



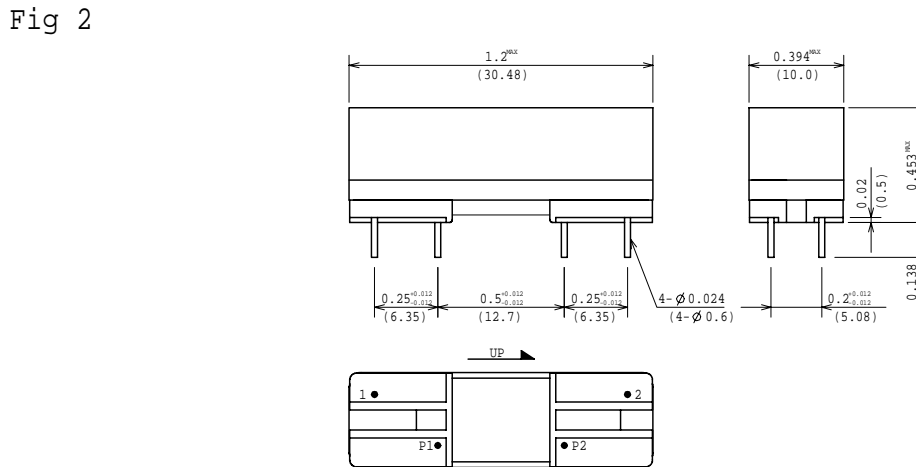
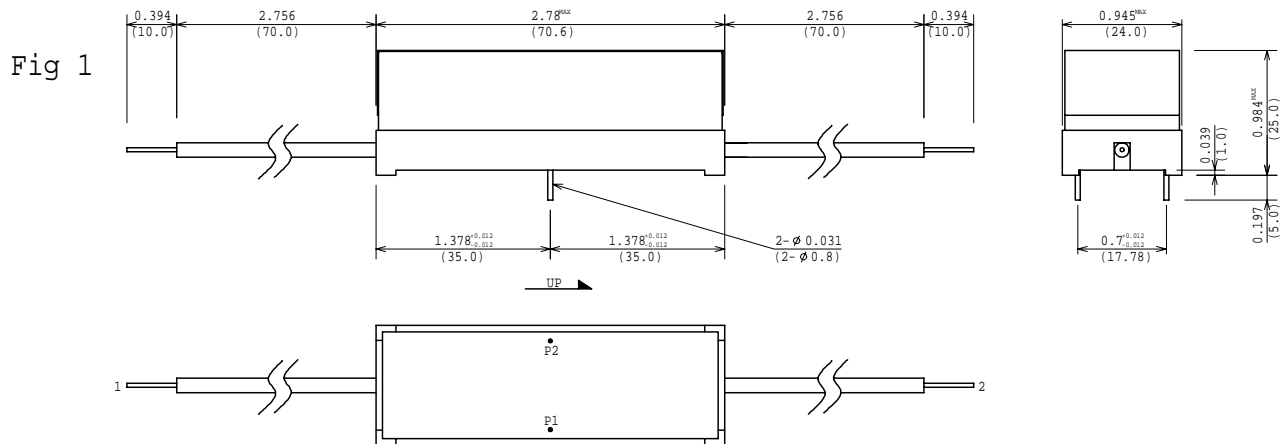
ESD(Electro-Static Discharge) & High Dielectric Strength Relays



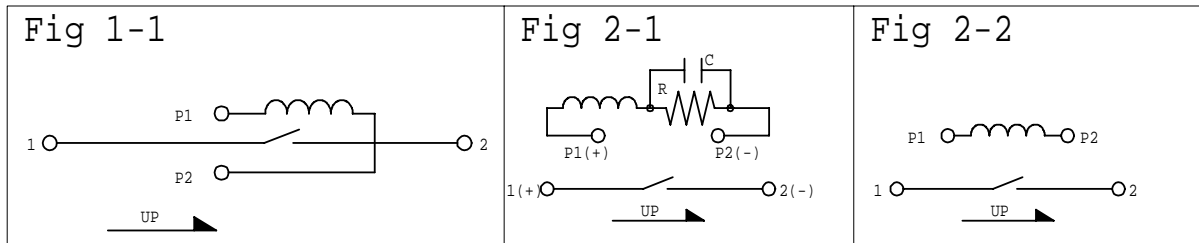
SANYU SWITCH Co.,LTD.

