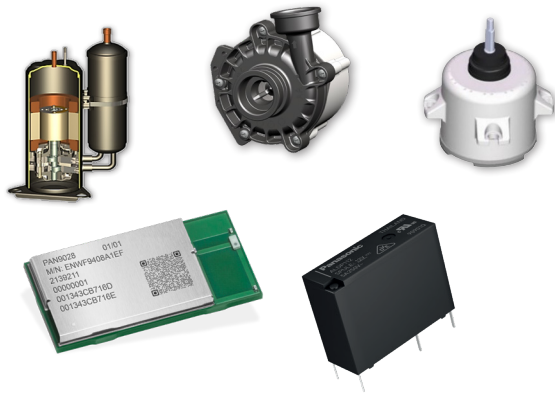


**Panasonic**  
INDUSTRY

## Our Offering for Heat Pumps

Individual components  
ensure efficiency and  
high performance



**Your Committed Enabler**

# IN Your Future

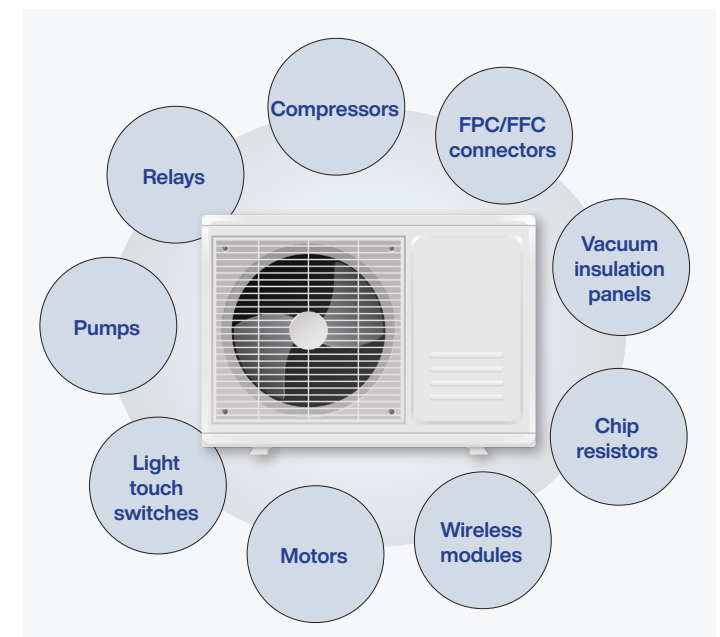
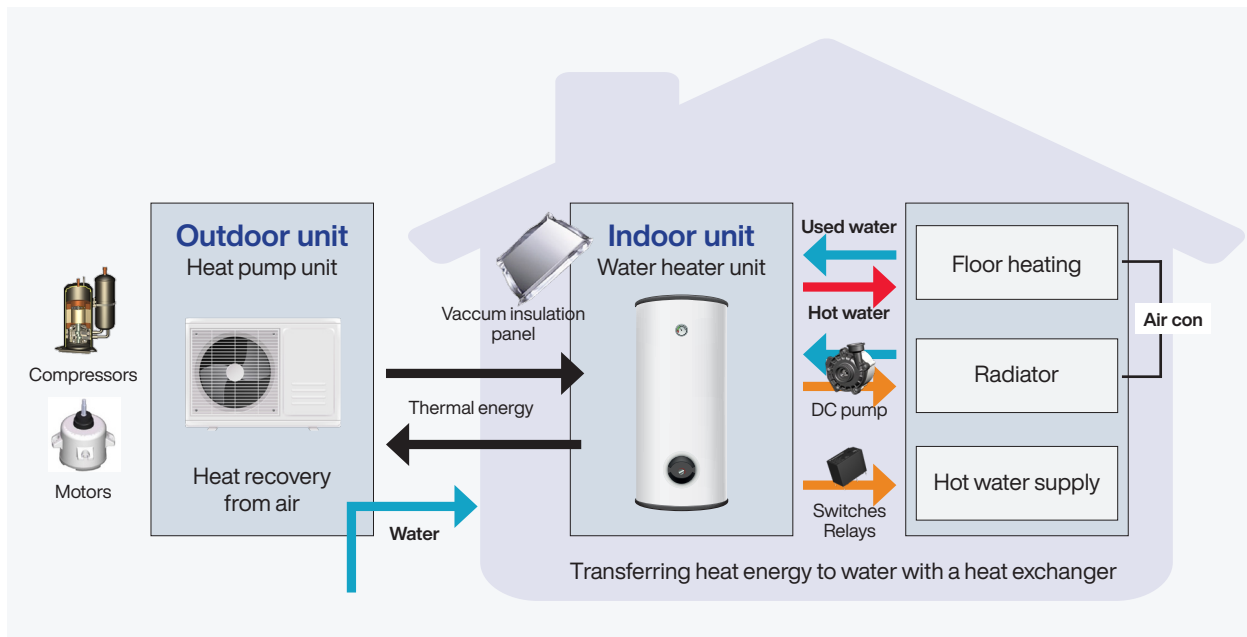


