

# UC2 Series



NEC TOKIN's UC2 relay is a new generation Miniature Singnal Relay of super-compact size and flat-package.

## FEATURES

- small mounting size of flat package for dence mounting.
- Telcordia (2500 V) and FCC (1500 V) surge capability.
- IEC60950 / UL1950 / EN60950 spacing and high breakdown voltage. (Basic insulation class on 200 V working voltage)
- Low power consumption 100mW type is available
- UL recognized (E73266), CSA certified (LR46266)

## SPECIFICATIONS

Contact Form		2 Form c
Contact Material		Silver alloy with gold alloy overlay
Contact Ratings	Maximum Switching Power	30 W, 37.5 VA
	Maximum Switching Voltage	220 Vdc, 250 Vac
	Maximum Switching Current	1 A
	Maximum Carrying Current	1 A
Minimum Contact Ratings		10 mVdc, 10 $\mu$ A*1
Initial Contact Resistance		100 m $\Omega$ max.(Initial)
Nominal Operating Power	Nonlatch type	140 mW (1.5 to 12 V), 230 mW (24 V)   100mW(Low power consumption type)
	Single coil latch type	100 mW (1.5 to 12 V), 120 mW (24 V)
Operate Time (Excluding bounce)		Approx. 2 ms
Release Time (Excluding bounce)		Approx. 1 ms
Insulation Resistance		1000 M $\Omega$ at 500 Vdc
Withstand Voltage	Between open contacts	1000 Vac (for one minute)
	Between adjacent contacts	1500 V surge (10 $\times$ 160 $\mu$ S*2)
	Between coil to contacts	1500 Vac (for one minute) 2500 V surge (2 $\times$ 10 $\mu$ S*3)
Shock Resistance		735 m/s <sup>2</sup> (misoperation) 980 m/s <sup>2</sup> (destructive failure)
Vibration Resistance		10 to 55 Hz, double amplitude 3 mm (misoperating) 10 to 55 Hz, double amplitude 5 mm (destructive failure)
Ambient Temperature		-40 to + 85°C (Low power consumption type: -40 to + 70°C)
Coil Temperature Rise		18 degrees at nominal coil voltage (140 mW)
Running Specifications	Nonload	5 $\times$ 10 <sup>7</sup> *4 operations(Non-latch type)
	Load	30 Vdc, 1 A (resistive), 1 $\times$ 10 <sup>5</sup> operations at 20°C 125 Vac, 0.3 A (resistive), 1 $\times$ 10 <sup>5</sup> operations at 20°C
Weight		Approx. 0.8 g

\* 1 This value is a reference value in the resistance load.

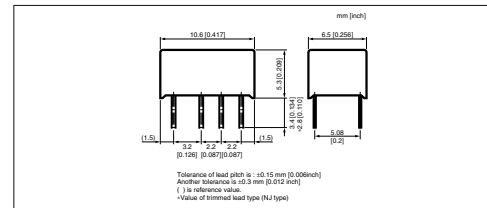
Minimum capacity changes depending on switching frequency and environment temperature and the load.

\* 2 rise time : 10  $\mu$ s, decay time to half crest : 160  $\mu$ s

\* 3 rise time : 2  $\mu$ s, decay time to half crest : 10  $\mu$ s

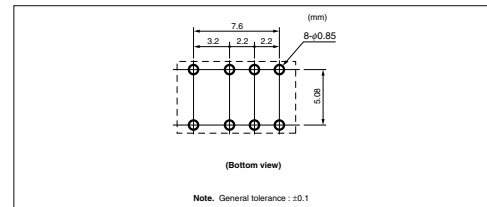
\* 4 This shows a number of operation where it can be running by which a fatal defect is not caused, and a number of operation by which a steady characteristic is maintained is 1 $\times$ 10<sup>7</sup> operations.

