Panasonic
INDUSTRY

RELAYS

Short form

Your Committed Enabler

IN Your Future

Equipping. Enabling. Inspiring.

On our Relays

Hardly any sector of the working or living space can exist without modern relay technology today. Panasonic Industry meets the various needs with a broad range of innovative and economical relays series.

After more than 40 years of experience at the forefront of relay innovation and development, Panasonic Industry today offers a portfolio of more than 2,000 electromechanical relay versions in the field of miniaturized relays - from ultra-miniature SMD signal relays to robust, compact industrial high power types.

With our new short form we'll invite you to gain a quick and comprehensive overview on our new relay portfolio: our endurance runners, our innovations – and for sure the ones that suit your project.

About Panasonic Industry

As established part of the global Panasonic Corporation with long-grown and European relationships we strive for continuous innovation and share the company's overarching purpose: **Shaping the future for the better.**

To take your ideas to the next level, we at Panasonic Industry research, develop and produce technologies and components for a vast range of industries.

From full-custom batch-size 1 factory automation devices to next-gen electronic and electromechanical components manufactured in billions of units, our clear focus on innovation, performance and reliability sets the bar high in multiple market sectors – and trends.

Information, Telecommunication. Measuring Technologies

White Goods

Control Engineering

Building Automation

System Engineering

Renewable Energy, Energy Distribution

Railway Engineering

Automotive

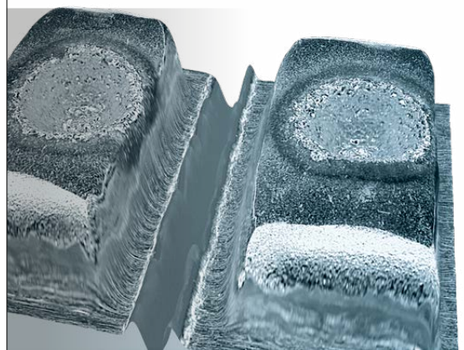
Service & Support

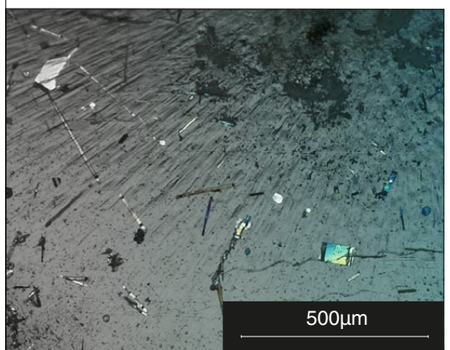
DOES THIS RELAY SUIT MY IDEA? AND IF NOT - WHICH ONE DOES?

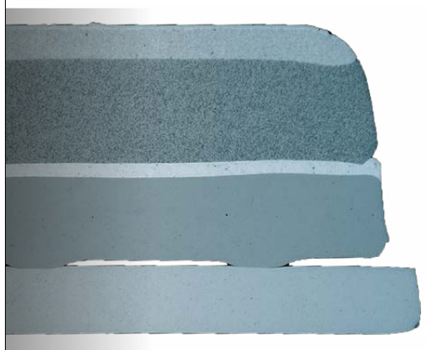
Albeit the standard relay datasheet covers more than 80% of all applications, the paper can only cover a certain scope of values and parameters, mostly concerning worst case scenarios, for example in terms of temperature.
When it comes to specific requests like switching 8A with a 6A relay, our laboratories in Germany are able to support you. Our engineers do not only perform lifetime tests but provide you with an in-depth view at the application parameters. In almost every case, there is a relay that fits your project, even if the datasheet wouldn't reveal it in the first place.

IS IT POSSIBLE TO SWITCH 8A WITH A SLIM 6A RELAY?

Application support is then followed by the analysis part: Continuous tests during production will ensure a high and constant quality level.
When it comes to lifetime or customer related investigations, latest technology shows results about the condition, wear-out or remaining lifetime of relays.Finally, we encourage our customers to address our support in case of questions and claims. Resorting to many decades of experience, the reason of a relay fault is mostly found not the in the relay itself, but in the context of improper component decision or external factors like overcurrent, mechanical stress or hazardous materials.







Industrial Relays

Proven, reliable, innovative and energy-efficient switching solutions

We find ourselves already in the midst of the next industrial revolution, which is not only a question of visions and ideas - but also of nex-gen reliable and efficient components making a true difference in daily operations.

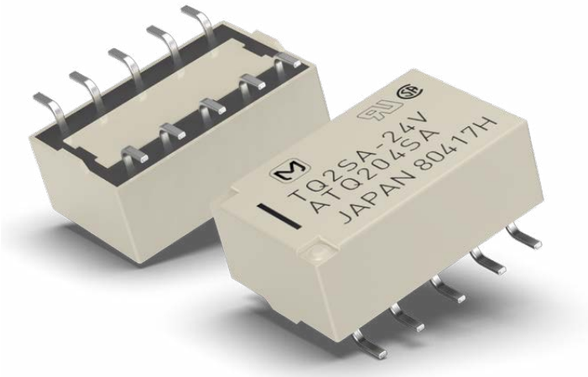
Get a glimpse on what Panasonic Industry has to offer in its latest portfolio of industrial relays – from circuit board connection types to plug-in or screw terminals, from low-level load switching to double-digit ampere values. Discover the variety of industrial switching.

Load switching capability ranges from low-level signals to double-digit ampere values.

Various connection types such as circuit boards, plug-in or screw terminals offer a large variety of options that are tailored to your application.

...NO MATTER IF YOU‘RE AIMING
FOR HIGH VOLTAGE ROBUSTNESS
OR LOW COIL POWER LOSS.

Signal Relays

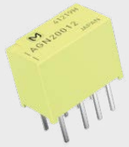
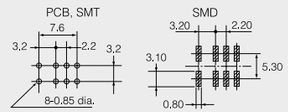
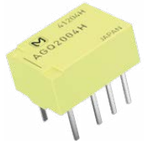
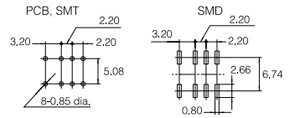
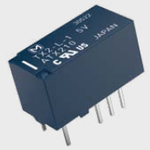
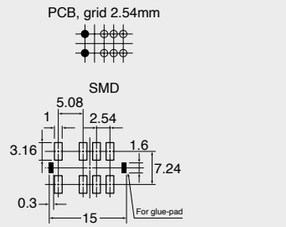


With a compact size and switching capability up to 2A, signal relays are used in a wide field of communication and security applications as well as in lighting, measurement or automation equipment.

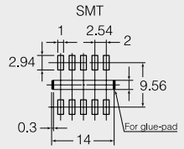
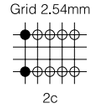
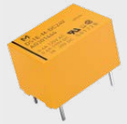
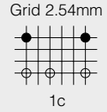
Galvanic separation between control and load circuit and ruggedness against high inrush or voltage peaks (overload) makes them an ideal choice for any kind of application.

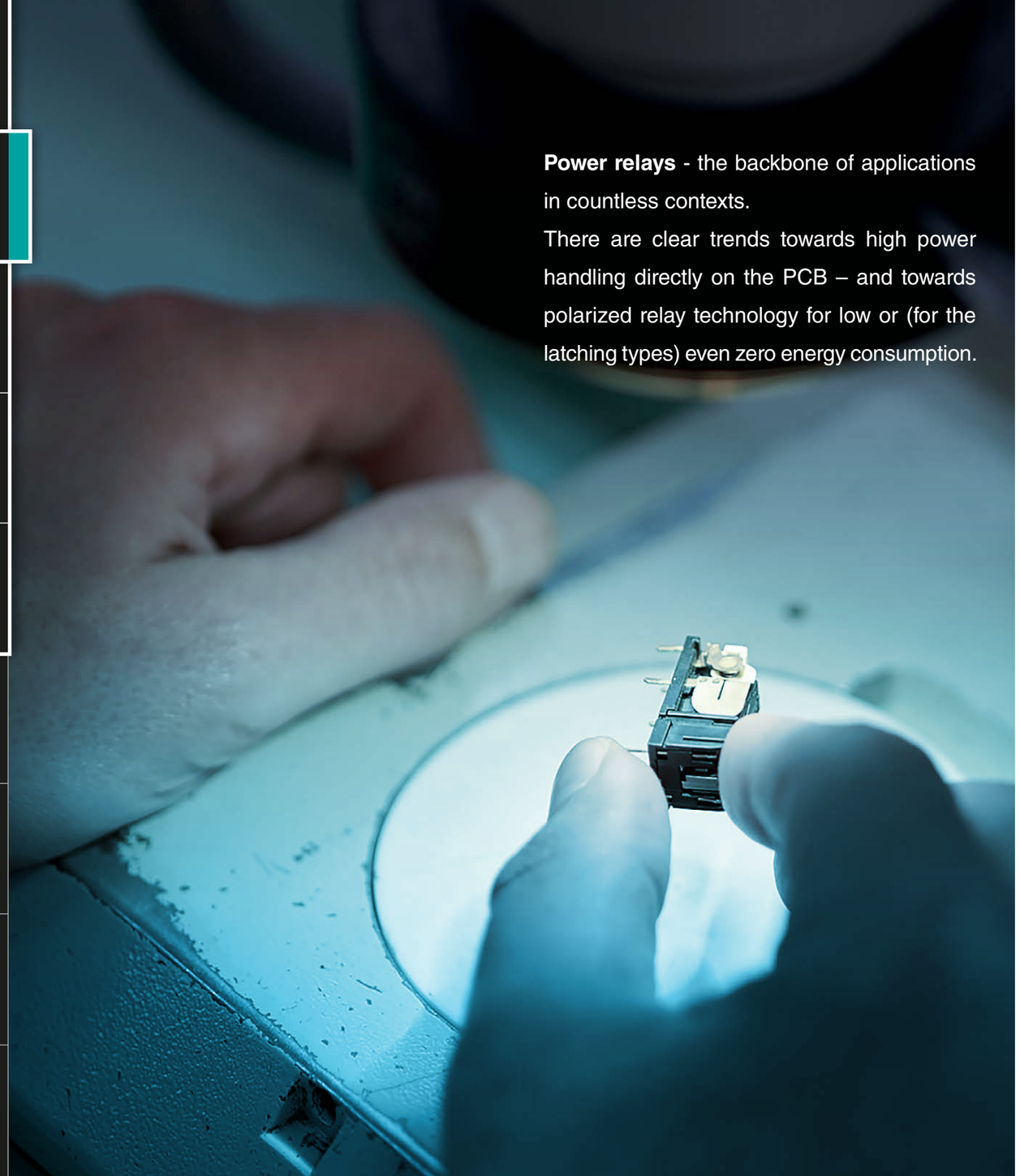
Even battery-driven or energy harvesting applications can benefit from the modern latching technology all signal relays offer. Power is only needed for few hundred milliseconds during on- or off-switching, in between the relays needs no energy to keep the state.