ESD(Electro-Static Discharge) Corresponding Relay (Low Capacitance)

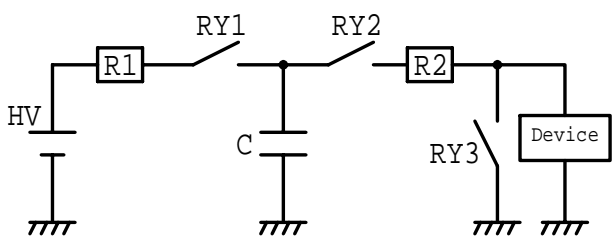
Mechanical Dimensions All dimension are measured in inch (millimeters)



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ESD(Circuit Example)



R1: Charge resistance (1Mohm)
 R2: Output resistance (1.5Kohm)
 C: High Voltage Output Charge Capacitor (100 ~ 200pF)

Specifications

ESD(Electro-Static Discharge) Type Relay (Low Capacitance)			8000VDC TYPE		4000VDC TYPE		2000VDC TYPE			
			Model Number							
			USM-P130xxV-90		UPM-174xxV-90		UPM-143xxV-90			
Parameters	Test Conditions	Units	I Form A							
Coil Specs										
Nominal Coil Voltage		VDC	12.0	24.0	12.0	24.0	12.0	24.0		
Coil Resistance	±10% at 20		180	720	180	600	300	1200		
Operate Voltage	at 20	VDC-MAX	8.8	17.6	8.8	17.6	8.8	17.6		
Release Voltage	at 20	VDC-MIN	1.2	2.4	1.2	2.4	1.2	2.4		
Contact Ratings										
Charge, Discharge Voltage	MAX DC/Peak AC Resist	Volts	9000 *1		4400 *1		2500 *1			
Switching Voltage	MAX DC/Peak AC Resist	Volts	3000(at 1mA)		2000(at 1mA)		1000(at 1mA)			
Switching Current	MAX DC/Peak AC Resist	Amps	5.0		1.0		1.0			
Carry Current	MAX DC/Peak AC Resist(at 30)	Amps	10.0		5.7		5.2			
	MAX DC/Peak AC Resist(at 60)	Amps	5.0		2.8		2.6			
Contact Rating	MAX DC/Peak AC Resist	Watts	250		50		50			
Life Expectancy	at 1V 10mA	× 10 ⁹ Cyc.	1000		1000		1000			
	at 8000V 6mA	× 10 ³ Cyc.	100		-		-			
	at 4000V 3mA	× 10 ³ Cyc.	-		100		-			
	at 2000V 1.5mA	× 10 ³ Cyc.	-		-		100			
Contact Resistance	MAX Initial at Operate Voltage	m	50		80		80			
Relay Specifications										
Insulation Resistance	Between All Isolated Pins at 100V 20 65%RH	-MIN	10 ¹⁰		10 ¹⁰		10 ¹⁰			
Capacitance	Across Open Contacts	pF	1.1		0.5		0.5			
	Contact(Pin2) to Contact(Pin1)+Coil	pF	2.0		0.8		0.8			
Dielectric Strength	Between Contacts	VDC-MIN	9000		4400		2500			
	Contacts to Coil	VDC-MIN	9000		4400		2500			
Operate Time (No Bounce)	at Nominal Coil Voltage 5Hz Square Wave	msec.-MAX	10.0		4.0		3.0			
Release Time	Diode Suppression	msec.-MAX	10.0		4.0		3.0			
Mechanical Dimensions			Fig 1		Fig 2					
SCHEMATIC			Fig 1-1		Fig 2-1		Fig 2-2			
Environmental Ratings			Storage Temp:-20 ~ +80							
Measurement Reference Condition			Operating Temp:-10 ~ +60							
Temp:15 ~ 35 Humidity:25% ~ 75%RH			Vibration: 20G's to 2000Hz Shock: 50G's							
Atmospheric Pressure: 860 ~ 1060hpa										

***1 P1 Circuit Example. "RY2" in use.**

ESD Corresponding Relays(P1 Circuit Example)

	RY1	RY2	RY3
8000VDC Type	UPM-130/274**V	USM-P130**V-90	UPM-130/274**V
4000VDC Type	UPM-174**V	UPM-174**V-90	UPM-174**V
2000VDC Type	UPM-143**V	UPM-143**V-90	UPM-143**V

Notes:

(1) For usage note, please be advised that there is coil polarity specification.

