

General Purpose Relay	KML
-----------------------	-----

- 15A switching capability
- 1.5kV dielectric strength
(between coil and contacts)
- Various terminals available
- Socket available
- 1 to 3 pole configurations



1. COIL DATA (at 23 °C)

1) DC Type

Nominal Voltage (VDC)	Pick-up Voltage (VDC)	Drop-out Voltage (VDC)	Max Allowable Voltage (VDC)	Coil Resistance x (1±10%) (Ω)		Coil Power (W)	
				1C, 2C	3C	1C, 2C	3C
5	4.0	0.50	5.5	27.5		0.9 to 1.1	1.4
6	4.8	0.60	6.6	40	26		
12	9.6	1.20	13.2	160	107		
24	19.2	2.40	26.4	650	410		
48	38.4	4.80	52.8	2600	1700		
110	88.0	11.0	121	11000	8500		

2) AC Type

Nominal Voltage (VAC)	Pick-up Voltage (VAC)	Drop-out Voltage (VAC)	Max Allowable Voltage (VAC)	Coil Resistance x (1±10%) (Ω)		Coil Power (VA)	
				1C, 2C	3C	1C, 2C	3C
6	4.8	1.8	6.6	11.5	6.7	1.2 to 1.8	2
12	9.6	3.6	13.2	46	24		
24	19.2	7.2	26.4	184	100		
48	38.4	14.4	52.8	735	400		
120	96.0	36.0	132	4550	2300		
220/240	176.0	72.0	264	14400	8650		

2. CONTACT DATA

Contact Arrangement	1C	2C, 3C
Contact Resistance	100mΩ (at 1A 6VDC)	
Contact Material	AgCdO	
Contact Ratings (Resistive load)	15A 250VAC / 30VDC	10A 250VAC / 30VDC
Max Switching Voltage	250VAC / 30VDC	
Max Switching Current	15A	10A
Max Switching Power	3750VA / 450W	2500VA / 300W
Life Expectancy	Electrical	100,000 operations
	Mechanical	10,000,000 operations

3. CHARACTERISTICS

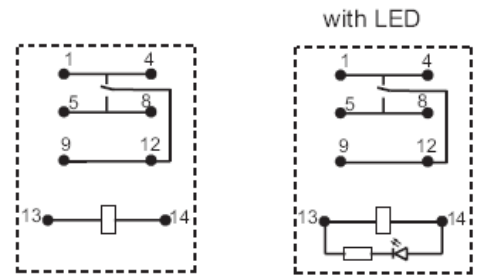
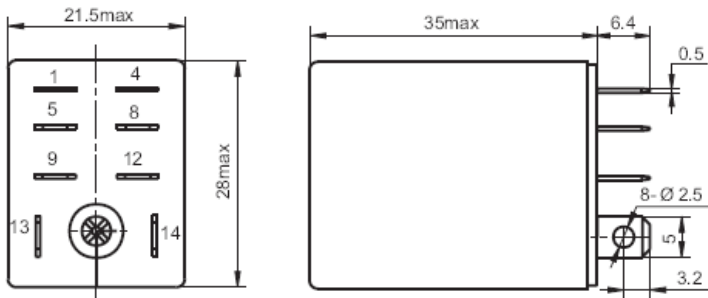
Insulation Resistance		500MΩ at 500VDC
Dielectric Strength	Open Contacts	1000VAC 1min
	Contacts and Coil	1500VAC 1min
	Contact Sets	1500VAC 1min
Operate Time (at nominal voltage)		25ms max
Release Time (at nominal voltage)		25ms max
Temperature Rise (no-load, at nominal voltage)		60K max
Temperature Range		-40°C ~ 70°C
Shock Resistance	Functional	98 m/s ²
	Destructive	980 m/s ²
Vibration Resistance		10Hz to 55Hz 1mm DA
Humidity		98% RH, 40°C
Termination		PCB, Plug-in, Top mounting
Weight		1C, 2C: Approx. 37g 3C: Approx. 55g
Outline dimension (L x W x H)		1C, 2C: 28.0 x 21.5 x 35.0 mm 3C: 31.5 x 28.0 x 36.0 mm