Industrial Relays | Signal Relays

Series	Features	Coil			Mounting (bottom view)
AGN  10.6 x 7.4 x 10.0mm  10.6 x 7.2 x 9.0mm RTIII 2c · 1 coil latching CSA · UL · BSI	» Compact slim body » 1,500V FCC » 2,500V Telcordia » Twin crossbar contacts ensures high contact reliability » High sensitivity 100mW type available 1A · 10µA minimal · 110V DC 125V AC	DC 1.5, 3, 4.5, 6, 9, 12V		DC 24V	THT SMD  Go To Overview
		Single side stable			
		140mW		230mW	
		Sensitive / 1 coil latching type			
		100mW		120mW	
AGQ  10.6x 8.4 x 5.4mm  10.6x 7.2 x 5.2mm RTIII 2c · 1 coil latching CSA · UL · BSI	» Space saving flat body » 1,500V FCC » 2,500V Telcordia » The use of twin crossbar contacts ensures high contact reliability » Power type for 3,5A inrush current available 1A · 10µA minimal · 110V DC 125V AC	DC 1.5, 3, 4.5, 6, 9, 12V		DC 24V	THT SMD  Go To Overview
		Single side stable			
		140mW		230mW	
		Sensitive / 1 coil latching type			
		100mW		120mW	
TX  15 x 7.4 x 8.4mm  15 x 7.4 x 8.2mm RTIII 2c · 1 coil latching · 2 coil latching CSA · UL · BSI	» 1,500V FCC » 2,500V Telcordia » 3 types of surface-mount terminals available 2A · 10µA minimal · 220V DC 220V AC	DC 1.5, 3, 4.5, 5, 6, 9, 12V	DC 24V	DC 48V	THT SMD  Go To Overview
		Single side stable: 140mW		270mW	
		1 coil latching: 100mW		–	
		2 coil latching: 200mW			
	TX-TH high inrush type 7.5A inrush · 2A · 10µA minimal · 220V DC 250V AC	Single side stable: 140mW		270mW	
		1 coil latching: 100mW		–	
		2 coil latching: 140mW			
	TX-D high insulation type » Conforms to insulation in EN41003 / EN60950 » Surge breakdown voltage 6kV (contacts to coil) 2A · 10µA minimal · 220V DC 250V AC	Single side stable: 200mW	230mW	–	
		1 coil latching: 150mW	170mW		
	TX-S sensitive type » Very low operating power 1A · 10µA minimal · 110V DC 125V AC	Single side stable: 50mW	70mW	–	
		1 coil latching: 35mW	50mW		
		2 coil latching: 70mW	150mW		

Industrial Relays | Signal Relays

Series	Features	Coil			Mounting (bottom view)
TQ SMD RTIII 2c · 1 coil latching · 2 coil latching  14 x 9 x 5.6mm CSA UL	» Ultra low profile 5.8mm » Surge withstand 2,500V » 3 types of surface-mount terminals available 2A · 10µA minimal · 220V DC 125V AC	DC 1.5, 3, 4.5, 5, 6, 9, 12V	DC 24V	DC 48V	SMD  Go To Overview
		Single side stable: 140mW	200mW	300mW	
		1 coil latching: 70mW	100mW	–	
		2 coil latching: 140mW	200mW	–	
TQ THT RTIII 2c · 1 coil latching · 2 coil latching  14 x 9 x 5mm CSA UL	» 1,500V FCC » Low thermal electromotive force approx. 5 µV 1A · 10µA minimal · 110V DC 125V AC	DC 3, 4.5, 5, 6, 9, 12V	DC 24V	DC 48V	THT  Go To Overview
		Single side stable: 140mW	200mW	300mW	
		1 coil latching: 100mW	150mW	–	
		2 coil latching: 140mW	300mW	–	
DS1 RTIII 1c · 1 coil latching · 2 coil latching  15 x 9.9 x 9.9mm CSA UL	» 1,500V FCC 2A · 10µA minimal · 220V DC 250V AC	DC 1.5, 3, 5, 6, 9, 12, 24, 48V			THT SMD  Go To Overview
		Single side stable: 200mW			
		1 coil latching: 90mW			
		2 coil latching: 120mW			

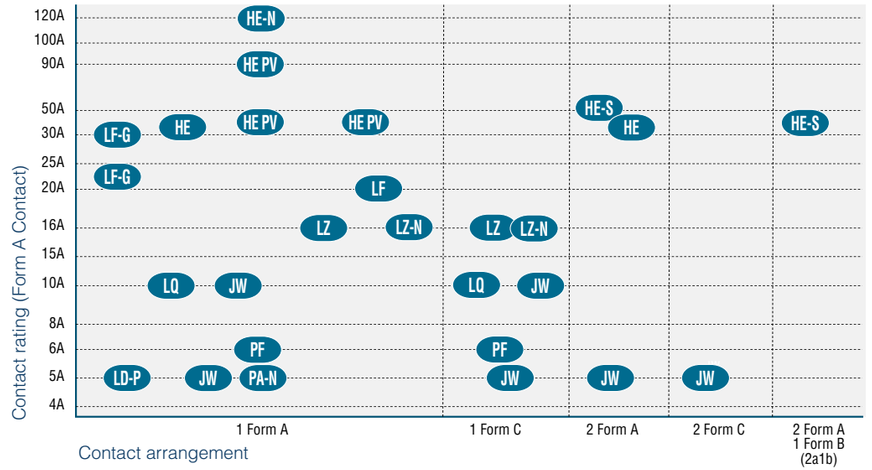


Power relays - the backbone of applications in countless contexts.

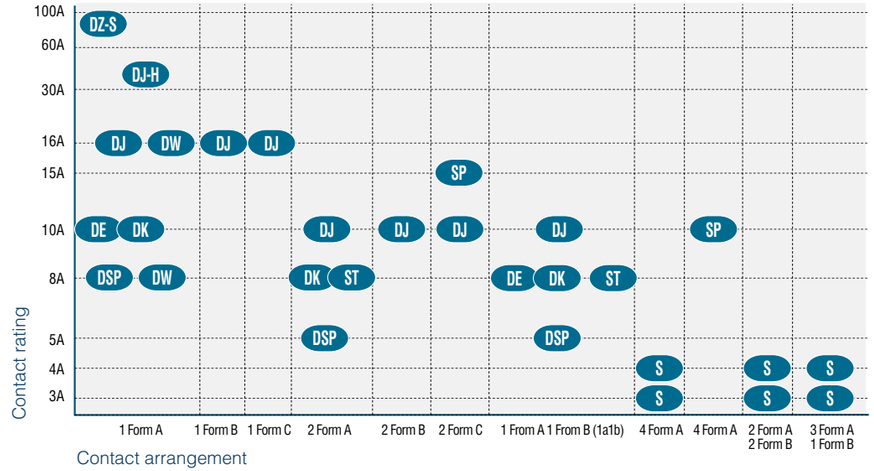
There are clear trends towards high power handling directly on the PCB – and towards polarized relay technology for low or (for the latching types) even zero energy consumption.

Power Relays

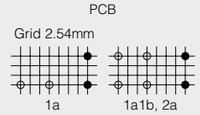
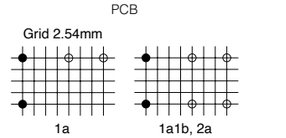
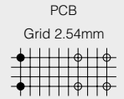
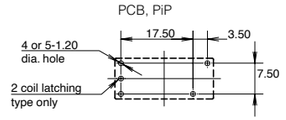
Non polarized type power relays



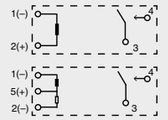
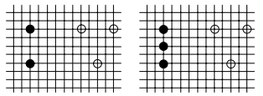
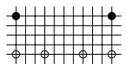
Polarized type power relays (with latching)



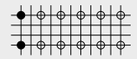
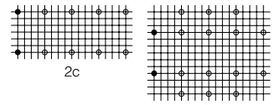
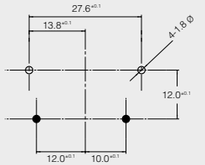
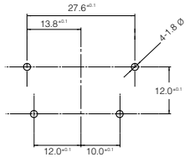
Industrial Relays | Power Relays

Series	Features	Coil	Breakdown voltage			Surge voltage	Mounting (bottom view)
			open contacts	contact sets	contacts to coil		
DSP  20.2 x 11 x 10.5mm RTIII 1a · 1a1b · 2a · 1 coil latching · 2 coil latching CSA · TÜV · UL	» Miniature high sensitive power relay » High breakdown voltage » Creepage & clearance distance min. 3.5mm 8A 1a · 5A 1a1b, 2a · 220V DC 400V AC	DC 3, 5, 6, 9, 12, 24V Single side stable & 2 coil latching: 300mW 1 coil latching: 150mW	1,000Vrms	2,000Vrms	3,000Vrms	5,000V	THT  Go To Overview »
DK  20 x 12.5 x 9.7mm  20 x 15 x 9.7mm RTIII 1a · 1a1b · 2a · 2 coil latching CSA · TÜV · UL · VDE	» Creepage & clearance distance min. 8mm: DK2A-L1/L2 min. 6.8mm DK1A1B-L1/L2 min. 6.8mm 10A 1a · 8A 1a1b, 2a · 125V DC 400V AC	DC 3, 5, 6, 9, 12, 24V 200mW	1,000Vrms	4,000Vrms	4,000Vrms	10,000V	THT  Go To Overview »
DE  25 x 12.5 x 12.5mm RTIII 1a · 1a1b · 2a · 1 coil latching · 2 coil latching CSA · TÜV · UL · VDE	» Conforms to VDE0631 » Low coil power » High switching capacity: » 16A = 25,000 » 10A = 100,000 switching cycles » Creepage & clearance distance min. 8mm 16A 1a · 8A 1a1b, 2a · 230V DC 440V AC	DC 1.5, 3, 4.5, 5, 6, 9, 12, 24, 48V Single side stable & 2 coil latching: 200mW 1 coil latching: 100mW	1,000Vrms	4,000Vrms (1a1b, 2a)	5,000Vrms	12,000V	THT  Go To Overview »
DW/ DW-HL  24 x 10 x 18.8 (15.8)mm RTIII 1a · 1 coil latching · 2 coil latching UL / C-UL · VDE	» 15.8mm low profile type available » HL inrush type available (TV-8 UL/C-UL) » IEC60335-1* compliant, PTI325V (VDE approved) type available » Creepage & clearance distance min. 6mm 16A 1a · 277V AC	DC 3, 5, 6, 9, 12, 24V 1 coil latching: 200mW 2 coil latching: 400mW	1,000Vrms	–	5,000Vrms	12,000V	THT PiP  Go To Overview »

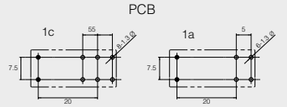
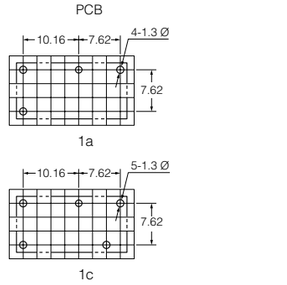
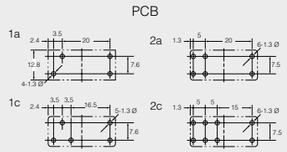
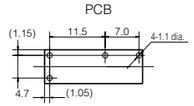
Industrial Relays | Power Relays

