TAKAMISAWA (Fujitsu) Power Relay 1 POLE-5A NYP24W-K

▣ Features

- Slim type with 5mm thickness
- Low power consumption and high sensitivity

▣ Coil Specifications

Model	Rated voltage	Must operate voltage	Must release voltage	Rated current	Coil resistance	Power consumption
NYP24W-K	24VDC⎓	16.1V	2.4V	5mA	4,800Ω	120mW

※All values in the table are measured at 20 ℃ with a tolerance of ±10%.

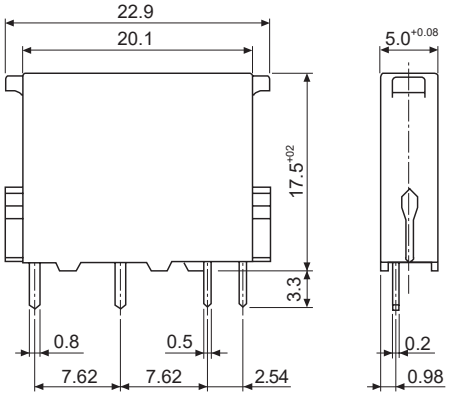
▣ Contact Specifications

Manufacture			TAKAMISAWA (Fujitsu)	
Model			**NYP24W-K**	
Contact	Arrangement		1 Form A (SPST-1a)	
	Material		Gold overlay silver alloy	
	Resistance (initial)		30mΩ (6VDC⎓ 1A)	
Rating	Rated load		3A 250VAC~	3A 30VDC⎓
	Max. switching capacity		750VA	90W
	Min. switching capacity		5VDC⎓ 1mA	
	Max. switching voltage		270VAC~	150VDC⎓
	Max. switching current		5A	
Electrical characteristics	Insulation resistance		≥ 1,000MΩ (at 500VDC megger)	
	Dielectric strength	Between contact-coil	3,000VAC 50/60Hz for 1 minute	
		Between open contacts	750VAC 50/60Hz for 1 minute	
	Surge voltage		5,080V	
	Operate time		≤ 10ms	
	Release time		≤ 5ms	
Mechanical characteristics	Vibration	Mechanical	5.0mm amplitude at frequency of 10 to 55Hz (for 1 min) in each X, Y, Z direction for 1 hour	
		Malfunction	1.5mm amplitude at frequency of 10 to 55Hz (for 1 min) in each X, Y, Z direction for 10 minute	
	Shock	Mechanical	1000m/s^2 (approx. 100G) in each X, Y, Z direction for 3 times	
		Malfunction	100m/s^2 (approx.10G) in each X, Y, Z direction for 3 times	
Life expectancy	Mechanical		≥ 20,000,000 operations (at 180 operations/min)	
	Electrical※1		≥ 100,000 operations (3A 250VAC, 30VDC resistive load)	
Environment	Ambient temperature		-40 to 90℃	
	Ambient humidity		35 to 80%RH	
Weight			Approx. 3.5g	

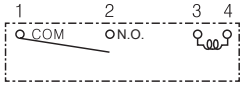
※1: 50,000 operations: 5A 250VAC, 5A 30VDC resistive load (per 20 operations/min)
※Environment resistance is rated at no freezing or condensation.

▣ Dimensions

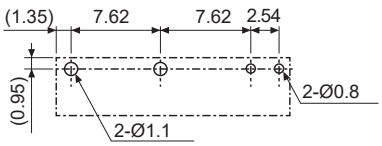
(unit: mm)



- Circuit diagram (bottom view)



- PCB pattern



MATSUSHITA(Panasonic) Power relay 1 POLE-5A APAN3124

▣ Features

- Slim type with 5mm thickness
- Excellent durability resistance against vibration and shock

▣ Coil Specifications

Model	Rated voltage	Must operate voltage	Must release voltage	Rated current	Coil resistance	Power consumption
APAN3124	24VDC⎓	≥ 70% of rated voltage	≤ 5% of rated voltage	7.5mA	3,200Ω	180mW

※All values in the table are measured at 20 ℃ with a tolerance of ±10%.