# PANASONIC COMPONENTS FOR HEAT PUMPS

## Air-to-water heat pump system (heating and hot water solution)

From enhancing efficiency and increasing the COP (coefficient of performance) to delivering silent operation and competitive pricing, our solutions are tailored to meet your specific needs. Discover how we can help you achieve higher energy output,

reduce operational costs, and ensure a quieter performance, all while maintaining a competitive edge in pricing. Let's work together to overcome these challenges and drive success in the heat pump industry.

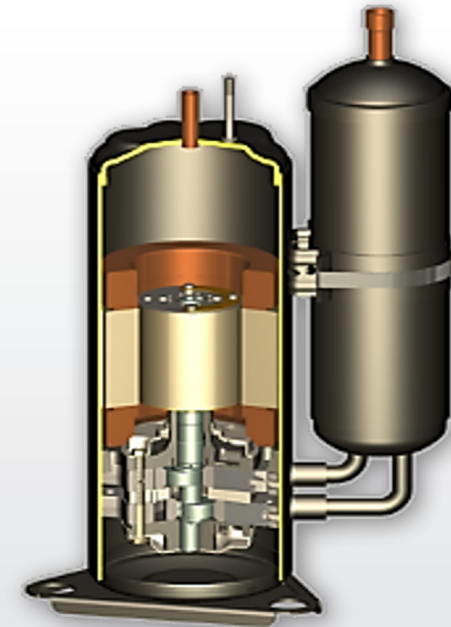
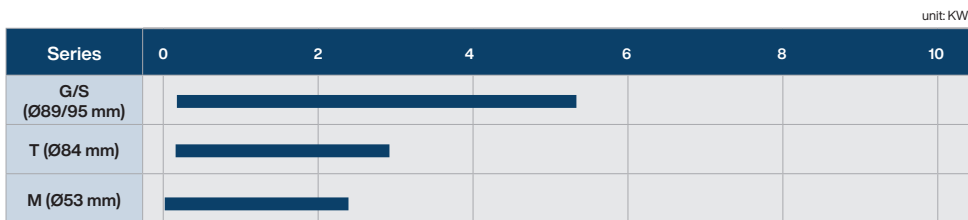
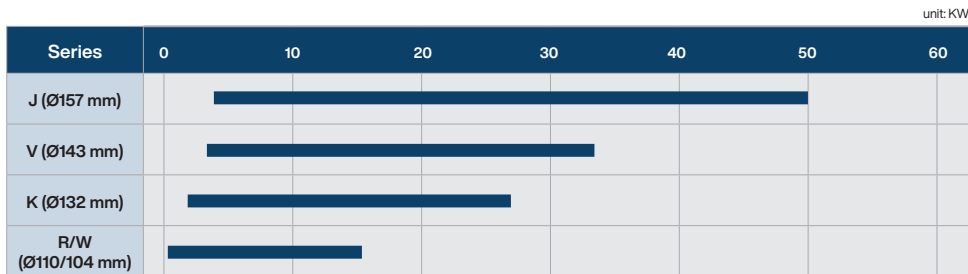


# ROTARY COMPRESSORS

High efficiency and wide operating envelope for optimal performance

Heat management mastery: our high efficiency compressors redefine performance with cutting-edge features.

Compressors are essential in heat pumps playing a critical role in the refrigeration cycle. Our product stands out as the best choice due to its high efficiency features, including rare earth magnet, concentrated and distribution winding motor, optimized ratio oil/R290, wide operating envelope up to 80°C condensing temperature for high hot water temperature keeping high reliability standard, and a twin rotary technology that ensures low vibration and silent operation.