Series	Features	Coil	Breakdown voltage			Surge voltage	Mounting (bottom view)
			open contacts	contact sets	contacts to coil		
DJ-H  39 x 15 x 33 mm RTII 1a · 1 coil latching · 2 coil latching UL VDE	» Manual Lever Type » Creepage and clearance distance min. 8 mm » High inrush current capacity ~ 500A » EN 60669 compliant 50A 1a · 480V AC	DC 5, 6, 9, 12, 24V 1 coil latching: 1,000mW 2 coil latching: 2,000mW	1,500Vrms	–	4,000Vrms	12,000V	THT PCB  Go To Overview
DJ  29 x 13 x 16/16.5 mm RTII · RTIII 1a · 1b · 1a1b · 1c · 1 coil latching 2a · 2b · 2c · 2 coil latching UL VDE	» Optional available with manual testbutton » Creepage and clearance distance min. 8 mm » Tungsten pre contact available 20A 1a · 16A 1b, 1c · 10A 1a1b, 2a, 2b, 2c · 125V DC 400V AC	DC 5, 6, 12, 24, 48V Single side stable & 2 coil latching: 250mW 1 coil latching: 150mW	1,000Vrms	–	4,000Vrms	10,000V	THT PCB Grid 2.54mm  Single side stable, 1 coil latching (1c) 2 coil latching (1c) Go To Overview
DZ-S  30 x 38.5 x 17.5 mm 1a · 1 coil latching · 2 coil latching	» IEC62055-31 UC3 compliant (short current 3,000 A) » High switching capacity 90 A 250 VAC (resistive load) » Twin contacts for low temperature rise 90A · 277V AC	DC 5, 12, 24V 1 coil latching: 1500mW 2 coil latching: 3,000mW	2,000Vrms	–	4,000Vrms	12,000V	Terminal mounting Terminal mounting Go To Overview
ST  31 x 14 x 11.3 mm RTIII 1a1b · 2a · 1 coil latching · 2 coil latching CSA UL VDE	» High inrush capability, TV rating » Frictionless pivoted rotating armature » Socket available » Not for new applications » Creepage and clearance distance more than 3 mm, approx. 4 mm 8A · 250V DC 380V AC	DC 3, 5, 6, 9, 12, 24, 48V Single side stable & 2 coil latching: 240mW 1 coil latching: 130mW	1,200Vrms	2,000Vrms	3,750Vrms	6,000V	THT PCB Grid 2.54mm  (Single side stable) Go To Overview

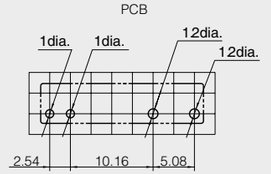
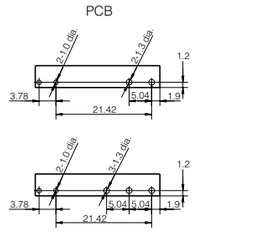
Industrial Relays | Power Relays

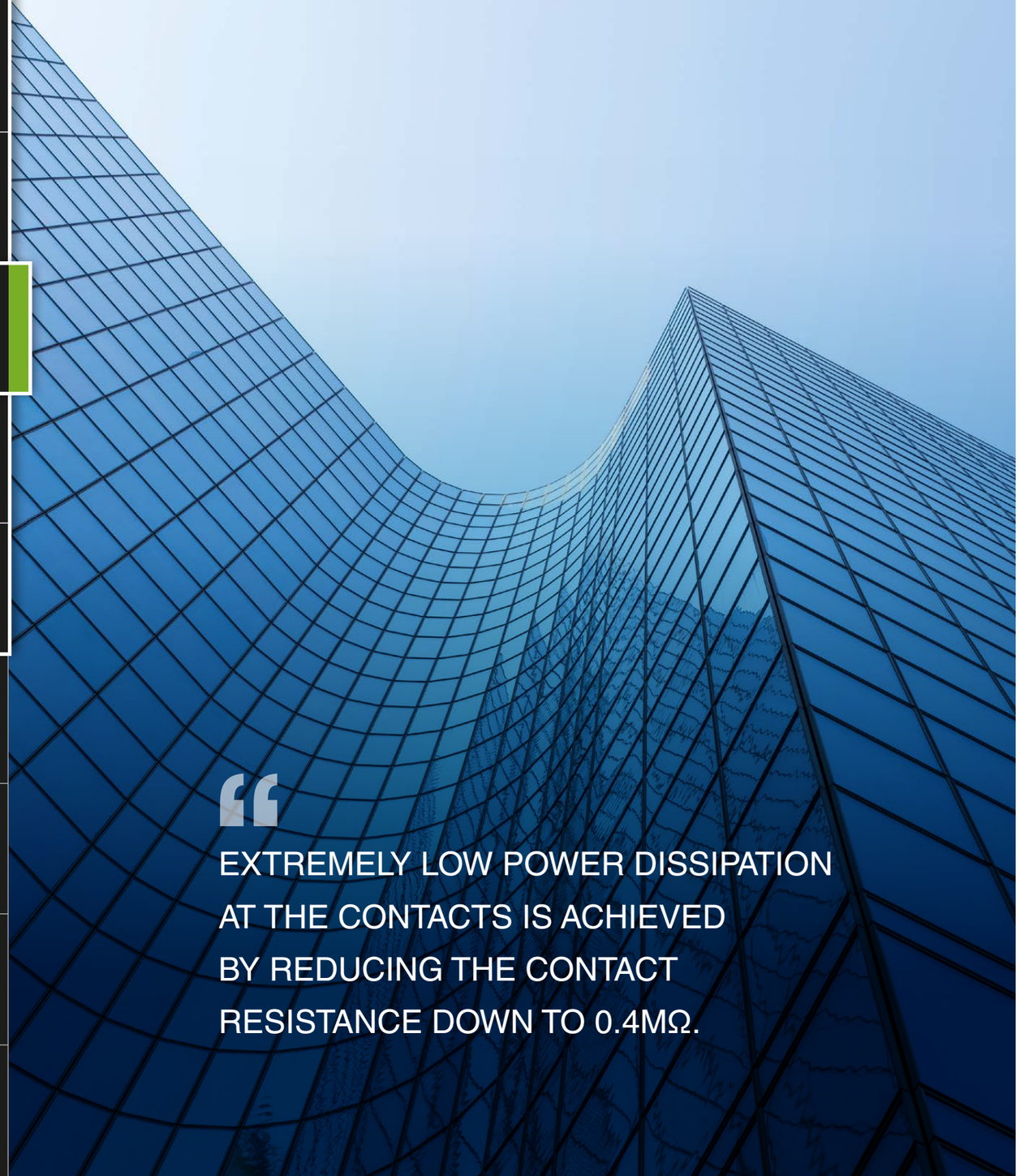
Series	Features	Coil	Breakdown voltage			Surge voltage	Mounting (bottom view)
			open contacts	contact sets	contacts to coil		
S  28 x 12 x 10.4mm RTIII 4a · 2a2b · 3a1b · 1 coil latching · 2 coil latching · UL	» 5-layer contact for wide switching capacity range: 100µA…4A » High vibration and shock resistance » Low thermal electromotive force (approx. 3µV) » Sockets available 4A · 30V DC 250V AC	DC 3, 5, 6, 12, 24, 48V Single side stable & 2 coil latching: 200mW (48V: 271mW) 1 coil latching: 100mW (48V: 144mW)	750Vrms	1,000Vrms	1,500Vrms	–	THT PCB Grid 2.54mm  Go To Overview
SP  50 x 25.6 x 22mm  50 x 36.8 x 22mm 2c · 4c · 2 coil latching · CSA · UL · TÜV	» Polarized power relay with rotating armature » High sensitivity » High vibration and shock resistance » Socket available 15A · 110V DC 250V AC	DC 3, 5, 6, 12, 24, 48V 300mW	1,500Vrms	3,000Vrms	3,000Vrms	–	THT Plug-in PCB, Plug-in Grid 2.54mm  2c 4c Go To Overview
LF  30.1 x 15.7 x 23.3mm RTII 1a · TÜV · UL · VDE · CQC	» Ideal for compressor and inverter loads » High insulation resistance » Inrush current:102A/200V AC 224A/100V AC » High surge withstand voltage » Creepage and clearance distance min. 8mm 20A · 250V AC	DC 5, 6, 9, 12, 18, 24V 900mW	1,000Vrms	–	5,000Vrms	10,000V	THT Terminal mounting PCB, Top mounting  TMP type Go To Overview
LF-G  30.1 x 15.7 x 23.3mm RTII 1a · UL/C-UL · VDE	» Ideal for solar inverters » Contact gap 1.5mm / 1.8mm » Compliant with IEC62109 and VDE0126 » Inrush current: 102A/200V AC 224A/100V AC » Creepage distance contact-coil: min. 9.5mm » Clearance distance contact-coil: min. 6.5mm 22A · 31A ALFG2 · 33A ALFG2*1 · 277V AC	DC 9, 12, 18, 24V 1,400mW	2,500Vrms	–	4,000Vrms	6,000V	THT PCB  Go To Overview

Industrial Relays | Power Relays

Series	Features	Coil	Breakdown voltage			Surge voltage	Mounting (bottom view)
			open contacts	contact sets	contacts to coil		
LZ / LZ-N  28.8 x 12.5 x 15.7 mm RTIII LZ · RTII 1a · 1c UL · VDE	» Low profile relay (15.7 mm) » EN60335-1 GWT compliant » Ambient temperature up to 105 °C » Creepage and clearance distance min. 10 mm 16A · 250V DC 440V AC	DC 5, 9, 12, 18, 24V (LZ 48V) 400mW	1,000Vrms	–	5,000Vrms	10,000V	THT  Go To Overview
LQ  20 x 10 x 16 mm RTIII 1a · 1c UL / C-UL · VDE	» Low power consumption » F-coil type for 105 °C ambient temperature available » Creepage and clearance distance: 1a: min. 4.55 mm 1c: min. 3.53 mm 10A · 277V AC	DC 5, 6, 9, 12, 18, 24V 200mW (1a) 400mW (1c)	1,000Vrms (1a) 750Vrms (1c)	–	4,000Vrms	8,000V	THT  Go To Overview
JW  28.6 x 12.8 x 20 mm RTIII 1a · 2a · 1c · 2c CSA · SEV · TÜV · UL · VDE · SEMKO	» Class B coil insulation types available » Creepage and clearance distance min. 8 mm between contacts and coil (for 2 changeover contacts min. 7.5 mm) » Universal terminal footprint 10A 1a, 1c · 5A 2a, 2c · 110V DC 440V AC	DC 5, 6, 9, 12, 18, 24, 48V 530mW	1,000Vrms	3,000Vrms (2a, 2c)	5,000Vrms	10,000V	THT  Go To Overview
LD-P  20.3 x 7 x 15 mm RTIII 1a UL / C-UL · VDE · CQC	» Slim type: width 7 mm » Creepage and clearance distance min. 6 mm » EN60695 (GWT2-11, GWFI2-12,GWIT2-13) data available 5A · 30V DC 277V AC	DC 5, 6, 9, 12, 18, 24V 200mW	750Vrms	–	4,000Vrms	10,000V	THT  Go To Overview

