

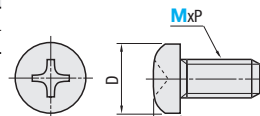
Note that, for some of the types shown here, order might be unable to be received by the MISUMI Malaysia, Indonesia and/or India offices.

# Plastic Phillips Pan Head Screws

Material: PPS.PEEK (Available in Pkg.)



Type	Material
PACK-PPSA	PPS (Polyphenylenesulfide)
PACK-PEKS	PEEK (Polyetheretherketone)



- ① 1 pkg. contains 100 pcs.
- ② The surface colors of plastic Phillips pan head screws may change somewhat depending on production lot and other conditions.
- ③ Sometimes black spots on the surface may be seen, which does not affect its performance.

Part Number	M x P	D	H	PACK-PPSA		PACK-PEKS				
				Unit Price	Volume Discount Rate	Unit Price	Volume Discount Rate			
2.6-6	8 x 0.45	4.5	1.7	1-9	10-50	1-9	10-50			
3-6				3 x 0.5	5.5	2	1-9	10-50	1-9	10-50
8							1-9	10-50	1-9	10-50
10							1-9	10-50	1-9	10-50
12	1-9	10-50	1-9				10-50			

Part Number	M x P	D	H	PACK-PPSA		PACK-PEKS	
				Unit Price	Volume Discount Rate	Unit Price	Volume Discount Rate
4-6	4 x 0.7	7	2.6	1-9	10-50	1-9	10-50
8				1-9	10-50	1-9	10-50
10				1-9	10-50	1-9	10-50
12				1-9	10-50	1-9	10-50
15	1-9	10-50	1-9	10-50	1-9	10-50	
20	1-9	10-50	1-9	10-50	1-9	10-50	

Part Number	M x P	D	H	PACK-PPSA		PACK-PEKS	
				Unit Price	Volume Discount Rate	Unit Price	Volume Discount Rate
6-10	6 x 1.0	10.5	3.9	1-9	10-50	1-9	10-50
15				1-9	10-50	1-9	10-50
20				1-9	10-50	1-9	10-50

④ For orders larger than indicated quantity, please check with WOS.

Ordering Example: **PACK-PEKS4-20**  
① 1 pkg. contains 100 pcs.

## Mechanical Properties (Reference)

	Tensile Breaking Load N		Torsional Breaking Torque N · m	
	PACK-PPSA	PACK-PEKS	PACK-PPSA	PACK-PEKS
M2.6	440	312	0.19	0.16
M3	570	430	0.36	0.3
M4	980	765	0.71	0.64
M5	1570	1230	1.42	1.28
M6	2250	1670	2.11	2.26

- ⑤ Shown above are reference values and not guaranteed.
- ⑥ Recommended tightening torque is torsional shear torque x50%. Use a torque driver and torque wrench for tightening.
- ⑦ Mechanical characteristics change depending on the operating environment. Testing is recommended under the applicable conditions prior to usage.

## Guideline for Selection of Plastic Screws by Material①

Item	RENY	PPS	PPS Non-Glass Fiber	PEEK
Lightness	△	△	○	○
Water Absorption Stability	○	○	○	△
Strength, Rigidity	○	○	○	○
Impact Resistance	○	○	○	○
Friction Resistance, Abrasion Resistance	○	○	○	○
Heat Resistance	△	○	○	○
Flame Resistance	△	○	○	○
Electrical Properties	○	○	○	○
Weather Resistance	○	○	○	○

○: Excellent ○: Good △: Questionable

## Chemical Resistance Data (Reference)

Chemical Name	Temperature	RENY	PPS / PPS Non-Glass Fiber	PEEK
Hydrochloric Acid 10%	80°C	X	○	○
Hydrochloric Acid 10%	Ambient Temperature	X	○	○
Nitric Acid 10%	80°C	X	△	○
Nitric Acid 10%	Ambient Temperature	X	○	○
Sulfuric Acid 30%	80°C	X	○	○
Sulfuric Acid 10%	80°C	X	○	○
Sulfuric Acid 10%	Ambient Temperature	X	○	○
Sodium Hydroxide 30%	80°C	△	○	○
Sodium Hydroxide 10%	Ambient Temperature	○	○	○
Calcium Chloride (Saturation)	80°C	△	○	○
Acetone	Ambient Temperature	○	○	○
Methanol	60°C	○	○	○
Gasoline	Ambient Temperature	○	○	○
Light Oil	Ambient Temperature	○	○	○
Motor Oil	80°C	○	○	○
Gear Oil	100°C	○	○	○

