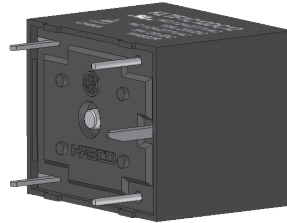




File No.:E75887



File No.:R 50306227



## FEATURES

- Highly reliable, low cost
- Miniature size & large switch capacity up to 20A
- High dielectric strength type
- Fully Sealed

## CONTACT RATINGS

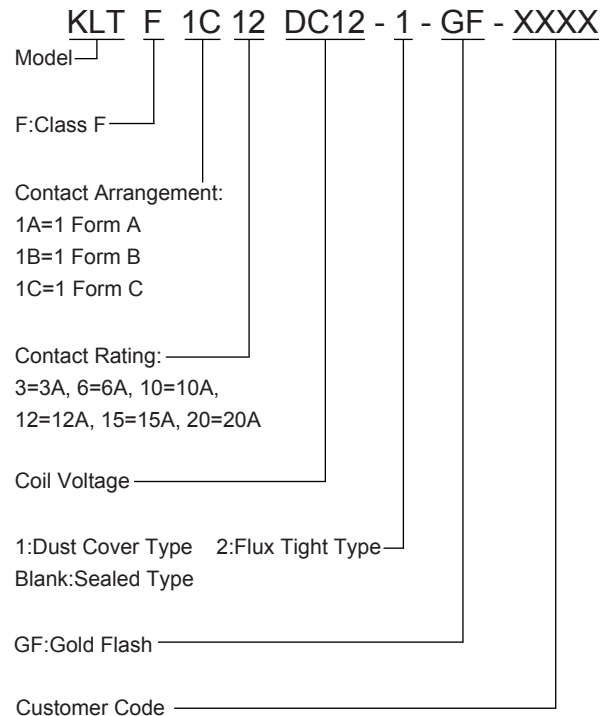
Contact Arrangement	1A, 1B, 1C
Contact Resistance	≤100mΩ (1A 24VDC)
Contact Material	AgSnO
Contact Rating(Resistive)	3A 277VAC/28VDC; 6A 277VAC/28VDC; 10A 277VAC/28VDC; 12A 277VAC/28VDC; 15A 277VAC/28VDC; 20A 277VAC/28VDC
Max. Switching Voltage	277VAC/28VDC
Max. Switching Current	20A
Max. Switching Power	5540VA/560W
Mechanical Life	1×10 <sup>6</sup> operations
Electrical Life	See more details at "safety approval ratings"

## CHARACTERISTICS

Insulation Resistance		100MΩ (at 500VDC)
Dielectric Strength	Between coil & contacts	1500VAC 1min
	Between open contacts	750VAC 1min
Operate time (at nomi. volt.)		≤8ms
Release time (at nomi. volt.)		≤5ms
Humidity		45% ~ 85% RH
Operation temperature		-55°C~+105°C
UL Class F		Insulation System Class F
Shock Resistance	Functional	98m/s <sup>2</sup>
	Destructive	980m/s <sup>2</sup>
Vibration resistance		10Hz to 55Hz 1.5mm DA
Unit weight		Approx. 12g
Construction		Sealed Type, Dust Cover Type, Flux Tight Type

Notes:1) The data shown above are initial values.  
2) Please find coil temperature curve in the characteristic curves.

## ORDERING INFORMATION



### Notes:

1. PC board assembled with dust cover type and flux tight type relays can not be washed and/or coated.
2. Dust cover type and flux tight type relays can not be used in the environment with dust, or H<sub>2</sub>S, SO<sub>2</sub>, NO<sub>2</sub> or similar gaseous environment etc.

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# RELAYS

## COIL DATA

at 25°C

### 3A, 6A, 10A, 12A, 15A

Nominal Voltage VDC	Operate Voltage (Max.) VDC	Release Voltage (Min.) VDC	*Max. Allowable Voltage VDC	Coil Resistance $\Omega \pm 10\%$
3	2.25	0.3	3.9	25
5	3.75	0.5	6.5	70
6	4.50	0.6	7.8	100
9	6.75	0.9	11.7	220
12	9.00	1.2	15.6	400
18	13.5	1.8	23.4	900
24	18.0	2.4	31.2	1600
48	36.0	4.8	62.4	6400

### 20A

Nominal Voltage VDC	Operate Voltage (Max.) VDC	Release Voltage (Min.) VDC	*Max. Allowable Voltage VDC	Coil Resistance $\Omega \pm 10\%$
3	2.25	0.3	3.9	20
5	3.75	0.5	6.5	55
6	4.50	0.6	7.8	80
9	6.75	0.9	11.7	180
12	9.00	1.2	15.6	320
18	13.5	1.8	23.4	720
24	18.0	2.4	31.2	1280
48	36.0	4.8	62.4	5120

Note:

"\*Max Allowable Voltage": The relay coil can endure max allowable voltage for a short period time only.