Industrial Relays | Power Relays

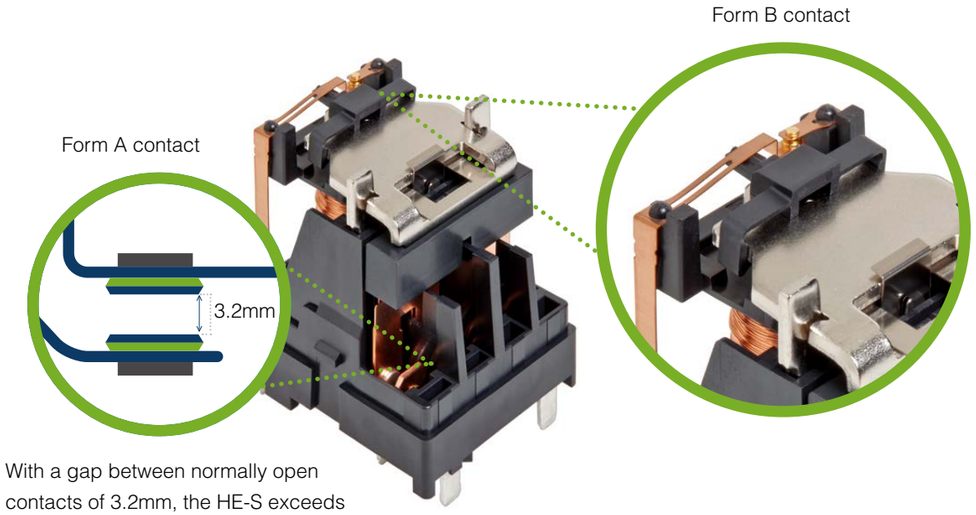
Series	Features	Coil	Breakdown voltage			Surge voltage	Mounting (bottom view)
			open contacts	contact sets	contacts to coil		
PA-N  20 x 5 x 12.5mm RTIII 1a UL / C-UL TÜV	» High density mounting » Low operating power » Complies with IEC61010 reinforce dinsulation standards » Insulation distance: 5.29mm clearance, 5.35mm creepage » Complies with Standard for Hazardous Location (ANSI/ ISA 12.12.01) 5A 110V DC 250V AC	DC 3, 4.5, 5, 6, 9, 12, 18, 24V 110mW	1,000Vrms	–	3,000Vrms	6,000V	THT  Go To Overview
PF  28 x 5 x 15mm RTIII 1a 1c UL / C-UL VDE CSA	» Slim size permits high density mounting » Slim relay for grid applications » Insulation construction conforms to VDE0700 » Gold flash or gold-clad contacts available » Clearance distance min. 6.0mm » Creepage distance min. 8mm » Bent pin type available » EN60335-1, clause 30 (GWT) approved 6A 250V AC 300V DC 400V AC	DC 4.5, 5, 6, 12, 18, 24, 48, 60V 170mW 48V: 217mW 60V: 175mW	1,000Vrms	–	4,000Vrms	6,000V	THT  Go To Overview



EXTREMELY LOW POWER DISSIPATION AT THE CONTACTS IS ACHIEVED BY REDUCING THE CONTACT RESISTANCE DOWN TO 0.4MΩ.

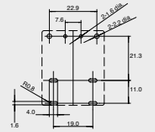
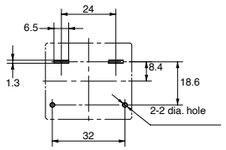
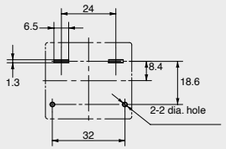
High Capacity Relays

Our energy grid is changing. Decentralized power generation like wind engines or solar panels on each building require new ways to handle and distribute the current that keeps our modern life running.
In addition, e-mobility solutions bring high power applications to each and everyone. To miniaturize this technology - and to make it affordable, HE relays are designed to bring the high power handling on the PCB – without wiring, with improved reliability and low power losses.

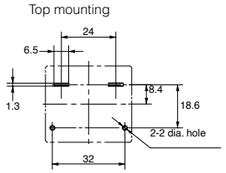
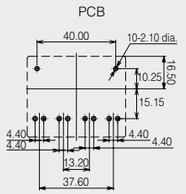


With a gap between normally open contacts of 3.2mm, the HE-S exceeds mandatory regulations.

Industrial Relays I High Capacity Relays

Series	Features	Coil	Breakdown voltage			Surge voltage	Mounting (bottom view)
			open contacts	contact sets	contacts to coil		
HE-S  30 x 36 x 40mm RTII 2a 2a1b CSA TÜV UL VDE	» High-capacity and long life » 170mW coil holding power for energy saving » Contact gap: 3.2mm » Safety: Mirror contact mechanisms according to IEC 60947-4-1 35A 300V DC 480V AC	DC 6, 9, 12, 24, 48V 1,880mW	2,000Vrms	5,000Vrms	5,000Vrms (between coil and Form A contacts)	10,000V	THT Recommended PC board pattern (Bottom view)  Go To Overview
HE-Y5/ HE-PV  33 x 38 x 36.3mm 1a CSA UL VDE	» Compliant with European photovoltaic standard VDE0126 » Compliant with EN61810-1 2.5kW surge breakdown voltage (between contacts) » Contact gap 2.5mm » Only 310mW holding power 35A PV type 48A Y5 type 277V AC	DC 6, 9, 12, 24V 1,920mW	2,000Vrms	-	5,000Vrms	10,000V	THT Top mounting  Go To Overview
HE-Y6  33 x 38 x 38.8mm RTII 1a CSA UL VDE	» Compliant with European photovoltaic standard VDE0126 » Compliant with EN61810-1 2.5kW surge breakdown voltage (between contacts) » Contact gap 3.0mm » Only 310mW holding power 90A 277V AC	DC 6, 9, 12, 24V 1,920mW	2,000Vrms	-	5,000Vrms	10,000V	THT Top mounting  Go To Overview

Industrial Relays I High Capacity Relays

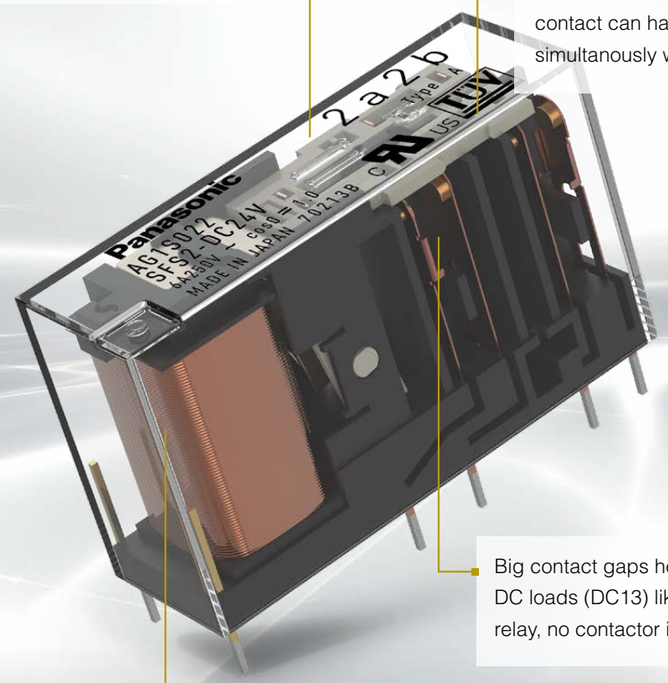
Series	Features	Coil	Breakdown voltage			Surge voltage	Mounting (bottom view)
			open contacts	contact sets	contacts to coil		
HE-Y7  50 x 40 x 43mm RTII 1a CSA UL/C-UL VDE	» For inverter, battery charger, battery storage » Contact gap 3.6mm » Only 400mW holding power » Very low contact resistance » Creepage & clearance distance min. 10.55mm 120A 800V AC	DC 6, 9, 12, 24V 2,500mW	2,000Vrms	-	5,000Vrms	10,000V	THT  Go To Overview
HE-V  41 x 50 x 39.4 mm 2a UL/C-UL VDE	» Max. 1,000V DC, 20A cutoff » Coil holding power 210mW » Protective construction: Flux-resistant type » Contact gap: min. 3.0mm » Clearance distance min. 8mm » Creepage distance min. 9.6mm 25A 1000V DC	DC 6, 9, 12, 15, 24V 1,920mW	2,000Vrms	4,000Vrms	5,000Vrms	10,000V	THT  Go To Overview
HE-R  58 x 35 x 47mm 4a 4a1b UL/C-UL VDE	» Compliant IEC 62955 » 1b mirror contact structure » Contact gap 3.6mm » Only 490mW holding power » Creepage / clearance >8.0mm » Low operation noise 61dB 40A 3 phase 440V AC	DC 6, 9, 12, 24V 4,000mW	2,000Vrms	-	5,000Vrms	10,000V	THT Go To Overview

Industrial Relays I High Capacity Relays

Series	Features	Coil	Breakdown voltage			Surge voltage	Mounting (bottom view)
			open contacts	contact sets	contacts to coil		
EP 1 66.8 x 37.9 x 45mm 2 78 x 40 x 48.1mm 3 75.5 x 40 x 79mm 4 95 x 45 x 86.4mm 5 111 x 63 x 74.7mm RTIV 1a UL / C-UL	» Max. cut-off current 2,500A/300VDC (300A type) » Max. 1,000VDC contact voltage » Low operating noise » High contact reliability » DC type with sealed capsule		2,500Vrms	-	2,500Vrms		THT TM type Lead wire Connector PCB 10A PC board type 10A TM type 20A type 80A type 300A type Go To Overview
1 10A 400V DC		DC 24, 48V 1.24W					
2 20A 400V DC		DC 12, 100V 3.9W					
3 80A 400V DC		DC 12, 100V 4.2W					
4 200A 400V DC		DC 12, 100V 6.0W					
5 300A 400V DC		DC 12, 100V 40W 4W holding power					

A safety relay has two or more forcibly guided contacts according to **EN 61810-3**
In case of SFS series, it is realized by the white actuator.

1mA 5V up to **6A 250VAC** (SFS series), the silver alloy contacts are designed to switch a wide range of loads. Each contact can handle maximum load simultanously without derating.



Big contact gaps helps to switch inductive DC loads (DC13) like valves directly with the relay, no contactor is needed in between.

All Panasonic Industry safety relays use a **polarized coil** system for low energy consumption

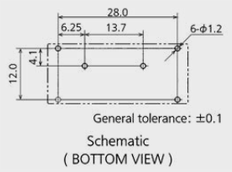
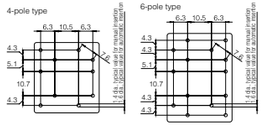
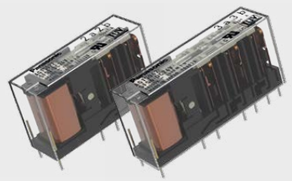
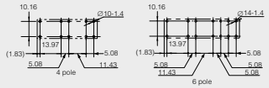
ALL SAFETY RELAYS COMPLY WITH EN 61810-3

Safety Relays

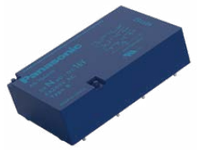
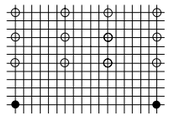
In relays designed according to the standard EN 61810-3, the contacts are interconnected in such a way that in case of failure, e.g. when a load contact for a motor welds, the corresponding forcibly guided contacts are blocked. Redundancy in the circuit can, for example, allow a motor to be shut off whereby the blocked contact prevents the motor from being turned on again because the release circuit is not closed.

What this boils down to is, that relays with forcibly guided contacts are usually power relays with several NO (1a) and NC (1b) contacts (minimum 1a1b) that comply with the relay standards EN 61810-1 and EN 61810-3. This technology guarantees defined and hence safe operating conditions in the event of a failure.