## DIMENSIONS mm(inch)

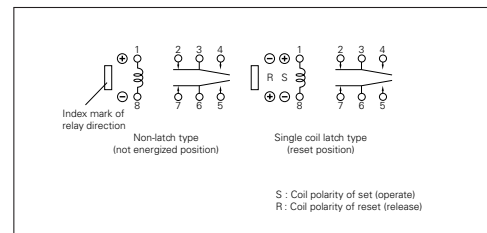


## RECOMMENDED PAD LAYOUT

(bottom view)mm(inch)



## SCHEMATICS (bottom view)



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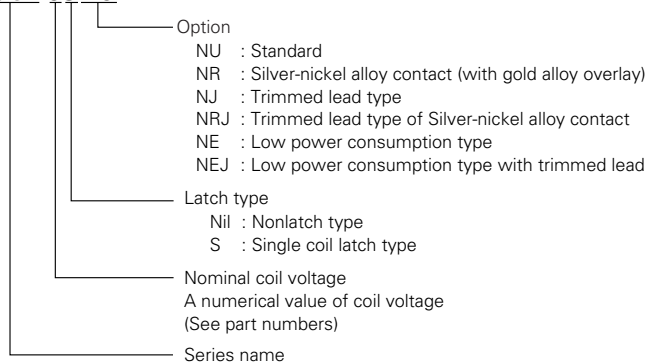
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# UC2 Series

## ■ PART NUMBER SYSTEM

### UC2-3SNU



## ■ SAFETY STANDARD AND RATING

UL Recognized (UL508)* File No. E73266	CSA Certified (CSA C22.2 No14)* File No. LR46266
30 Vdc, 1 A (Resistive)	
110 Vdc, 0.3 A (Resistive)	
125 Vac, 0.5 A (Resistive)	

\* Spacing : UL840  
\* Spacing : CSA std950

TUV Certified (EN61810)
No. R 2050596
Creepage and clearance of coil to contact is over than 2 mm (According EN60950)
Basic insulation class

## ■ PART NUMBERS

### • Nonlatch Type

at 20 °C

Part Number (Standard)	Nominal Coil Voltage (Vdc)	Coil Resistance ( $\Omega$ ) $\pm 10\%$	Must Operate Voltage* (Vdc)	Must Release Voltage* (Vdc)
UC2-1.5NU	1.5	16	1.13	0.15
UC2-3NU	3	64.3	2.25	0.3
UC2-4.5NU	4.5	145	3.38	0.45
UC2-5NU	5	178	3.75	0.5
UC2-6NU	6	257	4.5	0.6
UC2-9NU	9	579	6.75	0.9
UC2-12NU	12	1028	9.0	1.2
UC2-24NU	24	2504	18.0	2.4

### • Single Coil Latch Type

at 20 °C

Part Number (Standard)	Nominal Coil Voltage (Vdc)	Coil Resistance ( $\Omega$ ) $\pm 10\%$	Must Operate Voltage* (Vdc)	Must Release Voltage* (Vdc)
UC2-1.5SNU	1.5	22.5	1.13	1.13
UC2-3SNU	3	90	2.25	2.25
UC2-4.5SNU	4.5	202.5	3.38	3.38
UC2-5SNU	5	250	3.75	3.75
UC2-6SNU	6	360	4.5	4.5
UC2-9SNU	9	810	6.75	6.75
UC2-12SNU	12	1440	9.0	9.0
UC2-24SNU	24	4800	18.0	18.0

### • Nonlatch NE Type (Low power consumption)

at 20 °C

Part Number (Standard)	Nominal Coil Voltage (Vdc)	Coil Resistance ( $\Omega$ ) $\pm 10\%$	Must Operate Voltage* (Vdc)	Must Release Voltage* (Vdc)
UC2-3NE	3	90	2.4	0.3
UC2-4.5NE	4.5	202.5	3.6	0.45
UC2-5NE	5	250	4.0	0.5

Note \* Test by pulse voltage

The latch type relays should be initialized at appointed position before using, and should be energized to specific polarity by above polarity to avoid wrong operation.  
Any special coil requirement, Please contact NEC TOKIN for availability.



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# UC2/UD2 Series

## ■ Recommended relay drive conditions

Drive under conditions. If it is impossible, please inquire to NEC TOKIN.

Nonlatch type	Voltage:within $\pm 5\%$ at nominal voltage	Ambient temperature -40~+85°C
Nonlatch NE type		Ambient temperature -40~+70°C
Single coil latch type	Square pulse (rise and fall time is rapidly) Pulse height: within $\pm 5\%$ at nominal voltage Pulse width: more than 10 ms	Ambient temperature -40~+85°C

## ■ Technical document

Please confirm technical document before use.

It is able to receive a document at NEC TOKIN's World-wide-web site.

(<http://www.nec-tokin.com>)

ITEM	TITLE
Data sheet	UC2/UD2 series
	UC2/UD2 series NE type
Information	UC2/UD2 series technical data
User's manual	Function and note on correct use
Application note	Application circuit of miniature signal relay



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