## High Efficiency

- » Rare earth magnet
- » Concentrated and distribution winding motor
- » Optimize Ratio Oil/R290

## Wide Operating Envelope

- » Up to condensing temperature 80°C for high hot water temperature

## Twin Rotary

- » Low vibration and silent

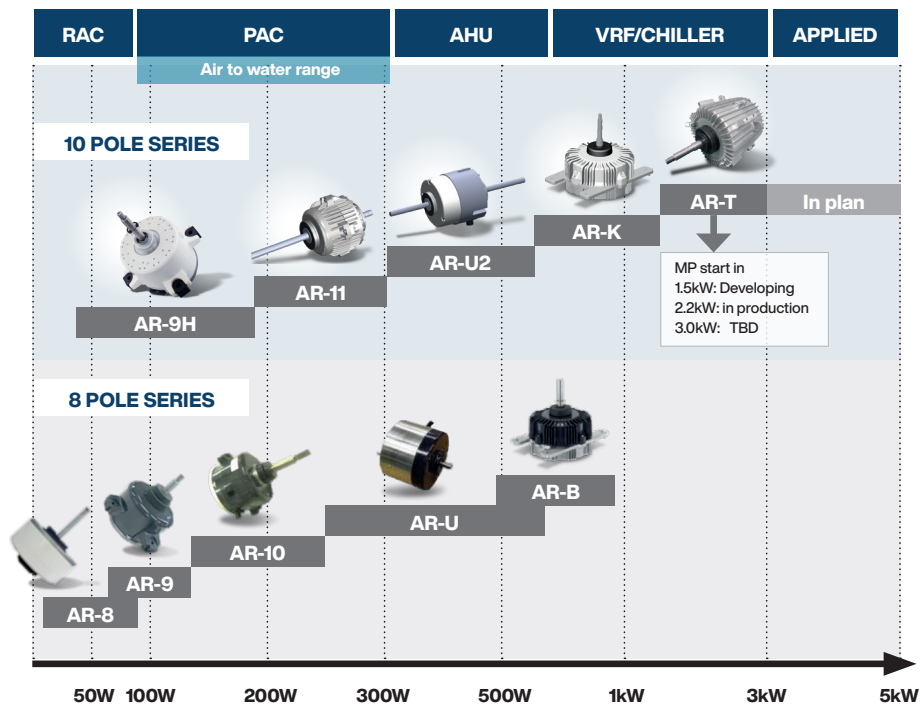
## High Reliability Standard

# FAN MOTORS

The technology behind an efficient and silent ventilation

” 10 pole structure for high efficiency, low noise, and vibration “

Our product offers a competitive advantage through its exceptional quality and reliability. With fused technology and coming from years of experience in HVAC, Automotive Industrial and Appliance, precise motor control, and energy-saving efficiency exceeding 85%, our product ensures optimal performance. We further improve our low noise and vibrations levels in a new compact design. These features make our product the best choice for those seeking extreme strength in efficiency and low noise on their HVAC units. Our motors are among the top product in the market thanks to their technology and sustainable impact on the environment.



- » Fused technology
- » Precise motor control with an energy saving efficiency >85%
- » Low noise and Low vibration
- » New compact design and lightweight
- » Environmentally friendly products