Industrial Relays | Safety Relays

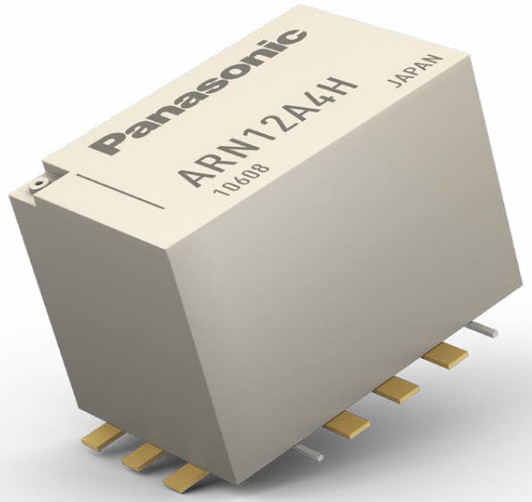
Series	Features	Coil	Breakdown voltage			Surge voltage	Mounting (bottom view)
			open contacts	contact sets	contacts to coil		
SFM  RTII PiP type / RTIII THT type 33.0 x 14.0 x 7.8mm 1a1b UL / C-UL, TÜV	» Extremely low height » Low holding power 100mW » High shock resistance >20g » Reinforced insulation ≥ 5.5mm (V=230V overvoltage category III, 6KV) on NO side » Ambient temperature -40 to +85°C » Tape & Reel available 6A N.O. / 4A N.C. / 30V DC 250V AC	DC 3, 5, 12, 16, 18, 21, 24V 270mW	1,500Vrms	- (no contact sets next to each other)	2,500Vrms for NC side 4,000Vrms for NO side		THT PiP  Go To Overview
SFY  RTIII 31.0 x 28.6 x 14.5mm 39.0 x 28.6 x 14.5mm 2a2b 3a1b 4a2b 5a1b TÜV, UL	» Gold clad contacts on request » Reinforced insulation according to EN 50178, creepage and clearance distance ≥5.5mm (V=230V overvoltage category III, 6 kV) » Ambient temperature -40 to +85°C » Tested as sealed device according to IEC / EN 60079-15:2010 clause 22.5 (VDE) 8A N.O. / 8A N.C. / 400V DC 250V AC	DC 5, 12, 18, 21, 24V 670mW	1,500Vrms	4,000Vrms	2,500 / 4,000Vrms		THT PCB  Go To Overview
SFS  RTIII 40.0 x 13.0 x 24.0mm 50.0 x 13.0 x 24.0mm 2a2b 3a1b 4a2b 5a1b 3a3b TÜV, UL / C-UL, CQC	» Slim profile reduces mounting area » PC board sockets available » DIN-rail terminal sockets available » RTII (IP54), RTIII 4pole on request » Ambient temperature -40 to +85°C » LED indication type available 6A N.O. / 6A N.C. / 30V DC 250V AC	DC 12, 18, 21, 24, 48V 360mW (4pole) 500mW (6pole)	2,500Vrms	4,000Vrms	4,000Vrms		THT PCB  Go To Overview

Industrial Relays | Safety Relays

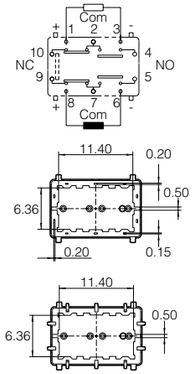
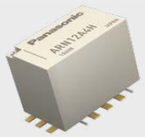
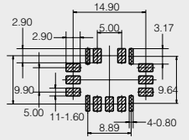
Series	Features	Coil	Breakdown voltage			Surge voltage	Mounting (bottom view)
			open contacts	contact sets	contacts to coil		
SFN4D  53.3 x 33 x 14.5mm RTIII 4a2b TÜV UL CSA	» EN 61810-3, Type B safety double contact » Reinforced insulation, creepage and clearance distance 5.5mm 8A N.O. 8A N.C. 500V DC 500V AC	DC 5, 9, 12, 16, 18, 21, 24, 36, 48, 60V 390mW (5 - 24V) 420mW (36 - 60V)	2,500Vrms	4,000Vrms	5,000Vrms		THT PCB Grid 2.5mm  4a2b Go To Overview »
SF  53.3 x 25 x 16.5mm 53.3 x 33 x 16.5mm RTIII 2a2b 3a1b 4a4b TÜV UL CSA	» SF4D: EN 61810-3, Type B safety double contact » SF2D: EN 61810-3, Type A safety double contact » SF3: EN 61810-3, Type A » For applications according to EN 50155 » IEC/EN 60335-1 (GWT) available 8A N.O. 8A N.C. 400V DC 400V AC	DC 5, 9, 12, 18, 21, 24, 36, 48, 60V 500mW	2,500Vrms	4,000Vrms	5,000Vrms		THT Go To Overview »

High Frequency Relays

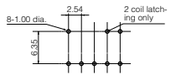
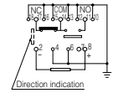
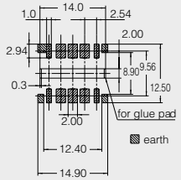
Microwave devices can be classified into relays and coaxial switches which handle high frequency signals above several 100MHz. These devices are frequently used in the field of test and measurement equipment, wireless devices and base stations. Panasonic Industry has a wide range of relays and coaxial switch products for various frequency bands. Features include low insertion loss, high isolation, and low VSWR for impedance matching.



Industrial Relays I High Frequency Relays

Series	Features	Coil	Mounting (bottom view)
ARD  34 x 13.2 x 40mm 32 x 32 x 40mm 80 x 80 x 40.5mm SPDT Transfer SP6T	» Long life » Stable contact resistance » High sensitive coaxial switch 50Ω Impedance 26.5GHz	DC 4.5, 5, 12, 24V Fail-safe (with or without indicator) Latching (with or without indicator) Latching with TTL driver (with self cut-off function, with or without indicator)	SMA Coax Go To Overview »
ARJ  14 x 9 x 8.2mm RTIII 2c 2 coil latching	» Shielded HF relay » HF characteristics at 5GHz: » Isolation min. 35dB » Isolation min. 30dB between contact sets » Insertion loss max. 0.5dB » V.S.W.R. max.1.25 50Ω Impedance 8GHz 1W @5GHz	DC 3, 4.5, 12, 24V Single side stable: 200mW 2 coil latching: 150mW	THT SMD PCB, SMT  Go To Overview »
ARN  14.6 x 9.6 x 10.0mm 1c 1c reversed 2 coil latching	» 150W carrying power at 2GHz » HF characteristics at 2GHz: » Isolation min. 55dB » Insertion loss max. 0.12dB » V.S.W.R. max. 1.15 50Ω Impedance 8GHz 80W @2GHz	DC 4.5, 12, 24V Single side stable: 320mW 2 coil latching: 400mW	SMD SMT  Go To Overview »

Industrial Relays I High Frequency Relays

Series	Features	Coil	Mounting (bottom view)
ARS  14 x 8.6 x 7mm 14 x 8.6 x 8mm RTIII 1c · 1c reversed · 1 coil latching · 2 coil latching	» A or Y layout » 10W at 3GHz contact carrying power » Silent Type available » HF characteristics @ 3GHz (50Ω PCB type): » Isolation min. 35dB » Insertion loss max. 0.35dB » V.S.W.R. max. 1.4 50Ω Impedance · 75Ω Impedance · 3GHz · 1W @3GHz	DC 3, 4.5, 9, 12, 24V Single side stable / 1 coil latching: 200mW 2 coil latching: 400mW	THT · SMD PCB, SMT  50Ω PCB type Single side stable type (Deenergized condition)  50Ω SMT type Go To Overview »
ARA  14.7 x 9.7 x 5.9mm RTIII 1c · 1 coil latching · 2 coil latching	» SMD » Single side stable » HF characteristics at 1GHz: » Isolation min. 20dB » Isolation min. 30dB between contact sets » Insertion loss max. 0.3dB » V.S.W.R. max. 1.2 50Ω Impedance · 1GHz · 3W @1GHz	DC 1.5, 3, 4.5, 5, 6, 9, 12, 24, 48V Single side stable / 2 coil latching: 140mW (1.5 - 12V) 200mW (24V) 300mW (48V, only single side stable) 1 coil latching: 70mW (1.5 - 12V) 100mW (24V)	SMD SMT  Go To Overview »

Semiconductor Relays

Maximum service life - many application purposes

Panasonic Industry offers a wide range of PhotoMOS® relays for use in telecommunication, measurement, security devices and industrial control.

The power MOSFET's output acts as a pure ohmic resistance thus distinguishing the PhotoMOS® from an optocoupler or triac solution, since no saturation voltage or offset voltage is required.

PhotoMOS® relays with a MOSFET output enjoy an almost unlimited lifetime if used according to the specifications. Moreover, they are extremely reliable, unaffected by vibration, and their On-resistance remains stable throughout their entire lifetime. In addition to our broad product line-up for the industrial market, automotive-qualified types are also available.

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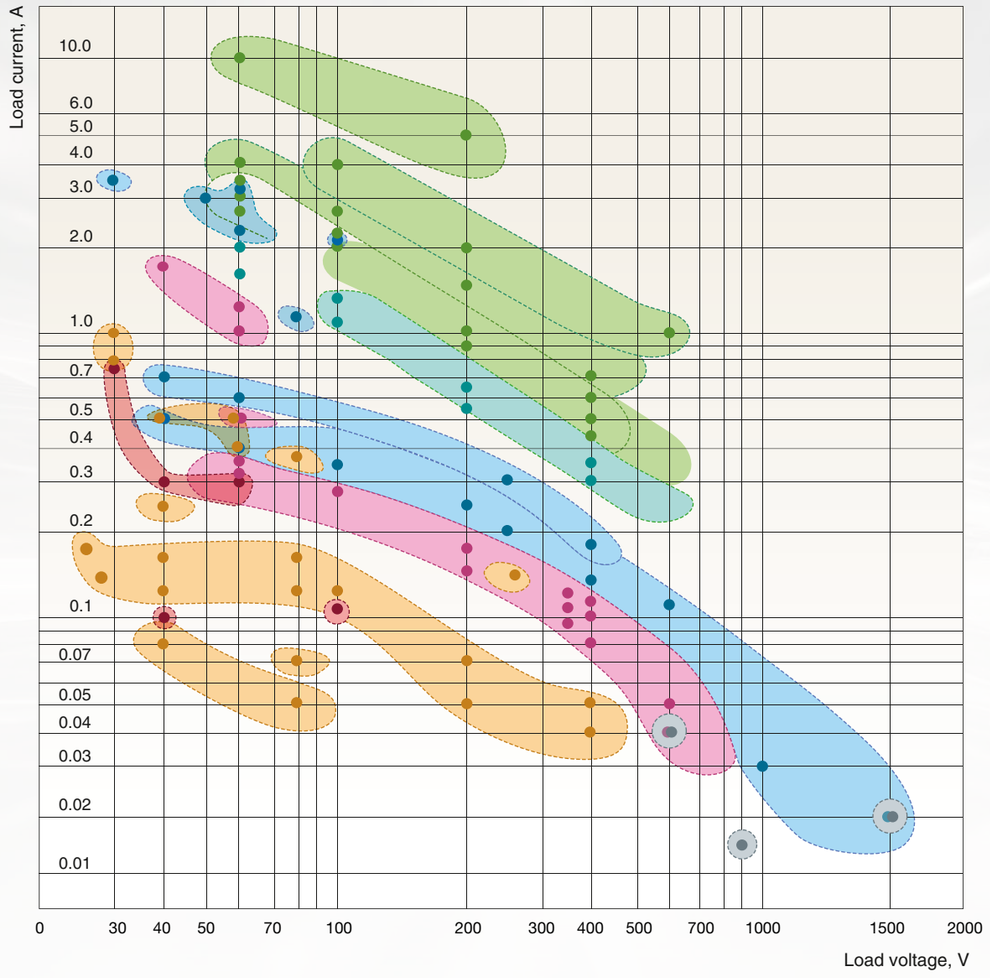
Go To Learn more PhotoMOS® technology