## COIL

Coil Power	3A-15A: 360mW 20A: 450mW
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## SAFETY APPROVAL RATINGS

UL&CUL		
UL&CUL	3A	3A 277VAC, G.P., 40°C, 6×10 <sup>3</sup> OPS 3A 28VDC, G.P., 40°C, 6×10 <sup>3</sup> OPS 3.6A 277VAC, Ballast, 40°C, 6×10 <sup>3</sup> OPS
	6A	6A 277VAC, G.P., 40°C, 6×10 <sup>3</sup> OPS 6A 28VDC, G.P., 40°C, 6×10 <sup>3</sup> OPS 3.6A 277VAC, Ballast, 40°C, 6×10 <sup>3</sup> OPS
	10A	10A 277VAC, G.P., 40°C, 6×10 <sup>3</sup> OPS 10A 28VDC, G.P., 40°C, 6×10 <sup>3</sup> OPS
	12A	12A 277VAC, G.P., 40°C, 6×10 <sup>3</sup> OPS 12A 28VDC, G.P., 40°C, 6×10 <sup>3</sup> OPS N.O./N.C.:10A/5A 28VDC, G.P., 40°C, 6×10 <sup>3</sup> OPS 3.6A 277VAC, Ballast, 40°C, 6×10 <sup>3</sup> OPS
	15A	15A 277VAC, G.P., 40°C, 6×10 <sup>3</sup> OPS N.O.:15A 28VDC, G.P., 40°C, 6×10 <sup>3</sup> OPS N.C.:12A 28VDC, G.P., 40°C, 6×10 <sup>3</sup> OPS N.O./N.C.:10A/5A 28VDC, G.P., 40°C, 6×10 <sup>3</sup> OPS 3.6A 277VAC, Ballast, 40°C, 6×10 <sup>3</sup> OPS
	20A	20A 277VAC, G.P., 40°C, 6×10 <sup>3</sup> OPS N.O.:20A 28VDC, G.P., 40°C, 6×10 <sup>3</sup> OPS N.C.:12A 28VDC, G.P., 40°C, 6×10 <sup>3</sup> OPS N.O./N.C.:10A/5A 28VDC, G.P., 40°C, 6×10 <sup>3</sup> OPS 3.6A 277VAC, Ballast, 40°C, 6×10 <sup>3</sup> OPS

TüV	
TüV	(KLT20)N.O.:20A 277VAC, 25°C, 3×10 <sup>4</sup> OPS N.O.:20A 125VAC, 25°C, 5×10 <sup>4</sup> OPS (KLT20)N.O.:15A 125VAC, 85°C, 2×10 <sup>4</sup> OPS N.O.:12A 250VAC, 105°C, 2×10 <sup>4</sup> OPS (KLT20)N.O.:20A 28VDC, 85°C, 2×10 <sup>4</sup> OPS N.C.:12A 277VAC, 25°C, 1×10 <sup>4</sup> OPS (KLT20)N.C.:12A 28VDC, 85°C, 2×10 <sup>4</sup> OPS N.O./N.C.:12A/10A 250VAC, 85°C, 1×10 <sup>4</sup> OPS N.O./N.C.:12A/10A 28VDC, 85°C, 1×10 <sup>4</sup> OPS

NOTES:

1. All values without specified temperature are at 25°C.
2. The above lists the typical loads only. Other loads may be available upon request.

