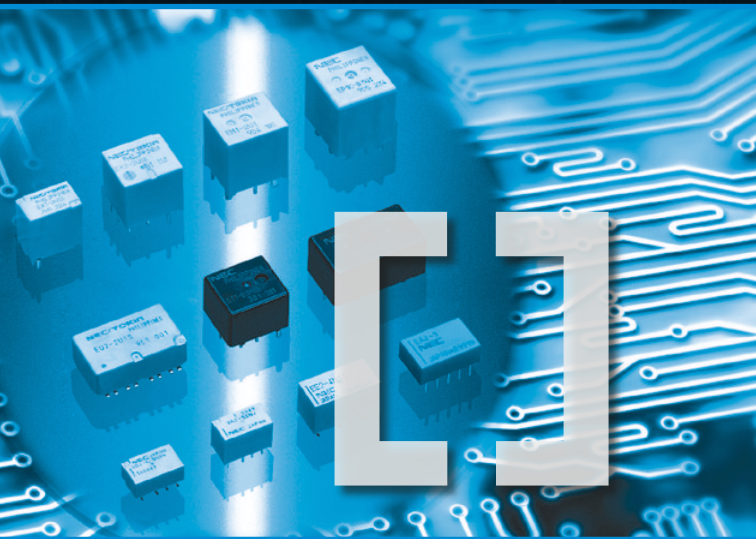




RUTRONIK
ELECTRONICS WORLDWIDE



Committed to excellence

Miniature Relays

NEC/TOKIN

Consult | Components | Logistics | Support

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Miniature Signal Relays

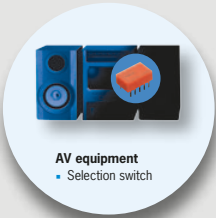
NEC TOKIN provides the best-seller products already used for various applications, and variety of products such as a flat type for low profile mounting, a slim type for high density mounting, low power consumption type and excellent environment resistance type.









Applications

- Telephone switchboards
- Communication terminal equipment
- FA equipment
- Security and alarm equipment

Features

- Compact, lightweight, ultra-low profile with high density
- The low power consumption
- Extremely durable plastic sealing
- Small but high withstanding voltage
- Lineup of SMTs (surface mount type) also available



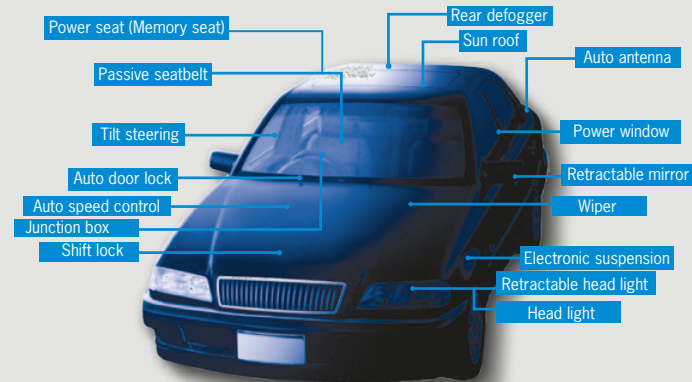
Type of Relay		UA2/UB2	UC2/UD2	EA2	EB2	EC2	EE2	ED2	EF2
Mounting height(mm)		8.0±0.3/8.8max. 	5.3±0.3/5.45max. 	5.4max. 	7.5/6.5, 5.6max. 	9.4max. 	10.0~10.6max. 	9.4max. 	10.0~10.6max. 
Mounting space(mm × mm)		5.7 × 10.6	6.5 × 10.6	9.2 × 14.2	11.5 × 14.3	7.5 × 15.0	9.5(7.5) × 15.0	7.5 × 15.0	9.5(7.5) × 15.0
Features		• Small mounting size of slim package • Bellcore (2500 V) and FCC (1500 V) surge capability • Latching type available • Low power consumption type available	• Low profile type • Bellcore (2500 V surge coil to contacts) and FCC (1500 V) surge capability • Latching type available • Low power consumption type available	• Breakdown voltage 1000VAC FCC Part 68 compliant • Latching type available	• Surface mount type • Breakdown voltage 1000VAC, FCC Part 68 compliant • Latching type available • Reduced mounting space type available	• 2500V surge coil to contacts • Latching type available	• Reduced mounting space type available • Surface mount type • 2500V surge coil to contacts • Latching type available	• Ultra low power consumption • 2500V surge coil to contacts	• Ultra low power consumption • Reduced mounting space type available • Surface mount type • 2500V surge coil to contacts
Contact arrangement		2c	2c	2c	2c	2c	2c	2c	2c
Maximum Contact	Power	30W/37.5VA			30W/62.5VA		60W/125VA (UL, CSA rating)		30W/62.5VA
	Voltage	220VDC/250VAC			220VDC/250VAC		220VDC/250VAC		
	Current [Working]	1A			1A		2A		1A
Coil	Operating power	100~230mW			100~200mW		100~230mW		30~70mW
	Nominal voltage	3, 4.5, 5, 9, 12, 24V			3, 4.5, 5, 12, 24V		3, 4.5, 5, 9, 12, 24V		1.5, 3, 4.5, 5, 9, 12, 24V

Miniature Power Relays

NEC TOKIN provides various types such as low profile, small mounting area and low power consumption, while realizing large capacity.