PhotoMOS®

Overview

Slim & Power	Power High Capacity type
	Power DC only type
	Power AC/DC dual use type
Flat & Power	PD type
Low on-resistance	HF DC only type
	HF AC/DC dual use type
Low on-resistance & Economical	HE type
General use	GU type
Economical & General	GE type
High sensitivity	HS type
Low on-resistance & Low output capacitance	RF type
Low current consumption & Guaranteed performance at high temperature	CC type
Automotive | EV Isolation Monitoring	AU type



PD: Power DIP
HF: High Functioned
HE: High functioned and Economical
RF: Radio Frequency
GU: General Use
GE: General use and Economical
HS: High Sensitivity
CC: Capacitor Coupled
AU: Automotive

Product key & Packages

Channel configuration

- S : 4 channels (16-pin)
- Y : 1 channels (4-pin)
- W : 2 channels (8-pin)
- V : 1 channels (6-pin)
- Z : 1 channels (SIL4-pin)

Output configuration

- 1 : 1 Form A (DC)
- 4 : 1 Form B (AC/DC) 2 Form B (AC/DC)
- 2 : 1 Form A (AC/DC) 2 Form A (AC/DC)
- 6 : 1 Form A & 1 Form B (AC/DC)

A = Normally open B = Normally closed

Type

- 0 : HF type Low on-resistance Power type Slim and power
- 1 : GU type Wide variation GE type General use and Economical
- 2 : RF type Low on-resistance and low output capacitance
- 3 : HS type High sensitivity
- 5 : HE type Low on-resistance & Economical
- 6 9 : Power High Capacity type Slim and power
- 7 : PD type Flat and power
- C : CC type Capacitor coupled isolation type

Load voltage

- 0 : 350V
- 1 : to 40V
- 2 : 50V to 60V
- 3 : 250V
- 4 : 400V
- 5 : 80V to 100V
- 6 : 600V
- 7 : 200V
- 8 : 1500V
- 9 : 1000V

AQ Y 2 2 1 F E H L V Y

Driving method

- Nil : Current-sensitive
- D : Power type voltage-sensitive
- F : Small size type voltage-sensitive (Recommend input voltage: 5V)

Feature

- Nil : Standard
- E : Economical
- N : Low C × R
- G : High capacity
- R : Low C × R

I/O isolation voltage

- Nil : Basic insulation (200V, 500V, 1500V, 2500V, 3000V)
- H : Reinforced insulation (5000V)

Current limit function

- Nil : Non
- K : With short circuit protection (latching)
- KL : With short circuit protection (non-latching)
- L : With current limiting

Package

- Nil : DIP (through hole terminal)
- A : DIP (surface mount terminal)
- M : SON
- S : SOP
- T : VSSOP
- V : SSOP
- P : TSON

Packing style

- Nil : Tube
- X : Tape and reel (DIP/SOP)
- Y : Tape and reel (SSOP/SON/VSSOP)
- W : Tape and reel (SSOP/SON/VSSOP)
- Z : Tape and reel (DIP/SOP)

Valid only for combinations of products listed in the catalog (see “TYPES” in this catalog).
Please inquire regarding combinations with products not listed in this catalog.

Packages

TSON Thin Small Outline No lead Package	
VSSOP Very Shrink Small Outline Package	
SON Small Outline No lead Package	
SSOP Shrink Small Outline Package	
SOP Small Outline Package	 SOP4pin SOP6pin SOP8pin SOP16pin
DIP Dual Inline Package	 DIP4pin DIP6pin DIP8pin
Power-DIP Power Dual Inline Package	 Power-DIP
SIL Single Inline Package	 SIL4pin

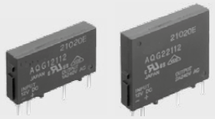
Semiconductor Relays I PhotoMOS®

Series	Features	Output
GU General Use  1a 1b 2a 2b 1a1b	» Wide product range for most applications » Reinforced insulation type available DIP SOP	40V 1.6A 0.1Ω 60V 1.25A 0.2Ω 100V 0.32A 2.3Ω 200V 0.4A 1.8Ω 350V 0.13A 0.32Ω 400V 0.12A 26Ω 600V 0.05A 70Ω Go To Overview »
GE Economical & General  1a 1b 2a 2b 1a1b	» Economic and Reinforced insulation DIP	30V 1.0A 025Ω 60V 0.55A 0.85Ω 350V 0.13A 18Ω 400V 0.12A 26Ω 600V 0.05A 52Ω Go To Overview »
HS High sensitivity  1a	» Low LED operate current DIP SOP	60V 0.5A 0.85Ω 80pF 350V 0.12A 19Ω 32pF 400V 0.12A 30Ω 45pF Go To Overview »
RF Low On Resistance & Low Output Capacitance  1a 2a 4a	» Very good RF characteristics » Low signal loss DIP SOP SSOP VSSOP SON	20V 0.18A 2.8Ω 1.1pF 25V 0.15A 5.5Ω 1.1pF 30V 1A 0.18Ω 37.5pF 40V 0.12A 9.5Ω 1pF 60V 0.4A 0.8Ω 24.5pF 80V 0.12A 10.5Ω 4.5pF 100V 0.12A 8.8Ω 5.8pF 200V 0.07A 30Ω 10pF 250V 0.14A 11Ω 33pF 400V 0.05A 70Ω 10pF Go To Overview »
CC Capacitive Coupled  1a	» Capacitor Coupled isolation type » Low On resistance, low output capacitance » High temperature range up to +105°C TSON	30V 0.75A 0.2Ω 40pF 40V 0.3A 0.8Ω 14.5pF 60V 0.3A 0.9Ω 27pF 100V 0.12A 9Ω 5.8pF Go To Overview »

Semiconductor Relays I PhotoMOS®

Series	Features	Output
AU Automotive  1a	» Tested in accordance to AEC-Q101 » Optimized for Isolation Monitoring & HV measurement DIP SOP	60V 0.6A 0.85Ω 100V 0.25A 2.3Ω 600V 0.04A 70Ω 900V 0.015A 310Ω 1.500V 0.02A 305Ω 1.800V 0.015A 620Ω Go To Overview »
Power Slim & Power  1a 1b	» High Current in SIL package » Voltage sensitive types SIL	60V DC 10A 0.008Ω 100V 4A 0.035Ω 200V DC 5A 0.031Ω 400V DC 0.7A 1.06Ω 600V 1A 0.52Ω Go To Overview »
PD Flat & Power  1a	» High Current in Power DIP package Power DIP	60V 2A 0.11Ω 100V 1.3A 0.23Ω 200V 0.65A 0.7Ω 400V 0.35A 2.1Ω Go To Overview »
HF Low On Resistance  1a	» High Functionality » AC and DC types DIP	40V DC 0.7A 0.3Ω 60V DC 0.6A 0.37Ω 250V DC 0.3A 2.7Ω 400V DC 0.18A 6.3Ω Go To Overview »
HE Low On Resistance & Economical  1a 1b 2a 2b 1a1b	» High Efficency DIP SOP	30V 3.5A 0.035Ω 40V 0.5A 0.6Ω 50V 3A 0.04Ω 60V 3.5A 0.033Ω 80V 1.25A 0.09Ω 100V 2.4A 0.07Ω 200V 0.25A 2.6Ω 250V 0.2A 5.5Ω 400V 0.15A 11Ω 600V 0.13A 20Ω 1.000V 0.03A 85Ω 1.500V 0.02A 345Ω Go To Overview »

Semiconductor Relays I PhotoMOS®

Series	Features	Output
APT 	» Phototric Coupler DIP SOP	600VAC 0.1A Go To Overview »
AQH 	» No derating up to +40°C » SMD mounting DIP	600VAC 1.2A Go To Overview »
AQG 	» Voltage Controlled » Integrated Snubber Circuit SIL	230VAC 2A Go To Overview »
AQ1 	» Voltage Controlled » Heat Sink ready SIL	230VAC 10A Go To Overview »
AQJ 	» Plug terminals » Integrated Varistor Hockey-Puck	230VAC 25A Go To Overview »
AQA 	» Wide range input (3 – 30VDC) » Screw terminals » Status LED » Integrated Varistor Hockey-Puck	230VAC 40A 1.00VDC 10A Go To Overview »

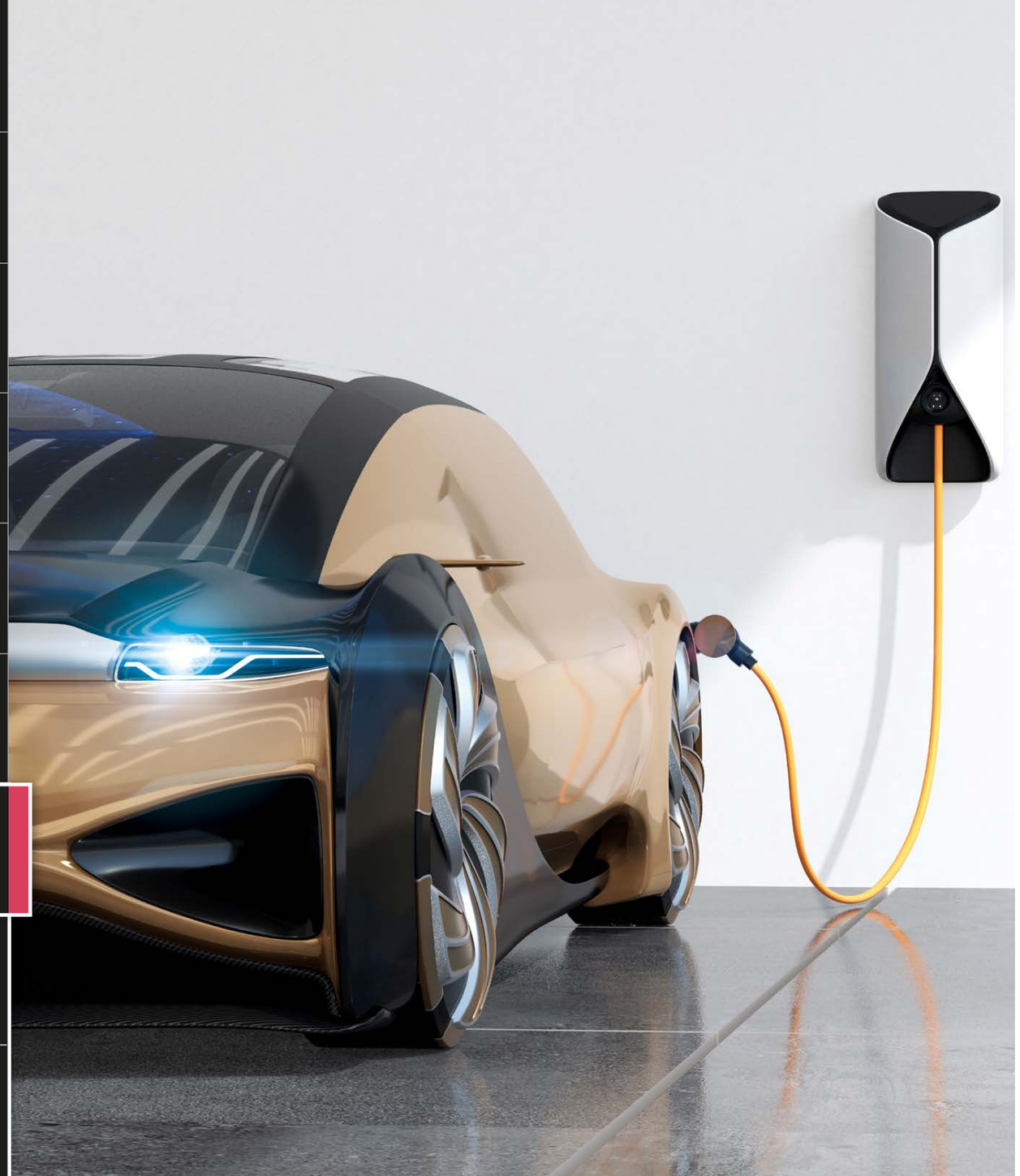
Automotive Relays

All Panasonic Industry Automotive relays comply with ISO / TS 16949.