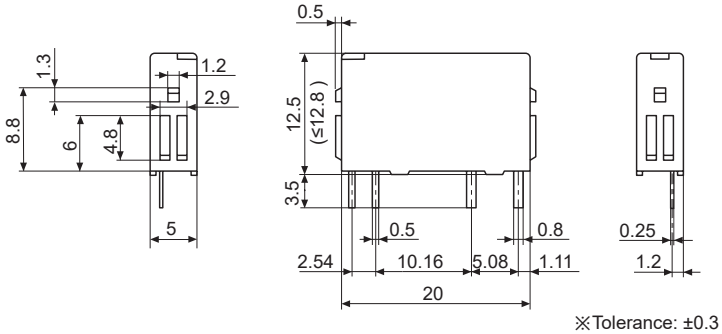
▣ Contact Specifications

Manufacture			MATSUSHITA (Panasonic)	
Model			**APAN3124**	
Contact	Arrangement		1 Form A (SPST-1a)	
	Material		Au-clad AgNi type	
	Resistance (initial)		30mΩ (6VDC⎓ 1A)	
Rating	Rated load		5A 250VAC~	5A 30VDC⎓
	Max. switching capacity		1,250VA	150W
	Min. switching capacity		100mVDC⎓ 100μA	
	Max. switching voltage		250VAC~	110VDC⎓
	Max. switching current		5A	
Electrical characteristics	Insulation resistance		≥ 1,000MΩ (at 500VDC megger)	
	Dielectric strength	Between contact-coil	3,000VAC 50/60Hz for 1 minute	
		Between open contacts	1,000VAC 50/60Hz for 1 minute	
	Surge voltage		6,000V	
	Operate time		≤ 10ms	
	Release time		≤ 5ms	
Mechanical characteristics	Vibration	Mechanical	3.5mm amplitude at frequency of 10 to 55Hz (for 1 min) in each X, Y, Z direction for 1 hour	
		Malfunction	2.5mm amplitude at frequency of 10 to 55Hz (for 1 min) in each X, Y, Z direction for 10 minute	
	Shock	Mechanical	980m/s^2 (approx. 100G) in each X, Y, Z direction for 3 times	
		Malfunction	147m/s^2 (approx. 15G) in each X, Y, Z direction for 3 times	
Life expectancy	Mechanical		≥ 20,000,000 operations (at 180 operations/min)	
	Electrical※1		≥ 100,000 operations (3A 250VAC, 30VDC resistive load)	
Environment	Ambient temperature		-40 to 90℃	
	Ambient humidity		5 to 85%RH	
Weight			Approx. 3g	

※1: 50,000 operations-5A 250VAC, 5A 30VDC resistive load (per 20 operations/min)
※Environment resistance is rated at no freezing or condensation.

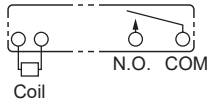
▣ Dimensions

(unit: mm)

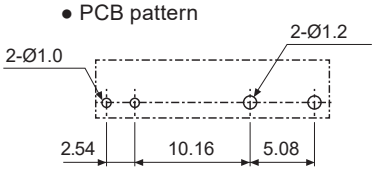


※Tolerance: ±0.3

● Circuit diagram (bottom view)



● PCB pattern



MATSUSHITA (Panasonic) Power Relay 1 POLE-5A PQ1a-24V

▣ Features

- Slim type
- Excellent durability resistance against vibration and shock

▣ Coil Specifications

Model	Rated voltage	Must operate voltage	Must release voltage	Rated current	Coil resistance	Power consumption
PQ1a-24V	24VDC⎓	≥ 75% of rated voltage	≤ 5% of rated voltage	8.3mA	2,880Ω	200mW

※All values in the table are measured at 20 ℃ with a tolerance of ±10%.