4. ORDERING INFORMATION

<u>KML</u>	<u>1</u>	-	<u>A24</u>	<u>P</u>
①	②	③	④	
① Relay Model				
② Contact Arrangement		1 : 1 Form C (SPST) 2 : 2 Form C (DPDT) 3 : 3 Form C (3PDT)		
③ Coil Voltage		DC : 5, 6, 12, 24, 48, 110VDC AC : 6, 12, 24, 48, 120, 220/240VAC		
④ Terminal Form		P: PC board S: Plug-in B: Top mounting SL: Light emitting diode wired plug-in PL: Light emitting diode wired pc board		

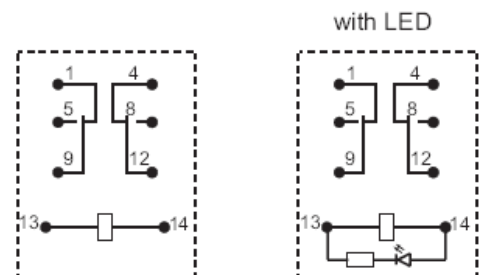
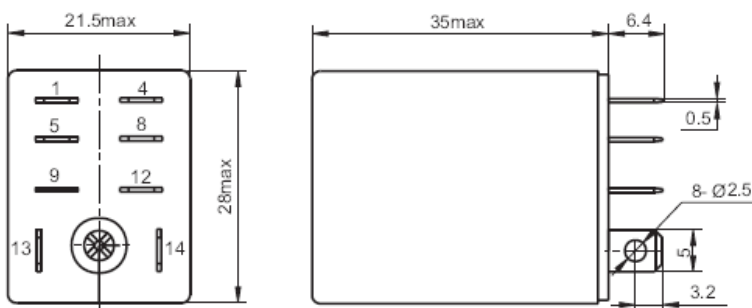
5. DIMENSIONS (Unit: mm)

1 Form C, Plug-in



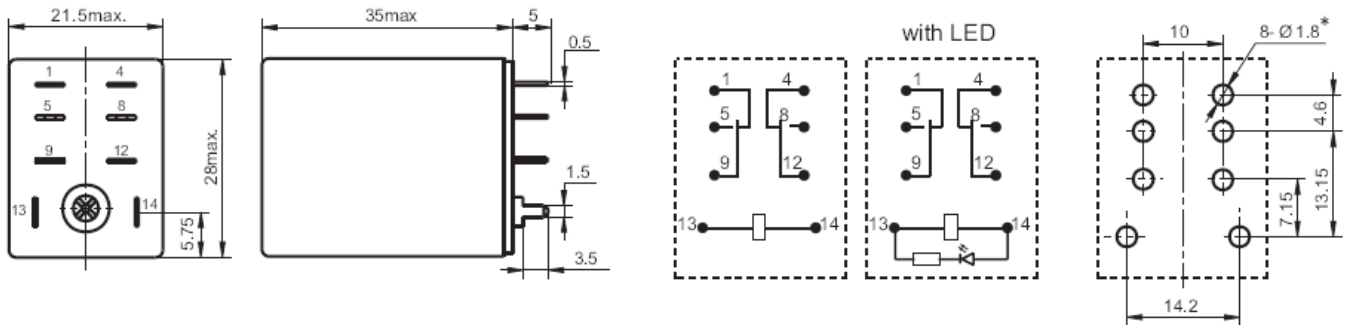
Remark: For AC parts with diode, the positive and negative pole markings on wiring diagram are not applicable

2 Form C, Plug-in



Remark: For AC parts with diode, the positive and negative pole markings on wiring diagram are not applicable