# DC PUMP

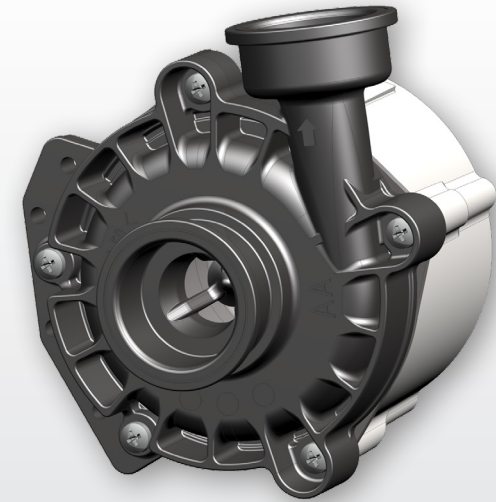
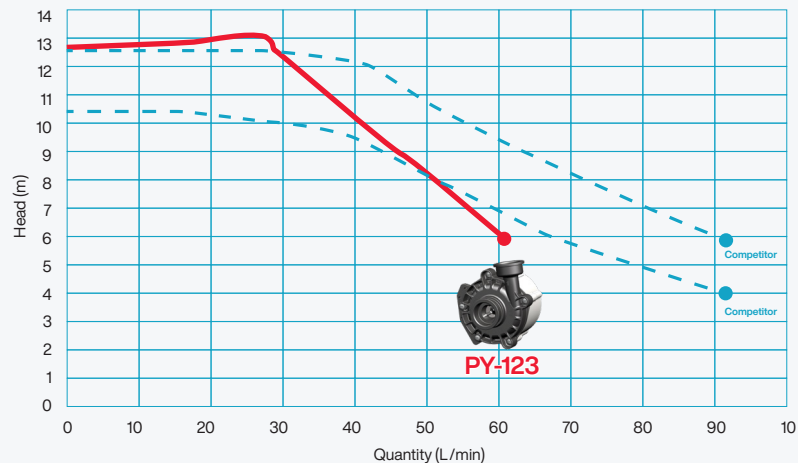
## Excellence in water circulating system

“ Unleash the power of efficient heat transfer with our environmentally friendly pumps, tailored for superior performance and seamless integration. ”

Pumps play a critical role as gatekeepers of fluid flow. Our expertise enables us to recommend pumps that circulate efficiently and adapt to dynamic demands. Our environmentally friendly product stands out with approximately 20% less power consumption, local market support for customer focus, high efficiency through design and control optimization, low noise and vibration, and a design specifically tailored for heat pump applications. Choose our product for superior performance, sustainability, and seamless integration into your setup.

### Q-H-Performance curve

Q-H-Performance is almost same with the PY-122 while reducing noise and power consumption (EEI  $\leq 0.23$ )



### Environmentally friendly product:

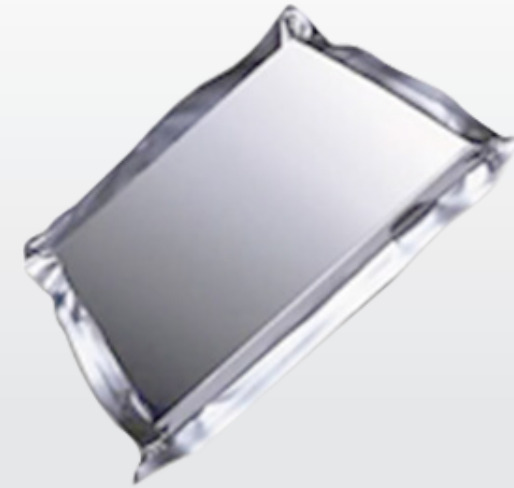
- » Approximately 20% less power consumption than previous models
- » Local market support -> customer focus
- » High Efficiency -> design and control optimization
- » Low noise and low vibration
- » Design for heat pump application

# VACUUM INSULATION PANEL

Highest level of insulation performance for increased energy efficiency and energy savings

” Revolutionizing insulation: These panels achieve unprecedented energy efficiency with a low-vacuum design and superior thermal control. “

The U-Vacua vacuum insulation panels redefine insulation performance with low thermal conductivity. Utilizing a proprietary lining molding technology and laminate film, these panels create a low vacuum environment to effectively control thermal conduction. With performance surpassing standard foam and glass wool, U-Vacua panels offer high insulation efficiency in a thin form. Ideal for refrigeration applications, home appliances, buildings, and energy-sensitive products.