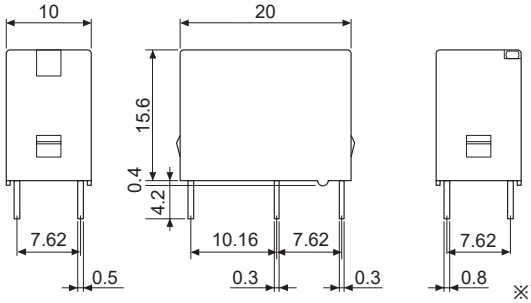
▣ Contact Specifications

Manufacture			MATSUSHITA (Panasonic)	
Model			**PQ1a-24V**	
Contact	Arrangement		1 Form A (SPST-1a)	
	Material		Au-clad AgNi type	
	Resistance (initial)		50mΩ (6VDC⎓ 1A)	
Rating	Rated load (resistive load)		5A 250VAC~	5A 30VDC⎓
	Max. switching power (resistive load)		1,250VA	150W
	Max. switching voltage		250VAC~	110VDC⎓
	Max. switching current		5A	
Electrical characteristics	Insulation resistance (initial)		≥ 1,000MΩ (at 500VDC megger)	
	Dielectric strength	Between contact-coil	4,000VAC 50/60Hz for 1 minute	
		Between open contacts	1,000VAC 50/60Hz for 1 minute	
	Surge voltage		8,000V	
	Operate time (supplying rated voltage)		≤ 20ms	
	Release time (supplying rated voltage)		≤ 10ms	
Mechanical characteristics	Vibration	Mechanical	3.5mm amplitude at frequency of 10 to 55Hz (for 1 min) in each X, Y, Z direction for 1 hour	
		Malfunction	2.0mm amplitude at frequency of 10 to 55Hz (for 1 min) in each X, Y, Z direction for 10 minute	
	Shock	Mechanical	980m/s^2 (approx. 100G) in each X, Y, Z direction for 3 times	
		Malfunction	294m/s^2 (approx. 30G) in each X, Y, Z direction for 3 times	
Life expectancy	Mechanical		≥ 20,000,000 operations (at 180 operations/min)	
	Electrical※1		≥ 100,000 operations (5A 250VAC, 30VDC resistive load)	
Environment	Ambient temperature		-40 to 70℃	
	Ambient humidity		5 to 85%RH	
Weight			Approx. 7g	

※1: 20 operations per 1 minute
※Environment resistance is rated at no freezing or condensation.

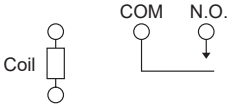
▣ Dimensions

(unit: mm)

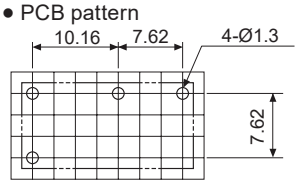


※Tolerance: ±0.2 (max. 1mm),
±0.3 (min. 1mm to max. 5mm),
±0.4 (min. 5mm)

● Circuit diagram
(bottom view)



● PCB pattern

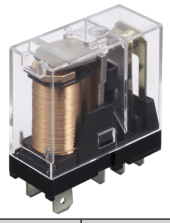


※Tolerance: ±0.1

MATSUSHITA (Panasonic) Power Relay Plug-In Type 1 Form C

▣ Features

- Slim type
- High capacity, high reliability



▣ Coil Specifications

Model	Rated voltage	Must operate voltage	Must release voltage	Rated current		Power consumption	
AHN12024	24VDC⎓	≥ 70% of rated voltage	≤ 15% of rated voltage	22mA		0.53W	
AHN110X0	100/110VAC～	≥ 80% of rated voltage	≤ 30% of rated voltage	50Hz	60Hz	50Hz	60Hz
				11/13mA	9/10.6mA	1.1 to 1.4VA	0.9 to 1.2VA
AHN110Y2	220VAC～	≥ 80% of rated voltage	≤ 30% of rated voltage	50Hz	60Hz	50Hz	60Hz
				5.0/5.9mA	4.1/4.8mA	1.1 to 1.4VA	0.9 to 1.2VA