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# RELAYS

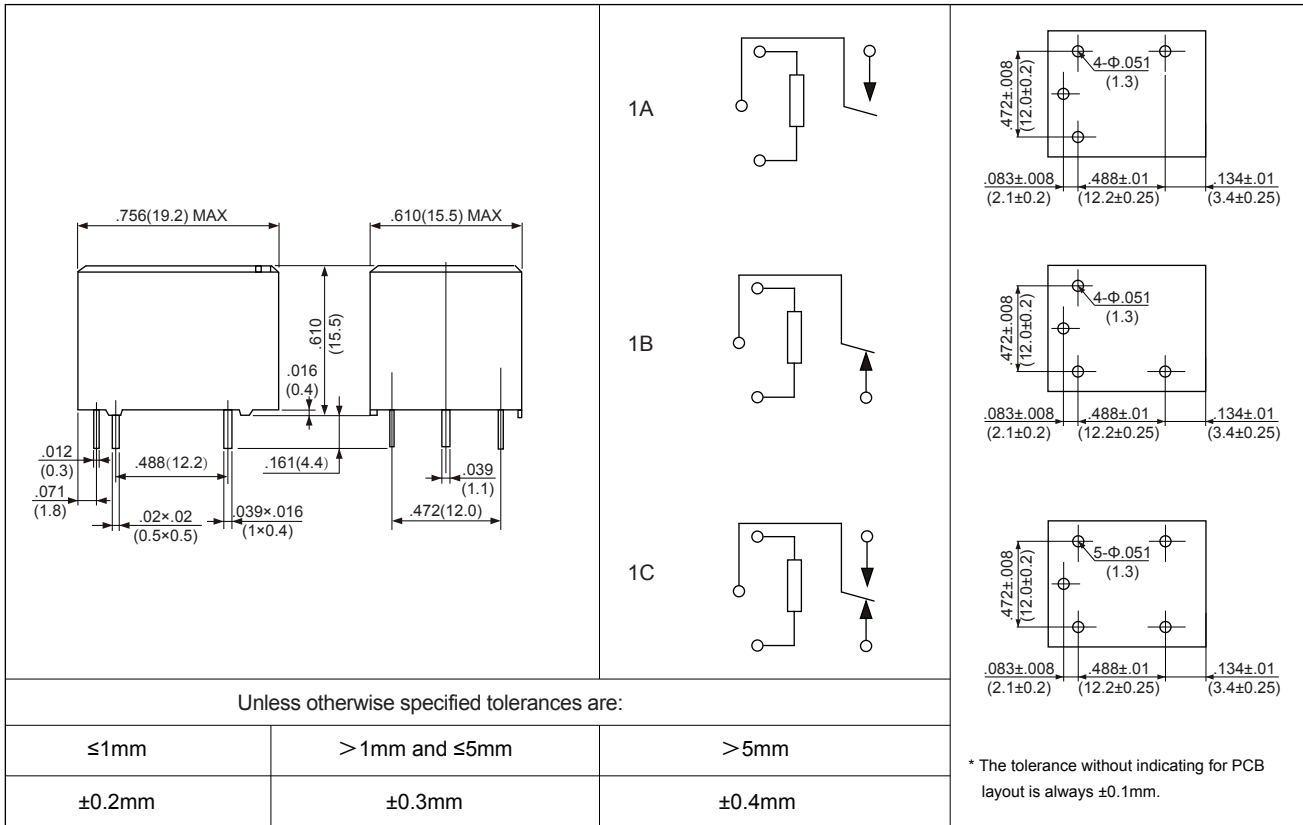
## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT.

Unit: inch(mm)

Outline Dimensions

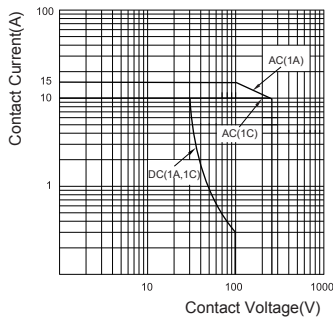
Wiring Diagram  
(Bottom view)

PCB Layout  
(Bottom view)

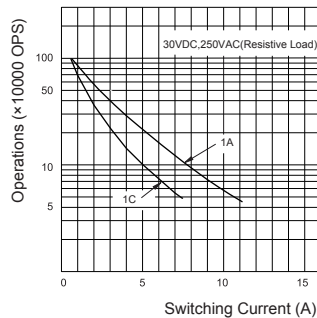


## CHARACTERISTIC CURVES

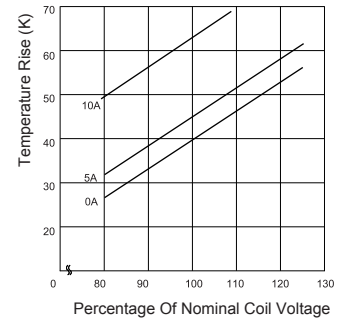
MAXIMUM SWITCHING POWER



ENDURANCE CURVE



COIL TEMPERATURE RISE



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# RELAYS

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## PACKAGING SPECIFICATION

TUBE	INNER CARTON	OUTER CARTON	OUTER CARTON SIZE
20PCS	1000PCS	2000PCS	L480mm*W245mm*H335mm

## APPLICATION GUIDELINES

### Automatic Wave Soldering

- \* Wave solder is the optimum method for soldering.
- \* Adjust the level of solder so that it does not overflow onto the top of the PC board.
- \* Unless otherwise specified, solder under the following conditions depending on the type of relay.

Preheat time 20°C-100°C	Rising slope 20°C-120°C	Decreasing slope Peak-150°C	Slodering temperature 255°C-265°C
90±5 seconds	<3°C/s	<4°C/s	3~5s

### Hand Soldering

- \* Keep the tip of the soldering iron clean.

Solder Iron	30W or 60W
Iron Tip Temperature	Approx. 350°C 662°F
Solder Time	Within approx. 3 seconds

- \* Immediate air cooling is recommended to prevent deterioration of the relay and surrounding parts due to soldering heat.
- \* Although the sealed type relay can be cleaned, avoid immersing the relay into cold liquid (such as washing solvent) immediately after soldering. Doing so may deteriorate the sealing performance.

### Discard the dropped product

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