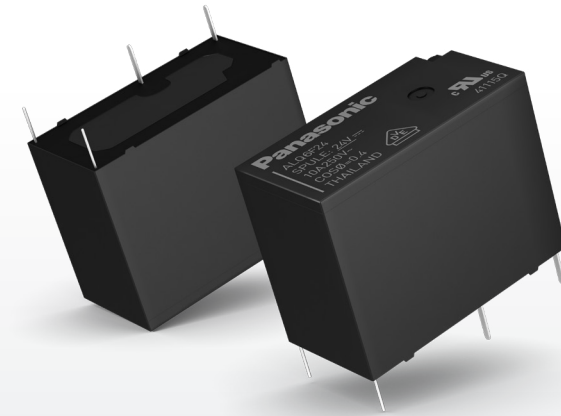
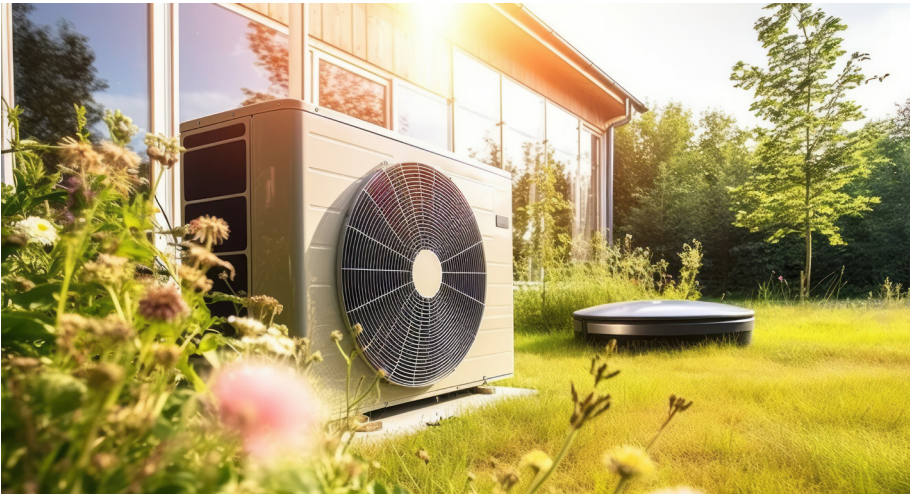
- » **Highly versatile**
- » **High insulation performance for energy savings**
- » **High heat resistance core material**
- » **High recyclability**
- » **Environmentally friendly: made with 75% recycled glass**
- » **Ideal for spacious yet compact appliances**

# LQ RELAY, LD-P RELAY

Small power relays for hazardous environments

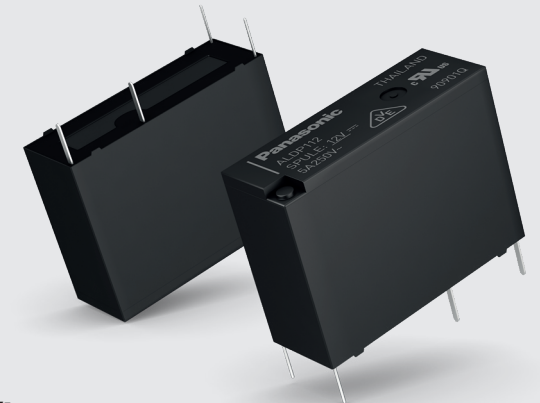
No roof is on fire – realize safe and reliable switching functions in heat pumps with LQ and LD-P relays.

Valves, compressors or ventilators are only few examples of major parts of a heat pump – and all have to be switched on and off. The easiest and most economic way to realize the switching function are small power relays with all necessary approvals, like conformity to IEC/EN60335-1 and EN60079-15. Both LQ (10A) and LD-P (5A) series are VDE approved and the small form factor helps to reduce PCB space to the minimum by keeping maximum performance.



## LQ relay:

- » 10A, 1 Form A & 1 Form C
- » Up to 105°C ambient temperature
- » IEC/EN60335-1 / EN60079-15 (VDE approved)



## LD-P relay:

- » 5A, 1 Form A
- » Super compact WxLxH = 6.9 x 20.2 x 14.9mm
- » IEC/EN60335-1 / EN60079-15 (VDE approved)