(2) For mounting, please note that there is an indication of UP direction and mounting angle should be in the range of vertical ± 30°

High Dielectric Strength Type Relay

Mechanical Dimensions All dimension are measured in inches (millimeters)

Fig 3

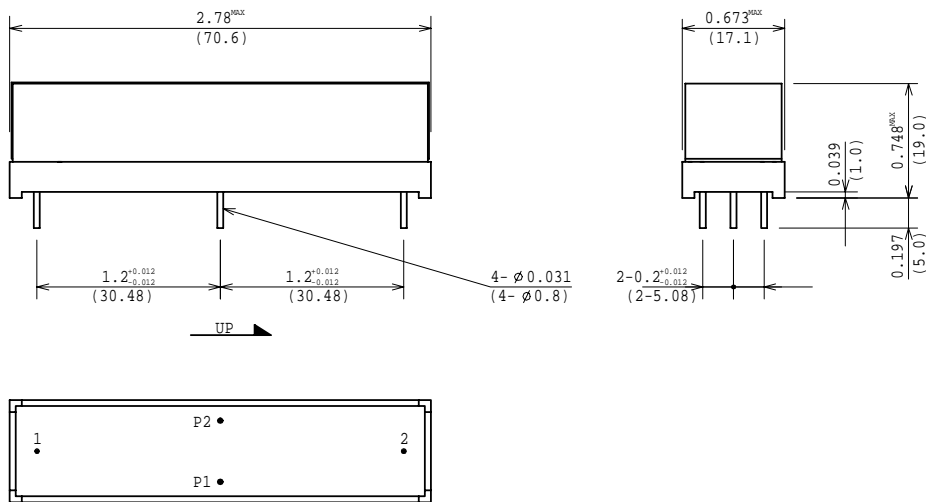
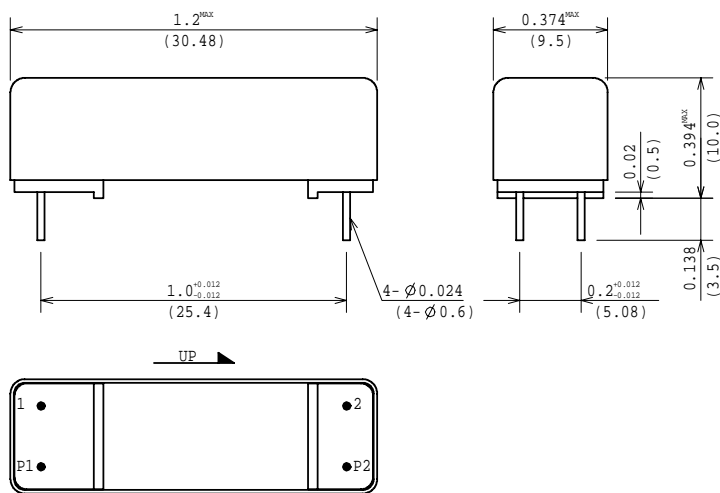
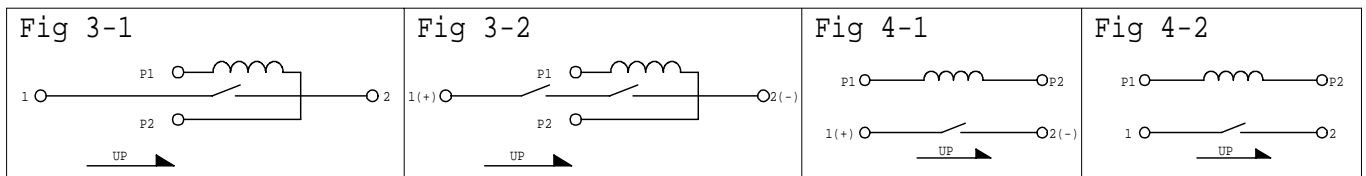