2 Form C, PCB



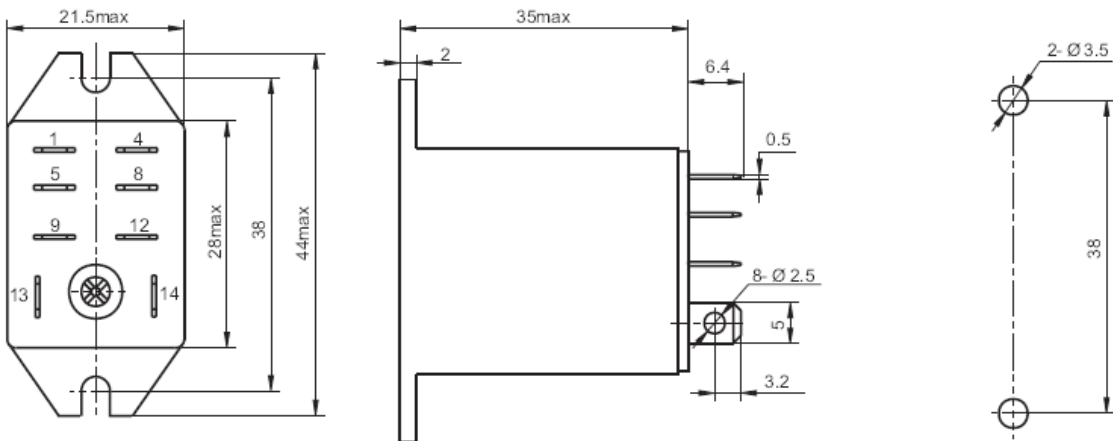
Remark: For AC parts with diode, the positive and negative pole markings on wiring diagram are not applicable

*: Please adjust the site of the diameter according to the actual application

2 Form C, Top mounting

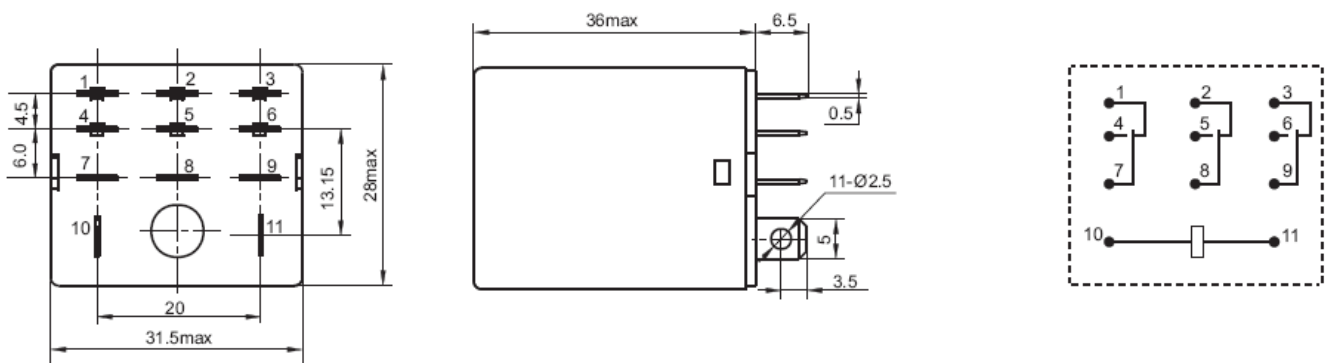
Outline Dimensions

Mounting holes



Remark: 1) In case of no tolerance shown in outline dimension: outline dimension $\leq 1\text{mm}$, tolerance should be $\pm 0.2\text{mm}$; outline dimension $> 1\text{mm}$ and $\leq 5\text{mm}$, tolerance should be $\pm 0.3\text{mm}$; outline dimension $> 5\text{mm}$, tolerance should be $\pm 0.4\text{mm}$.
2) The tolerance without indicating for PCB layout is always $\pm 0.1\text{mm}$.