Panasonic Industry has been contributing to the ever increasing need for innovation in transportation electronics for decades, with highly reliable, long lasting devices for transportation safety, comfort, entertainment and powertrain applications. There is continued effort within the transportation industry to balance societal and economic perspectives with the environment.

Panasonic Industry continually supports these efforts with proven quality, a solid manufacturing organization and experienced engineering talent.

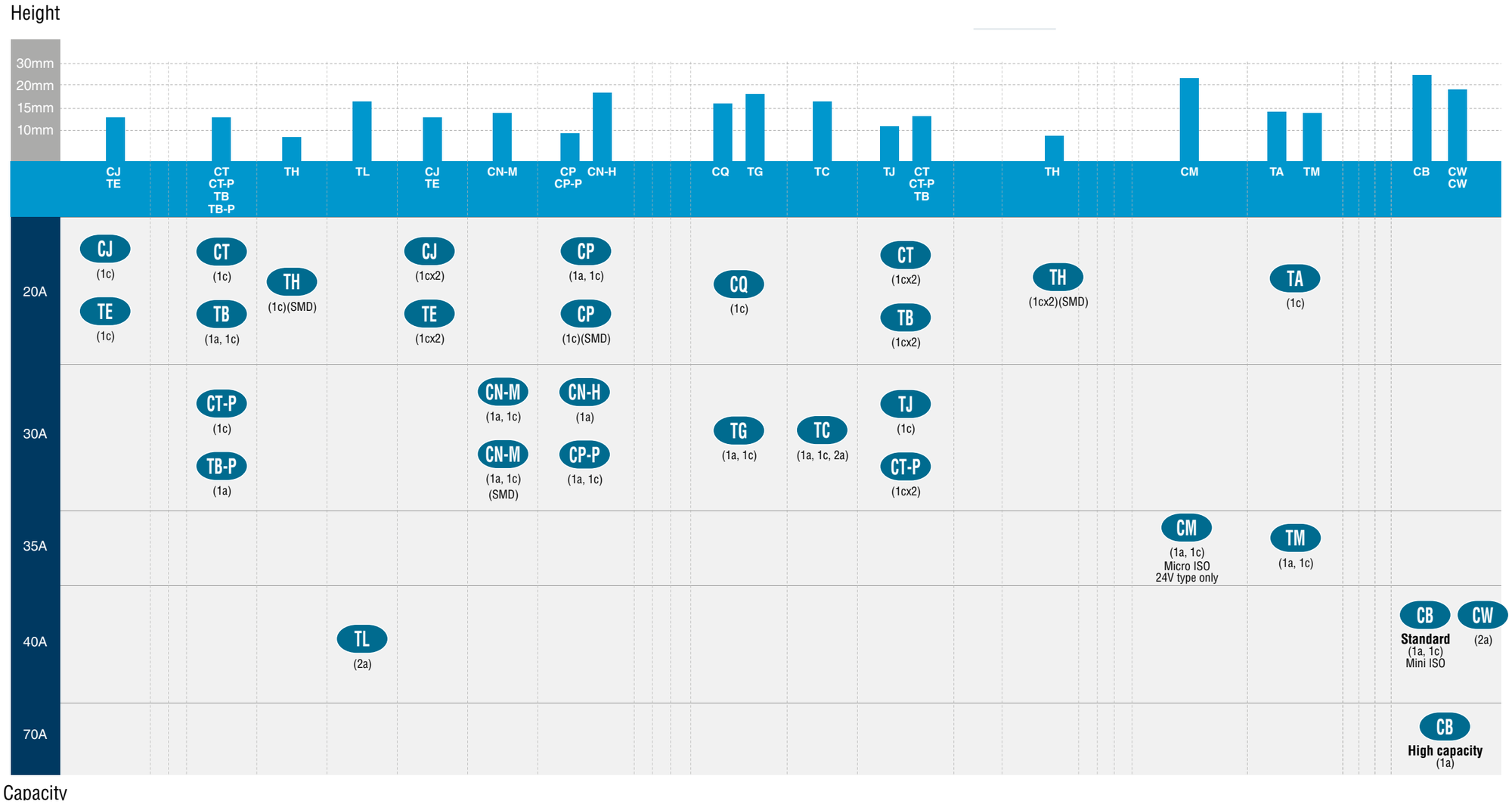
Go To discontinued parts



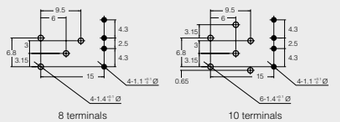
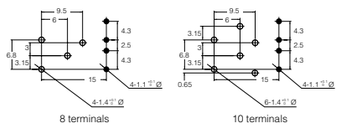
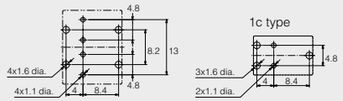
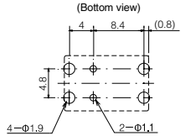
PCB Relays

Modern automotive electric equipment and control technologies are a key aspect to achieve the safety, comfort and efficiency customers expect from a car nowadays. Discover how our relays and connectors meet the demand for sophisticated and sustainable automotive power and body control applications.

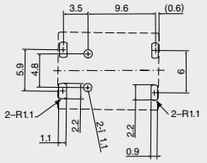
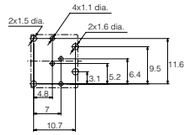
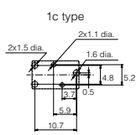
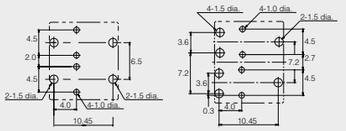
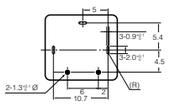
Overview


Height
30mm
20mm
15mm
10mm
CJ TE
CT CT-P TB TB-P
TH
TL
CJ TE
CN-M
CP CP-P
CN-H
CQ
TG
TC
TJ
CT CT-P TB
TH
CM
TA
TM
CB
CW CW
20A
CJ (1c)
TE (1c)
CT (1c)
TB (1a, 1c)
TH (1c)(SMD)
CJ (1cx2)
TE (1cx2)
CP (1a, 1c)
CP (1c)(SMD)
CQ (1c)
CT (1cx2)
TB (1cx2)
TH (1cx2)(SMD)
TA (1c)
30A
CT-P (1c)
TB-P (1a)
CN-M (1a, 1c)
CN-M (1a, 1c) (SMD)
CN-H (1a)
CP-P (1a, 1c)
TG (1a, 1c)
TC (1a, 1c, 2a)
TJ (1c)
CT-P (1cx2)
35A
CM (1a, 1c) Micro ISO 24V type only
TM (1a, 1c)
40A
TL (2a)
CB Standard (1a, 1c) Mini ISO
CW (2a)
70A
CB High capacity (1a)
Capacity

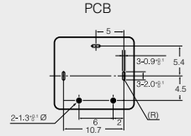
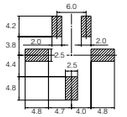
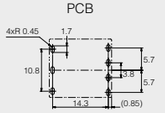
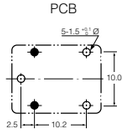
Automotive Relays I PCB Relays

Series	Features	Coil	Mounting (bottom view)
CT  17.4 x 7.2 x 13.5mm 1c  17.4 x 14 x 13.5mm 1c x2 (Twin)	» Super miniature size » ACT512 layout = layout of 2 x ACT112 » H-bridge type available (twin relay) » Quiet operation » Pin in Paste (with vent hole) available » Twin type as 8 pin or 10 pin version available 20A N.O. 10A N.C. 16V	12V DC 800mW	THT PiP PCB, PiP  8 terminals 10 terminals Go To Overview
CT Power  17.4 x 7.2 x 13.5mm 1c  17.4 x 14 x 13.5mm 1c x2 (Twin)	» Super miniature size » Footprint same as CT standard type » Suitable for motor loads » H-bridge type available (twin relay) » Pin in Paste (with vent hole) available 30A N.O. 10A N.C. 16V	12V DC 1000mW	THT PiP PCB, PiP  8 terminals 10 terminals Go To Overview
TB  14.0 x 9.2 x 14.0mm 1a 1c  17.4 x 14.0 x 14.0mm 1c x2 (Twin)	» Super miniature size » H-bridge type available (twin relay) » Pin in Paste (with vent hole) available » Lamp load type available 20A N.O. 10A N.C. 16V	12V DC 1,440mW (for pick-up max. 5.5V DC) 900mW (for pick-up max. 6.5V DC) 640mW (for pick-up max. 7.7V DC)	THT PiP PCB, PiP Twin type (8 terminal type) 1c type  Go To Overview
TB1P  14.0 x 9.2 x 14.0mm 1a	» Low power consumption » Small board space » Light weight 30A N.O. 16V	12V DC 480mW	(Bottom view)  Hole punching tolerance ±0.1 Go To Overview

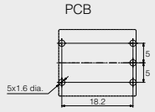
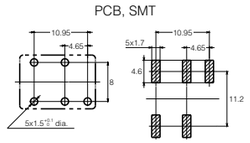
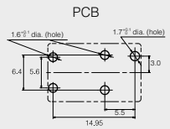
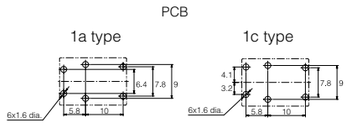
Automotive Relays I PCB Relays

Series	Features	Coil	Mounting (bottom view)
TL  14.0 x 9.2 x 14.0mm 1u	» 1 form U contact arrangement (double make) » Small board space » Light weight 40A N.O. 16V	12V DC 640mW (for pick-up max. 6.5V DC)	 Go To Overview
TE  12.0 x 7.2 x 13.5mm 1c  13.6 x 12 x 13.5mm 1c x2 (Twin)	» Ultra small size, smallest in its class » High capacity in a compact body » H-bridge type available (twin relay) » Pin in Paste (with vent hole) available 20A N.O. 10A N.C. 16V	12V DC 1,309mW (for pick-up max. 5.5V DC) 900mW (for pick-up max. 6.5V DC) 655mW (for pick-up max. 7.7V DC)	THT PiP PCB, PiP Twin type (8 terminal type)  1c type  Go To Overview
CJ  7.2 x 12.2 x 13.5mm 1c  13.7 x 12.2 x 13.5mm 1c x2 (Twin)	» Ultra small size » High capacity in a compact body » H-bridge type available (twin relay) » Pin in Paste (with vent hole) available 20A N.O. 10A N.C. 16V	12V DC 800mW High sensitive type 640mW	THT PiP PCB, PiP  Go To Overview
CP  14.0 x 13.0 x 9.5mm 1a 1c	» Very low profile » High capacity » 24V DC type available on request 20A N.O. 10A N.C. 16V	12V DC 640mW	THT PCB  Go To Overview

