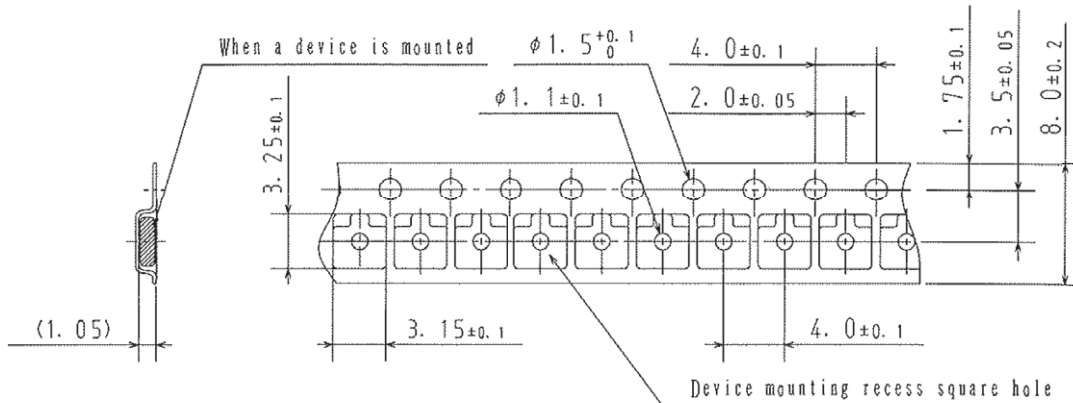
NOTE (1)

The LEAD FREE * description shows that the surface treatment of the terminal is lead free.

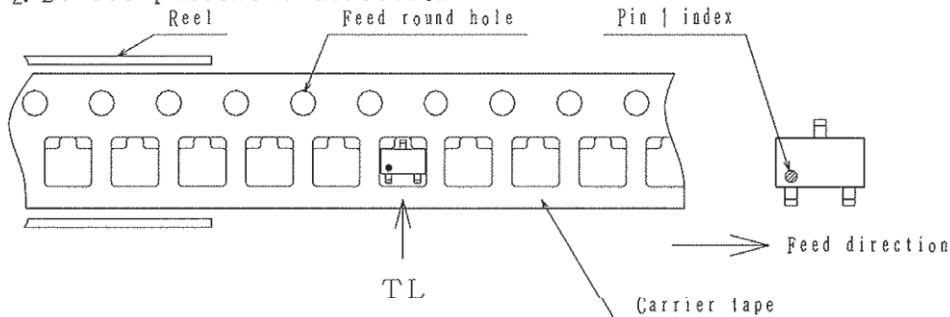
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

2-1. Carrier tape size (unit:mm)



2-2. Device placement direction

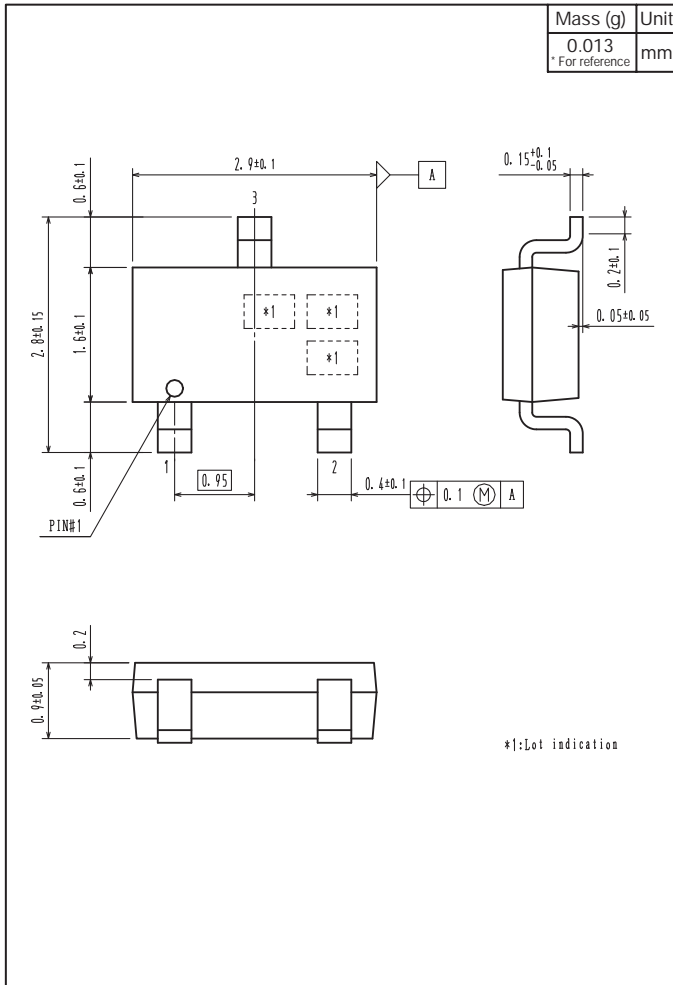


Those with one electrode terminal on the feed hole side.....TL

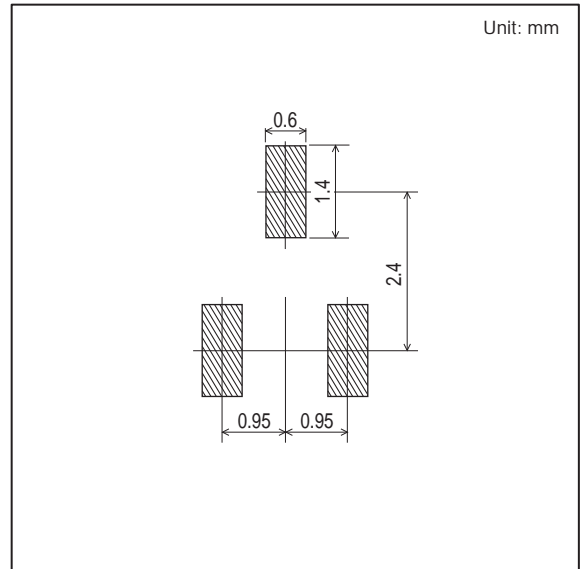
CPH3212

Outline Drawing

CPH3212-TL-E



Land Pattern Example



CPH3212

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