Fig 4



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Specifications

High Dielectric Strength Type Relay			Model Number											
			UPM-130xxV			UPM-274xxV			UPM-174xxV			UPM-143xxV		
Parameters	Test Conditions	Units	IForm A											
Coil Specs														
Nominal Coil Voltage		VDC	5.0	12.0	24.0	5.0	12.0	24.0	5.0	12.0	24.0	5.0	12.0	24.0
Coil Resistance	±10% at 20		25	130	440	100	400	1600	100	400	1600	100	400	1600
Operate Voltage	at 20	VDC-MAX	3.75	8.8	17.6	3.75	8.8	17.6	3.75	8.8	17.6	3.75	8.8	17.6
Release Voltage	at 20	VDC-MIN	0.7	1.2	2.4	0.7	1.2	2.4	0.7	1.2	2.4	0.7	1.2	2.4
Contact Ratings														
Charge/Discharge Voltage	MAX DC/Peak AC Resist	Volts	9000 *1			8800 *1			4400 *1			2500 *1		
Switching Voltage	MAX DC/Peak AC Resist	Volts	3000(at 1mA)			3000(at 1mA)			2000(at 1mA)			1000(at 1mA)		
Switching Current	MAX DC/Peak AC Resist	Amps	5.0			2.0			1.0			1.0		
Carry Current	MAX DC/Peak AC Resist(at 30)	Amps	10.0			5.7			5.7			5.2		
	MAX DC/Peak AC Resist(at 60)	Amps	5.0			2.8			2.8			2.6		
Contact Rating	MAX DC/Peak AC Resist	Watts	250			50			50			50		
Life Expectancy	at 1V 10mA	× 10 ⁶ Cyc.	1000			1000			1000			1000		
	at 8000V 6mA	× 10 ³ Cyc.	100			-			-			-		
	at 4000V 3mA	× 10 ³ Cyc.	-			100			100			-		
	at 2000V 1.5mA	× 10 ³ Cyc.	-			-			-			100		
Contact Resistance	MAX Initial at Operate Voltage	m	50			100			50			50		
Relay Specifications														
Insulation Resistance	Between All Isolated Pins at 100V 20 65%RH	-MIN	10 ¹⁰			10 ¹⁰			10 ¹⁰			10 ¹⁰		
Dielectric Strength	Between Contacts	VDC-MIN	9000			8800			4400			2500		
	Contacts to Coil	VDC-MIN	9000			8800			4400			2500		
Operate Time (No Bounce)	at Nominal Coil Voltage 50Hz Square Wave	msec.-MAX	10.0(at 10Hz)			5.0			5.0			3.0		
Release Time	Diode Suppression	msec.-MAX	10.0(at 10Hz)			5.0			5.0			3.0		
Mechanical Dimensions			Fig 3						Fig 4					
SCHEMATIC			Fig 3-1			Fig 3-2			Fig 4-1			Fig 4-2		
Environmental Ratings			Storage Temp:-20 ~ +80											
Measurement Reference Condition			Operating Temp:-10 ~ +60											
Temp:15 ~ 35 Humidity:25% ~ 75%RH			Vibration: 20G's to 2000Hz Shock: 50G's											
Atmospheric Pressure: 860 ~ 1060hpa														

***1 P1 Circuit Example. "RY1" & "RY3" in use.**

ESD Corresponding Relays(P1 Circuit Example)

	RY1	RY2	RY3
8000VDC Type	UPM-130/274**V	USM-P130**V-90	UPM-130/274**V
4000VDC Type	UPM-174**V	UPM-174**V-90	UPM-174**V
2000VDC Type	UPM-143**V	UPM-143**V-90	UPM-143**V

Notes:

(1) For usage note, please be advised that there is coil polarity specification.

(2) For mounting, please note that there is an indication of UP direction and mounting angle should be in the range of vertical ± 30°