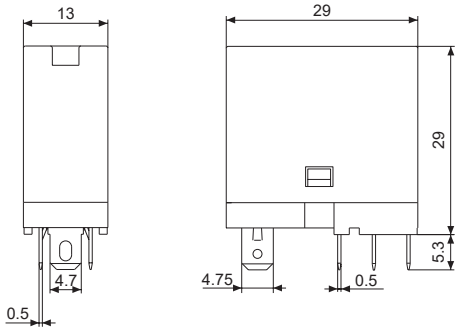
▣ Contact Specifications

Manufacture			MATSUSHITA (Panasonic)		
Model			**AHN12024**	**AHN110X0**	**AHN110Y2**
Contact	Arrangement		1 Form C		
	Material		$AgSnO_2$ type		
	Resistance (initial)		≤ 100mΩ (6VDC⎓ 1A)		
Rating	Rated load (resistive load)		10A 250VAC～, 10A 30VDC⎓		
	Max. switching power (resistive load)		4,000VA, 300W		
	Max. switching voltage		250VAC～, 30VDC⎓		
	Max. switching current		16A (AC load), 10A (DC load)		
Electrical characteristics	Insulation resistance (initial)		≥ 1,000MΩ (at 500VDC megger)		
	Dielectric strength	Between contact-coil	5,000VAC 50/60Hz for 1 minute		
		Between open contacts	1,000VAC 50/60Hz for 1 minute		
	Operate time (supplying rated voltage)		≤ 15ms		
	Release time (supplying rated voltage)		≤ 5ms		
Mechanical characteristics	Vibration	Mechanical	1.5mm amplitude at frequency of 10 to 55Hz (for 1 min) in each X, Y, Z direction for 1 hour		
		Malfunction	1.5mm amplitude at frequency of 10 to 55Hz (for 1 min) in each X, Y, Z direction for 10 minute		
	Shock	Mechanical	1,000m/s^2 (approx. 100G) in each X, Y, Z direction for 3 times		
		Malfunction	100m/s^2 (approx. 10G) in each X, Y, Z direction for 3 times		
Life expectancy	Mechanical		≥ 20,000,000 operations (at 300 operations/min)	≥ 10,000,000 operations (at 300 operations/min)	
	Electrical		≥ 100,000 operations (at 20 operations/min)		
Environment	Ambient temperature		-40 to 70℃		
	Ambient humidity		5 to 85%RH		
Weight			Approx. 19g		

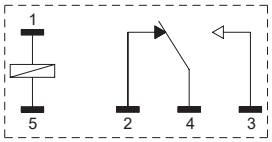
※Environment resistance is rated at no freezing or condensation.

▣ Dimensions

(unit: mm)



● Circuit diagram (bottom view)



※Tolerance: ±0.1 (max. 1mm), ±0.2 (min. 1mm to max. 3mm), ±0.3 (min. 3mm)

OMRON Power Relay 1 Form C

▣ Features

- Slim type
- High capacity, high reliability

▣ Coil Specifications

Model	Rated voltage	Must operate voltage	Must release voltage	Rated current		Power consumption
G2R-1-S24VDC	24VDC⎓	≥ 70% of rated voltage	≤ 15% of rated voltage	21.8mA		0.53W
G2R-1-S100/ (110)VAC	100/110VAC～	≥ 80% of rated voltage	≤ 30% of rated voltage	50Hz	60Hz	60Hz
				11mA	9/10.6mA	0.9VA
G2R-1-S200/ (220)VAC	200/220VAC～	≥ 80% of rated voltage	≤ 30% of rated voltage	50Hz	60Hz	60Hz
				5.5/4mA	4.5/5.3mA	0.9VA

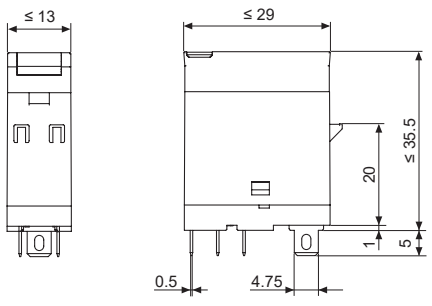
▣ Contact Specifications

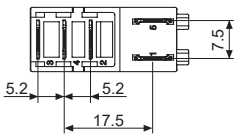
Manufacture			OMRON		
Model			**G2R-1-S24VDC**	**G2R-1-S100/ (110)VAC**	**G2R-1-S100/ (110)VAC**
Contact	Arrangement		1 Form C		
	Material		AgCdO type		
	Resistance (initial)		≤ 100mΩ		
Rating	Rated load (resistive load)		10A 250VAC～, 10A 30VDC⎓		
	Max. switching power (resistive load)		2,500VA, 300W		
	Max. switching voltage		380VAC～, 125VDC⎓		
	Max. switching current		10A (resistive load)		
Electrical characteristics	Insulation resistance (initial)		≥ 1,000MΩ (at 500VDC megger)		
	Dielectric strength	Between contact-coil	5,000VAC 50/60Hz for 1 minute		
		Between open contacts	1,000VAC 50/60Hz for 1 minute		
	Operate time (supplying rated voltage)		≤ 15ms		
	Release time (supplying rated voltage)		≤ 5ms	≤ 10ms	
Mechanical characteristics	Vibration	Mechanical	1.5mm amplitude at frequency of 10 to 55Hz (for 1 min) in each X, Y, Z direction for 1 hour		
		Malfunction	1.5mm amplitude at frequency of 10 to 55Hz (for 1 min) in each X, Y, Z direction for 10 minute		
	Shock	Mechanical	1,000m/s^2 (approx. 100G) in each X, Y, Z direction for 3 times		
		Malfunction	100m/s^2 (approx. 10G) in each X, Y, Z direction for 3 times		
Life expectancy	Mechanical		≥ 20,000,000 operations (at 18,000 operations/hour)	≥ 10,000,000 operations (at 18,000 operations/hour)	
	Electrical		≥ 100,000 operations (at 1,800 operations/hour)		
Environment	Ambient temperature		-40 to 70℃		
	Ambient humidity		5 to 85%RH		
Weight			Approx. 20g		