# WIRELESS MODULES

For next generation smart heat pumps

## PAN9028

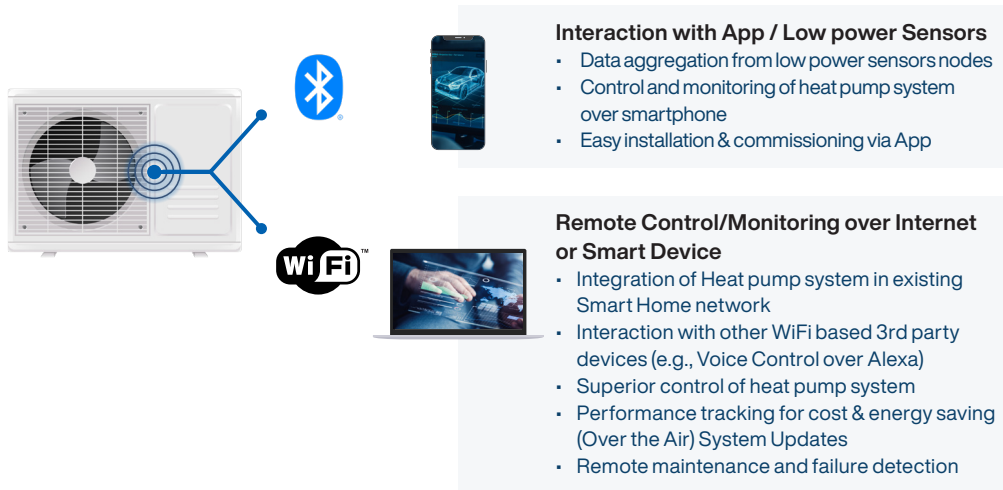
Wi-Fi 5 (2.4 GHz & 5 GHz) & Bluetooth 5.2 (BR/EDR/LE)

Streamlined connectivity with integrated antenna. Powered by NXP's 88W8987, effortlessly integrate Wi-Fi 5 and Bluetooth 5.2. PAN9028 simplifies compliance, storing Power Tables for regional certifications. Your shortcut to reliable, certified Wi-Fi connectivity.

## PAN9019

Wi-Fi 5 (2.4 GHz & 5 GHz) & Bluetooth 5.2 (BR/EDR/LE)

Elevate your heat pump's connectivity with PAN9019(A) – Wi-Fi 6, Bluetooth 5.2 and 802.15.4, based on NXP's IW611 or IW612. Streamlined design, cost efficiency, and adaptive antenna options for optimal performance, ensuring compliance in any enclosure.



## PAN9028



- » Simple HW design & reduction of BOM costs including PMIC
- » Possibility to switch between Chip Antenna & Bottom Pad
- » Power Tables stored on OTP for fulfilling regional regulatory requirements
- » Certified External antenna for radio unfriendly enclosures
- » Regional certification available for

## PAN9019



- » Small size
- » Reducing BOM costs by including functional Buck converter
- » Easy certification by storing Power Tables in configuration files
- » Certified antenna types: Chip, terminal hinge, FPC
- » Regional certification available for

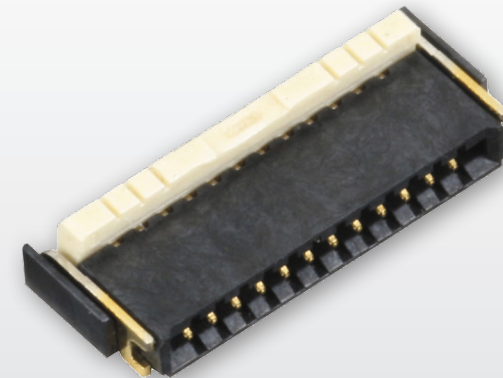


# FPC/FFC CONNECTORS

Pitch 0.5 mm, low profile/space saving and double top and bottom contacts construction

Efficient, versatile, and reliable -  
our connectors are designed to elevate  
your devices and equipment.

The Y5B/Y5BW series (0.5mm pitch) is a connector featuring V-by-One®HS interface for high-speed signals. It has a low profile design, preventing displacement of FPC insertion, and a lock hold type for enhanced FPC holding force. The structure includes notches on both ends of the FPC with holding contacts, ensuring secure positioning and preventing positional displacement. With a height of 1.00 mm and depth of 3.20 mm (3.70 mm with lever), it offers a space-saving design. Additionally, it provides temporary FPC holding until the lever is closed, and the holding contacts lock the FPC by its notches, further enhancing the holding force.