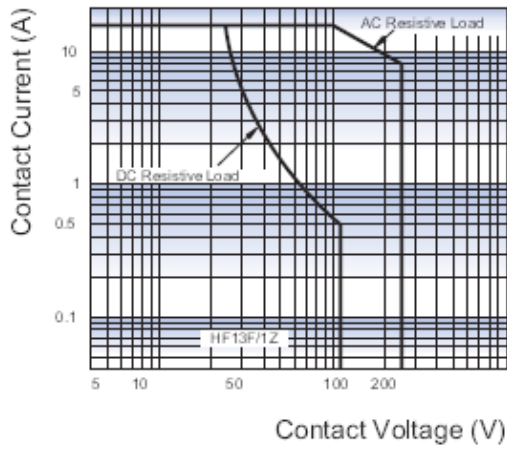
3 Form C, Plug-in



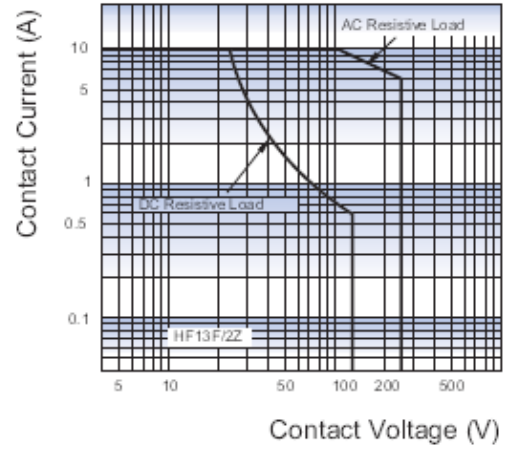
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension $\leq 1\text{mm}$, tolerance should be $\pm 0.2\text{mm}$; outline dimension $> 1\text{mm}$ and $\leq 5\text{mm}$, tolerance should be $\pm 0.3\text{mm}$; outline dimension $> 5\text{mm}$, tolerance should be $\pm 0.4\text{mm}$.
2) The tolerance without indicating for PCB layout is always $\pm 0.1\text{mm}$.

6. CHARACTERISTIC CURVE

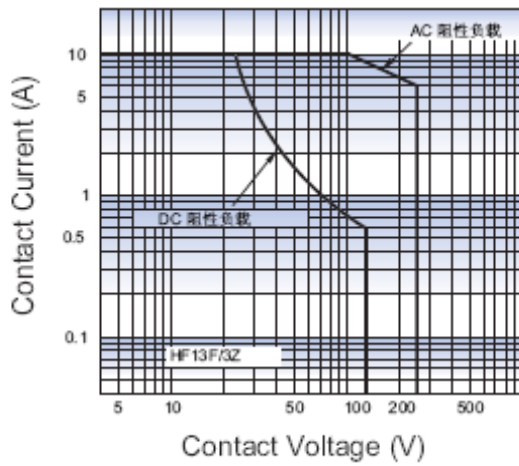
MAXIMUM SWITCHING POWER(1C)



MAXIMUM SWITCHING POWER(2C)



MAXIMUM SWITCHING POWER(3Z)



Relay Socket	KML2-C
---------------------	---------------



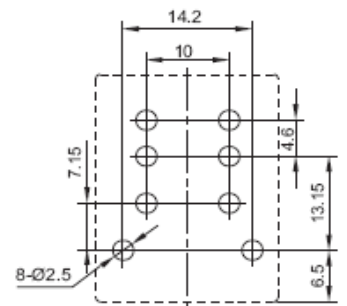
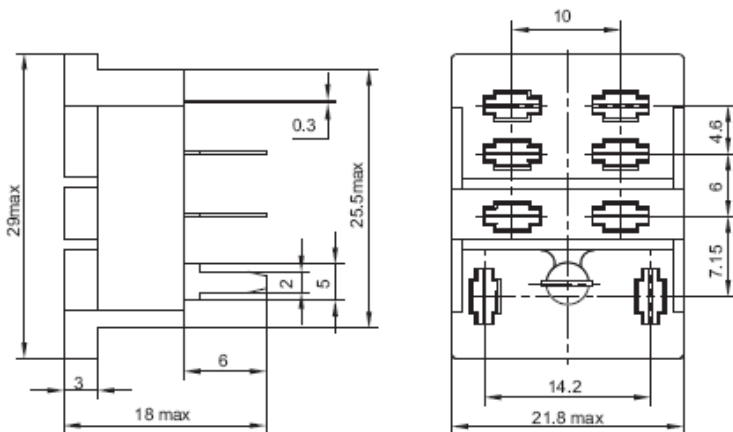
PCB terminal,
PCB mounting