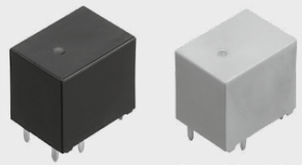
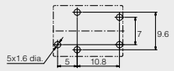
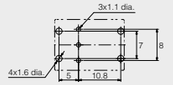
Automotive Relays I PCB Relays

Series	Features	Coil	Mounting (bottom view)
CP POWER  14.0 x 13.0 x 9.5mm 1a 1c	» Very low profile » Improved heat conduction by additional pin » Pin in Paste (with vent hole) available 20A N.O. 10A N.C. 16V	12V DC 450mW 640mW	THT  Go To Overview
CP SMD  14.0 x 13.0 x 10.5mm 1c	» Very low profile » High capacity 20A N.O. 10A N.C. 16V	12V DC 640mW	SMD  Go To Overview
TJ  15.0 x 16.0 x 11.2mm 1c	» Compact flat type (height: 11.2mm) » High capacity switching » Thermal resistant type 30A N.O. 15A N.C. 16V	12V DC 450mW	THT  Go To Overview
CQ  17.0 x 13.0 x 16.6mm 1c	» Very quiet operation » Terminal layout identical to JJM 20A N.O. 10A N.C. 16V	12V DC 640mW	THT  Go To Overview

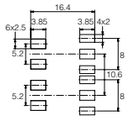
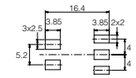
Automotive Relays | PCB Relays

Series	Features	Coil	Mounting (bottom view)
TA  19.8 x 17.0 x 14.0mm 1c	» Very quiet operation » Flat type 20A N.O. 10A N.C. 16V	12V DC 640mW (for pick-up max. 7.7V DC) 900mW (for pick-up max. 6.5V DC)	THT  PCB 5x1.6 dia. 18.2 Go To Overview
CN-M  15,5 x 11 x 14.4mm 1a 1c	» Space-saving design » SMD type available » Pin in Paste (with vent hole) available 17.8 x 12.6 x 18mm 30A N.O. 25A N.C. 16V	12V DC 640mW	THT PiP SMD  PCB, SMT Go To Overview
CN-H  17 x 10.6 x 18.3mm 1a	» Best space savings in its class » Substitute for Micro-ISO relay » Low operating power type » High current-carrying capacity 30A N.O. 16V	12V DC 450mW (for pick-up max. 6.5V DC) 640mW (for pick-up max. 5.5V DC)	THT  PCB Go To Overview
TG  17.8 x 12.6 x 18mm 1a 1c	» Large switching capacity in small size » Substitute for micro ISO relays » Low operating power type 30A N.O. 15A N.C. 16V	12V DC 640mW (for pick-up max. 6.5V DC) 450mW (for pick-up max. 7.0V DC)	THT  PCB 1a type 1c type 6x1.6 dia. Go To Overview

Automotive Relays I PCB Relays

Series	Features	Coil	Mounting (bottom view)
TM  19.2 x 16.8 x 13.6mm 1a 1c	» Flat type » Ideal for smart junction box » High capacity and 35A type » High heat resistant type 35A N.O. 15A N.C. 14V	12V DC 450mW (320Ω type) 360mW (400Ω type)	THT Go To Overview »
TT  17.8 x 13.0 x 16.0mm 2a/1u	» Double make contact 2 Form A (1 Form U) » 60 A fuse rating » High heat resistant type available 60A N.O. 14V	12V DC 450mW	THT PiP Go To Overview »
TC  17.8 x 13.0 x 16.0mm 1a 1c 2a	» Substitute for micro ISO relays » Latching type available » High heat resistant type available 30A N.O. 15A N.C. 16V 0W Latching relay	12V DC 1,309mW (for pick-up max. 6.5V DC) 900mW (for pick-up max. 7.0V DC) 640mW (for pick-up max. 7.5V DC) 1,920mW (2 coil latching type)	THT PiP PCB, PiP 1a standard type  1c/2a standard type  2a latching type  Go To Overview »

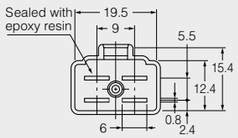
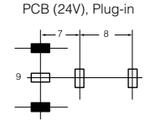
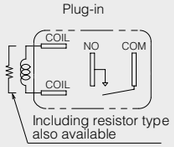
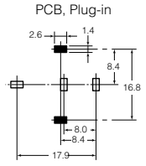
Automotive Relays I PCB Relays

Series	Features	Coil	Mounting (bottom view)
TH  11.0 x 12.0 x 8.8mm 1c  21.6 x 12.0 x 8.8mm 1c x2 (Twin)	» Ultra compact flat type » High switching capacity (up to 25A) » 10 terminals twin type 20A N.O. 10A N.C. 16V	12V DC 900mW (for pick-up max. 6.5V DC) 655mW (for pick-up max. 7.7V DC)	SMD SMT Twin type (10 terminal type)  1c type  Go To Overview »

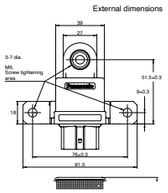
Plug-in Relays

Panasonic Industry provides high-performing micro and mini ISO plug-in relays suitable for 12V and 24V power supply systems.

Automotive Relays I Plug-in Relays

Series	Features	Coil	Mounting (bottom view)
CA  21.5 x 14.4 x 37.0mm 1a 1b 1c	» Rubber bracket / screw mounting » Direct plug-in		Plug-in  1a, 1b
	Standard 30A 1a / 20A 1b, 1c / 15V 1c / 16V 1a, 1b	12V DC 1,800mW	
	Type S 20A N.O. / 10A N.C. / 16V	12V DC 1,400mW	
	1c 24V 20A N.O. / 20A N.C. / 30V	24V DC 1,800mW	Go To Overview »
CM  20 x 15 x 22mm 1a 1c	» Small substitute for Mini-ISO relay » Micro-ISO terminal type		Plug-in THT 
	35A N.O. / 20A N.C. / 16V	12V DC 1500mW	
	35A N.O. / 20A N.C. / 32V	24V DC 1800mW	Go To Overview »
CV-N  22.5 x 15 x 15.7mm 1a 1c	» Low profile » Low temperature rise » Low sound pressure level » RTIII (IP67) available 20A N.O. / 10A N.C. / 14V	24V DC 800mW	Plug-in 
			Go To Overview »
CB  26 x 22 x 25mm 1a 1c	» 40A switching current at 85°C » Mini-ISO type terminals » High shock resistance » High thermal resistance		Plug-in THT  (PCB standard type)
	Standard 40A N.O. / 30A N.C. / 16Va	12V DC 1400mW	
	H Type 70A N.O. / 16V	12V DC 1800mW	
	24V Type 40A N.O. / 30A N.C. / 32V	24V DC 1800mW	Go To Overview »

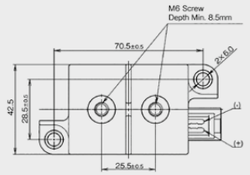
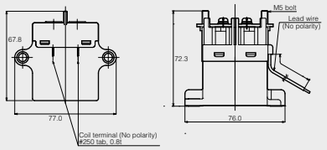
Automotive Relays I Plug-in Relays

Series	Features	Coil	Mounting (bottom view)
CN-L  91.5 x 38.5 x 85.3mm 1a	» Continuous carrying current of 150A@85°C, 80A@125°C » Max. ambient temperature 125°C » Can be installed to engine compartment (IP54) » Version without fasten lug available » Overcurrent (> 2000A) trip function » No additional fuse needed 150A N.O. 0W Latching relay	12V DC 30W	Plug-in/ Screw Screw terminal  Go To Overview

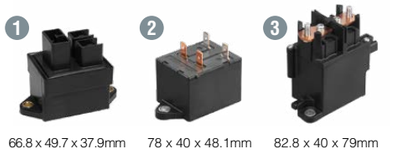
High Voltage DC Relays

With increasing concern for the environment, the market for eco-friendly vehicles is expanding. To contribute to a greener world and environmental compliance regulations, we provide a broad range of solutions for hybrid to full-electric vehicles. We aim at contributing to the electrification and safety of cars by offering EV relays (DC contactors) achieving high-capacity DC cutoff & space saving and Automotive relays capable of large current/voltage cutoff.
Charging the next generation of mobility.

Automotive Relays I High Voltage DC Relays

Series	Features	Coil	Mounting
EV-A  82.6 x 73.0 x 23.0mm 1a	» One of the smallest and lightest in 250 A class » 8,000 A short circuit tolerance » High cut-off capacity 1,800A at 500V DC without contact polarity » Vertical and horizontal type available 250A 500V	12V DC 6000mW	Screw terminal  Go To Overview
EV-G, EV-H high short-circuit capacity  66.8 x 49.7 x 37.9mm  78 x 40 x 48.1mm 1a	» High short-circuit capacity type » AEVH (100A) available with lead wire 1 60A 450V 2 100A 450V	12V DC 5200mW 5400mW	Screw terminal Go To Overview
EV-S quiet  76 x 36 x 72.3mm  77 x 67.8 x 37.7mm 1a	» DC type with sealed capsule, mainly for hybrid vehicles » Very quiet operation » Small size and light weight » Blow-out magnets allow small arcing space » Safety construction » High contact reliability » Standard type for horizontal mounting available 60A 450V	12V DC 4500mW	Screw terminal Screw terminal  Go To Overview

Automotive Relays I High Voltage DC Relays

Series	Features	Coil		Mounting
EV  1 66.8 x 49.7 x 37.9mm 2 78 x 40 x 48.1mm 3 82.8 x 40 x 79mm  4 75.5 x 40 x 80mm 5 95 x 45 x 86.4mm 6 111 x 63 x 75mm 1a	» Sealed capsule for xEV » Compact size » Blow-out magnets allow small arcing space » Safety construction » High contact reliability	12V DC	24V DC	Screw terminal Faston terminal Go To Overview »
	1 10A 450V	1240mW		
	2 20A 400V	3900mW		
	3 80A 450V	4200mW		
	4 120A 450V	4200mW		
	5 200A 450V	6000mW		
	6 300A 450V	3600mW Inrush: 37.9W (~0.1 sec.)	3800mW Inrush: 44.4W (~0.1 sec.)	
EBN  82.6 x 73.0 x 23.0mm 1a	» Low height for mounting within battery packs » Max. 1,500 A 60 V DC switching off possible 100A 60V	12V DC 2000mW		Plug-in Go To Overview »
ECN  29.0 x 25.0 x 28.9mm 1a	» Small pre-charging relay » Easy connect plug-in terminal 15A 400V	12V DC 1400mW		Screw terminal Go To Overview »

Panasonic
INDUSTRY

We are dedicated to the highest standards of global sustainability as **Your Committed Enabler**. Find out more on our website.

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