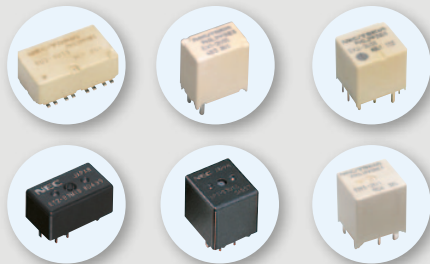
Applications









- Automotive electronic systems



Features

- Large capacity for high power switching
- Flux tight housing suitable for automatic soldering dip
- Semi-customizable for use in all types of circuitry, including car electronic systems
- Washable plastic case (sealed type)
- Lineup of miniature twin relays also available
- Reflow soldering type available



Type of Relay		EU2	EX2	EX1	ET2	ET1	EP2	EP1	EM1
Mounting height(mm)		8.0max.	14.2max.	14.2max.	11.0max.	11.0max.	16.5max.	16.5max.	16.5max.
Mounting space(mm × mm)									
Features		• Ultra low profile SMD twin relay for motor reversible control • Light weight • Reflow soldering available	• Ultra miniature twin relay for motor reversible control • Light weight • Small mounting area	• Ultra miniature single relay for motor control • Light weight • Small mounting area	• Miniature twin relay for motor reversible control • Low profile *ET2F; High heat resistance	• Miniature single relay for motor, heater & solenoid control • Low profile *ET1F; High heat resistance	• Twin relay for motor reversible control • Symmetrical structure * EP2F; High heat resistance	• Single relay for motor control *EP1F; High heat resistance	• Large capacity single relay for lamp, condenser & motor control • Reflow soldering available *High heat resistance
Contact arrangement		1c × 2	1c × 2	1c	1c × 2	1c	1c × 2	1c	1u
Maximum Contact	Power	480W	480W		400W		480W		640W
	Voltage	16VDC	16VDC		16VDC		16VDC		16VDC
Coil	Current [Working]	30A	30A		25A		30A		40A
	Operating power	960mW	900mW		640mW		480~640mW		640mW
	Nominal voltage	12	12		12		12V		12V

NEC TOKIN Miniature Relays

The production bases responsible for the superb quality of NEC TOKIN's Miniature Relays.

NEC TOKIN has two production bases — NEC TOKIN Shiroishi Operations and NEC TOKIN Electronics (Philippines) Inc. — that ensure a constant and stable supply of high-quality and highly reliable miniature relays using the most advanced equipment available. Both plants have received ISO9001, ISO/TS16949 and ISO14001 certification.

NEC TOKIN Shiroishi Operations

This is a R&D and production site responsible for developing and designing new products. There is abundant expertise and experience in manufacturing technology. The production line employs state-of-the-art robots and image processing technology to ensure that NEC TOKIN miniature relays achieve maximum efficiency and quality.



NEC TOKIN Electronics (Philippines) Inc.

Established in 1997, this mass production factory boasts the most advanced equipment. The intricate construction of miniature relays requires the highest level of precision for processing and assembly. In order to ensure high quality, the production line is fully automated. The miniature relays produced here are shipped to customers all over the world.

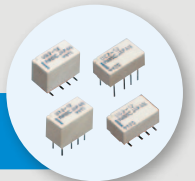


NEC TOKIN Miniature Relays keep on evolving.

In order to respond to various needs from customers, NEC TOKIN is creating new products through continuous efforts for downsizing, weight saving, high performance, change of mounting method, and so forth...

Ultra small signal relays

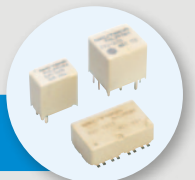
U Series



The world's smallest class signal relay for use in telecommunications, FA control, and measuring equipment. UA&UB relays are the ultra-compact type with a mounting area of 60mm². UC&UD relays are the ultra-compact type with low profile of 5.45mm.

Miniature power relays for Automotive electronic systems

EX1, EX2&EU2 relay



These relays are suitable for motor reversible control such as power window and door lock, etc. EX1&EX2 relays are the world's smallest class of mounting area. EU2 relay is the surface mount twin relay with the world's lowest profile (7.8mm).

Miniature power relays for Automotive electronic systems

EM1 relay



EM1 relay is a high heat resistance relay for junction boxes. It is suitable for large inrush current loads such as lamps and condensers, or heaters and fans. Inrush current of 100A and carrying current of 50A are achieved.

NEC/TOKIN



We have enlarged our stocking program to accommodate these new products.

These parts are available from stock, or on a short delivery, benefiting our customers.

For more information, please contact your Rutronik sales team or our product marketing:



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