※Environment resistance is rated at no freezing or condensation.

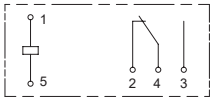
▣ Dimensions

(unit: mm)

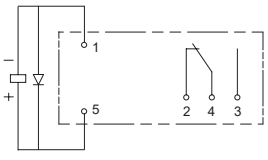




- Circuit diagram (bottom view)
  - G2R-1-S



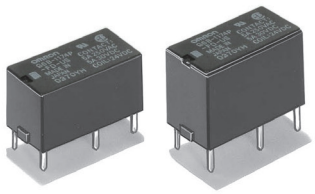
  - G2R-1-SD (DC)



OMRON Power Relay 1 Form A

▣ Features

- Slim type
- High capacity, high reliability



▣ Coil Specifications

Model	Rated voltage	Must operate voltage	Must release voltage	Rated current	Coil resistance	Power consumption
G6B-1174P-FD-US	24VDC⎓	≥ 70% of rated voltage	≤ 10% of rated voltage	8.3mA	2,880Ω	200mW

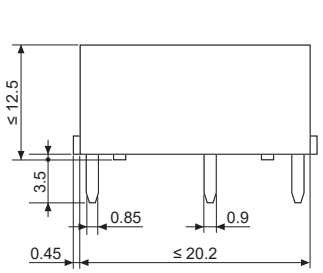
▣ Contact Specifications

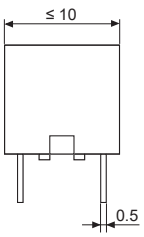
Manufacture			OMRON
Model			**G6B-1174P-FD-US**
Contact	Arrangement		1 Form A (SPST-1a)
	Material		AgSnIn type
	Resistance (initial)		30mΩ (5VDC⎓ 1A)
Rating	Rated load (resistive load)		5A 250VAC～, 5V 30VDC⎓
	Max. switching power		1,250VA, 150W
	Max. switching voltage		380VAC～, 125VDC⎓
	Max. switching current		5A
Electrical characteristics	Insulation resistance (initial)		≥ 1,000MΩ (at 500VDC megger)
	Dielectric strength	Between contact-coil	3,000VAC 50/60Hz for 1 minute
		Between open contacts	1,000VAC 50/60Hz for 1 minute
	Surge voltage		6,000V
	Operate time (supplying rated voltage)		≤ 10ms
	Release time (supplying rated voltage)		≤ 10ms
Mechanical characteristics	Vibration	Mechanical	1.5mm amplitude at frequency of 10 to 55Hz (for 1 min) in each X, Y, Z direction for 1 hour
		Malfunction	1.5mm amplitude at frequency of 10 to 55Hz (for 1 min) in each X, Y, Z direction for 10 minute
	Shock	Mechanical	1,000m/s^2 (approx. 100G) in each X, Y, Z direction for 3 times
		Malfunction	100m/s^2 (approx. 10G) in each X, Y, Z direction for 3 times
Life expectancy	Mechanical		≥ 50,000,000 operations (at 300 operations/min)
	Electrical		≥ 100,000 operations (5A, 250VAC, 30VDC) (at 30 operations/min)
Environment	Ambient temperature		-25 to 70℃
	Ambient humidity		5 to 85%RH
Weight			Approx. 5g

※Environment resistance is rated at no freezing or condensation.

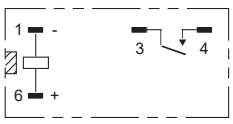
▣ Dimensions

(unit: mm)





● Circuit diagram (bottom view)



● PCB pattern