- Ambient temperature : -40°C to 70°C
- Rated voltage : 250VAC
- Rated current : 10A (per pole)
- Dielectric strength(Min.) : 2000VAC
- Steel retainer : available
- Applicable relay type : KML series (2 poles)

Dimensions, PC Board Layout and Wiring Diagram	Unit: mm
---	----------

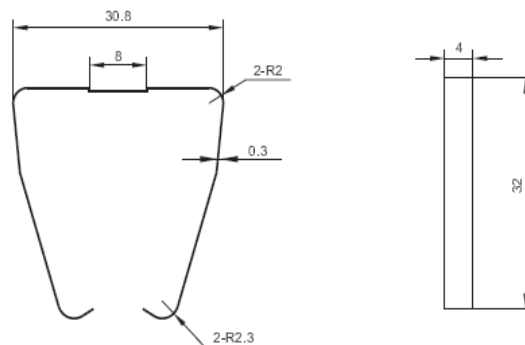
Outline Dimensions

PCB Layout



(Top View)

Retainer Dimensions



Relay Socket	KML2-E
--------------	--------

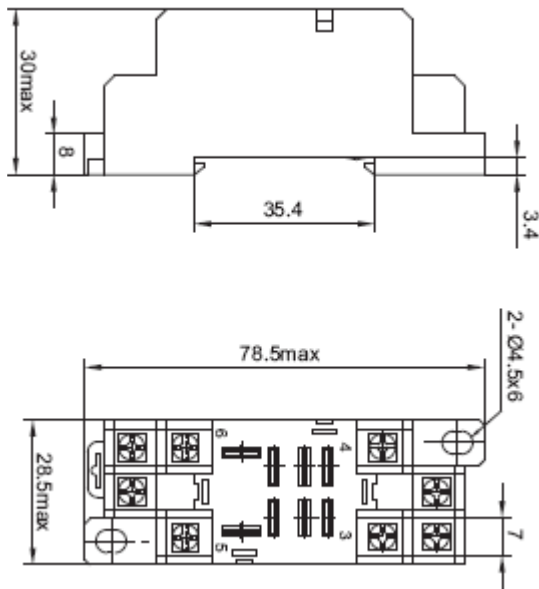


Screw terminal,
DIN rail or Screw mounting
Without finger protection device

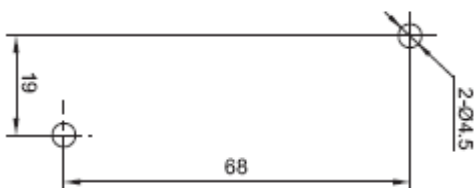
- Ambient temperature : -40°C to 70°C
- Rated voltage : 250VAC
- Rated current : 15A (per pole)
- Dielectric strength(Min.) : 2000VAC
- Terminal torque : 1.0Nm
- Wire strip length : 7mm
- Max. wire range: 2x1.5mm²
- Applicable relay type : KML series (1 pole and 2 poles)

Dimensions, PC Board Layout and Wiring Diagram	Unit: mm
--	----------

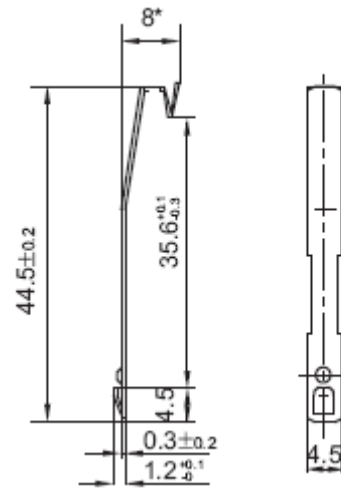
Outline Dimensions (Top View)



PCB Layout



Retainer Dimensions



Wiring Diagram (Top View)