- : Not Affected ○: Hardly Affected △: Somewhat Deteriorated
- ⑧ Chemical resistances vary depending on the condition of use. Be sure to test the product before use under expected application conditions.

•RENY-Glassfiber Reinforced Polyamide MXD6  
RENY is based on polyamide MXD6 and is also a crystalline engineered plastic reinforced with 50% glass fiber. It has the highest strength and elasticity among engineered plastics, and excels in both oil and heat resistance. Thus, it is used as an alternative to metal.

• PPS-Polyphenylenesulfide  
PPS is a crystalline super engineered plastic. It has excellent heat resistance, and does not deteriorate in physical properties even when it is used for long durations in high temperature atmosphere. In addition, it excels in chemical resistance, mechanical characteristics, electrical properties and dimensional stability.

• PEEK-Polyetheretherketone  
PEEK is semicrystalline super engineered plastic with the highest performance. It has the highest chemical resistance among all engineered plastics. The only generally used chemical that can dissolve PEEK is concentrated sulfuric acid. PEEK also excels in heat resistance, abrasion resistance, flame resistance and hydrolysis resistance.

## Guideline for Selection of Plastic Screws by Material②

Strength	RENY > PPS > PEEK > PPS Non-Glass Fiber
Heat Resistance	PPS / PPS Non-Glass Fiber > PEEK > RENY
Chemical Resistance	PEEK > PPS / PPS Non-Glass Fiber > RENY

- RENY and PPS contains glass fiber.
- Continuous Use Temperature RENY: 105°C PPS / PPS Non-Glass Fiber: 200°C PEEK: 180°C
- Combustibility RENY: UL94HB PPS / PPS Non-Glass Fiber: PEEK:UL94 V-0

## Physical Properties Table (Reference) ③ Shown above are reference values and not guaranteed.

Characteristics	Test Method (ASTM)	Unit	RENY	PPS	PPS Non-Glass Fiber	PEEK
<b>&lt;Mechanical Characteristics&gt;</b>						
Tensile Strength	D638	MPa	285	196	90	91
Elongation	D638	%	2.1	2.2	-	50-120
Bending Strength	D790	MPa	380	255	140	147
Flexural Modulus	D790	GPa	17.4	13.2	3.8	3.9
Izod Impact Strength (Notched)	D256	J/m	110	98	-	88
Rockwell Hardness	D785	R and M Scale	M111	M110	-	R126
<b>&lt;Thermal Characteristics&gt;</b>						
Deflection Temperature under Load (1.82Mpa)	D648	°C	234	270	100	152
Linear Expansion Coefficient	D696	10 <sup>-5</sup> /K	1.5	1.0	-	5.0
<b>&lt;Electrical Characteristics&gt;</b>						
Dielectric Constant (10 <sup>4</sup> Hz)	D150	-	4	4.6	3.6	3.3
Dielectric Tangent (10 <sup>4</sup> Hz)	D150	-	0.009	0.002	0.001	0.004
Volume Resistivity	D257	Ω · cm	1.0×10 <sup>9</sup>	1.0×10 <sup>16</sup>	2.0×10 <sup>16</sup>	4.9×10 <sup>16</sup>
Dielectric Breakdown Strength	D149	MV/mm	17	12	-	17
Arc Resistance	D495	sec	129	120	-	23
<b>&lt;Others&gt;</b>						
Specific Gravity	D792	-	1.65	1.66	1.35	1.3
Water Absorption (At 23°C in water x 24h)	D570	%	0.14	0.015	0.02	0.500
Fiber Glass Content	-	%	50	40	-	-