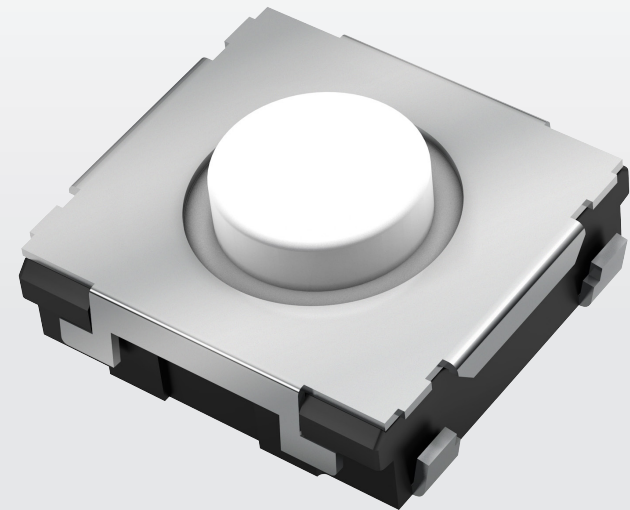
- » Double top and bottom contacts construction
- » Wiring patterns can be placed under the connector
- » Time and effort can be reduced by delivering with lever open
- » Lock hold type (Y5BW) with excellent holding force is available

# LIGHT TOUCH SWITCHES

6mm Square Thin Type SMD – highly reliable switch for harsh environment applications such as heat pumps

” 100k life cycles possible “  
with a high operating force of 3,5N.

The 6mm Square Thin Type SMD Tactile Switches measure 6.5mm x 6.0mm and offer exceptional durability and tactile features for click feeling, click sound, and travel. They offer a short switch travel distance for quick output and come with or without ground terminals, along with J-Bent and straight terminal options. These switches are well-suited for diverse applications such as medical devices, industrial lighting, and industrial communications.



- » External dimensions : 6.5 mm × 6.0 mm, height 1.8 mm ( excluding the push plate )
- » With or without ground terminal, height, operating force
- » Overstroke travel

# CHIP RESISTORS

## Soft terminations for longer lifetime and reliability

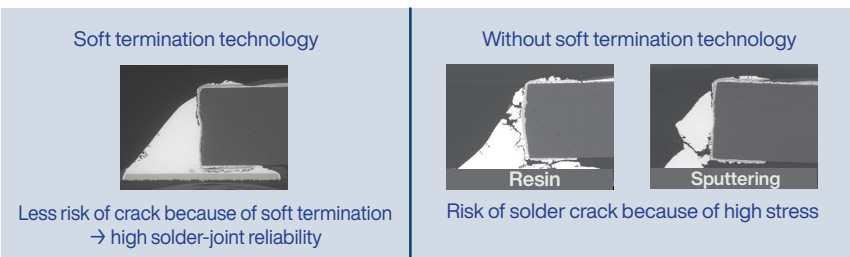
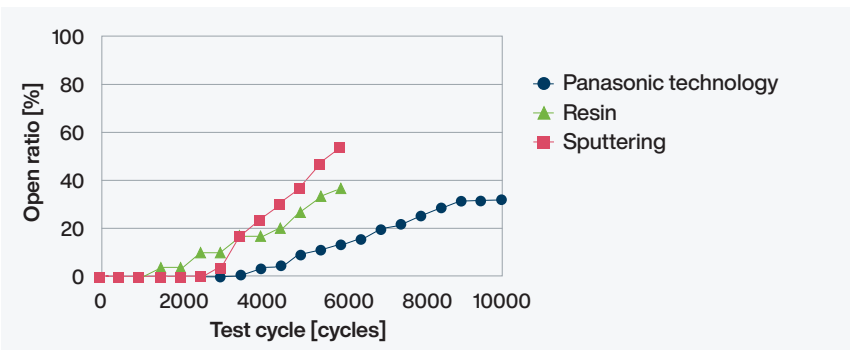
” Lower risks of joint cracks even in challenging environments “

Panasonic's lineup of SMD resistors boasts advanced features and technologies tailored to meet the demands of heat pump systems.

Panasonic resistors adopt soft termination technology, which consists in the application of a soft resin in the side electrode, that maintain excellent solder connection reliability even in harsh temperature cycles.

### Heat pump - recommended serie

- High temperature thick film chip resistors (ERJH series)
- Anti-surge thick film resistors (ERJP series)
- High power wide terminal thick film chip resistors (ERJB and ERJD series)



- » Soft termination technology for highest solder-joint reliability
- » Resistance values from 10mΩ to 10MΩ
- » High temperature up to 175°C available, with 100% rated temperature up to 105°C
- » AEC-Q200, RoHS, and REACH compliant
- » Anti-pulse and anti-sulfur types available

# 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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