

# PLT SERIES

# POWER RELAY



File No.:R 50267950



## FEATURES

- 20A or 25A switching capability
- Surge voltage up to 6kV (between coil and contacts)
- Explosion-proof products available

## CONTACT RATINGS

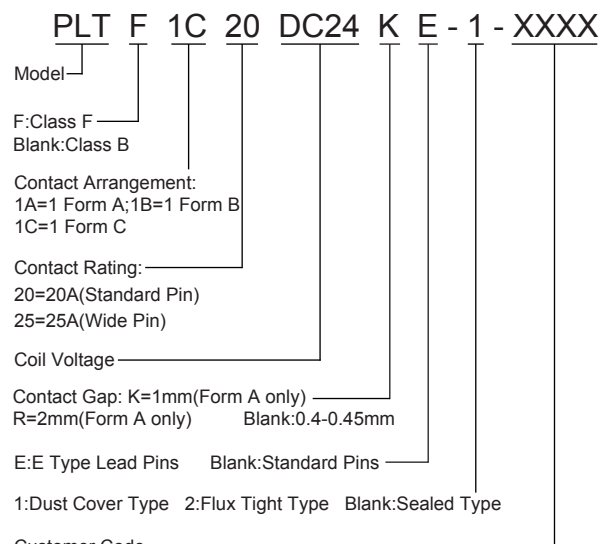
Contact Arrangement	1A, 1B, 1C	
Contact Resistance	≤100mΩ(1A 24VDC)	
Contact Material	AgSnO, AgSnOIn	
Contact Rating(Resistive)	N.O.:20A/277VAC N.C.:16A/125VAC	N.O.:25A/125VAC 17A/277VAC N.C.:20A/125VAC
Max. Switching Voltage	400VAC	400VAC(NO)
Max. Switching Current	20A	25A
Max. Switching Power	5540VA	4709VA
Mechanical Life	1×10 <sup>7</sup> operations	
Electrical Life	See more details at "safety approval ratings"	

## CHARACTERISTICS

Insulation Resistance	100MΩ (at 500VDC)	
Dielectric Strength	Between coil & contacts	2500VAC(PLT)/3500VAC(PLT-E) 1min
	Between open contacts	1000VAC 1min
Surge voltage(between coil & contacts)	6kV(1.2×50μs)	
Creepage(between coil & contacts)	≥4.8mm(PLT), ≥7.3mm(PLT-E)	
Clearance(between coil & contacts)	≥4.8mm(PLT), ≥7.3mm(PLT-E)	
Operate time (at nomi. volt.)	≤10ms	
Release time (at nomi. volt.)	≤5ms	
Humidity	5%~85% RH	
Operation temperature	-40°C~+105°C	
UL Class B/F	Insulation System Class B/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. 14g	
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.

## COIL DATA

at 25°C

Nominal Voltage VDC	Operate Voltage (Max.) VDC	Release Voltage (Min.) VDC	*Max. Allowable Voltage VDC	Coil Resistance Ω±10%	
				20A	25A
3	2.25	0.3	3.9	25	20
5	3.75	0.5	6.5	70	55
6	4.50	0.6	7.8	100	80
9	6.75	0.9	11.7	225	180
12	9.00	1.2	15.6	400	320
18	13.50	1.8	23.4	900	720
24	18.00	2.4	31.2	1600	1280
48	36.00	4.8	62.4	6400	5120

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

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# RELAYS

\* SINCE 1976 \*

TEL:(516) 328-9292 FAX:(516)326-9125 www.hascorelays.com email:info@hascorelays.com

## COIL

Coil Power	20A:360mW 25A:450mW
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## SAFETY APPROVAL RATINGS

UL&CUL	Non-Cd Contact (20A)	N.O.:20A 277VAC, G.P., 6×10 <sup>3</sup> OPS(40°C) N.O.:10A 120VAC, 3×10 <sup>4</sup> OPS(40°C) N.O.:5A 240VAC, 1×10 <sup>5</sup> OPS(40°C) N.O.:3A, 10A Inrush, 24VAC Pilot duty, 3×10 <sup>4</sup> OPS(40°C) N.O.:1A, 10A Inrush, 240VAC Pilot duty, 1×10 <sup>5</sup> OPS(40°C) N.O.:1.7A, 17A Inrush, 40VAC Pilot duty, 1×10 <sup>5</sup> OPS(40°C) N.O.:3.8FLA, 22.8 LRA, 120VAC HP, 1×10 <sup>5</sup> OPS(40°C) N.O.:3.6FLA, 21.6 LRA, 240VAC HP, 3×10 <sup>4</sup> OPS(40°C) N.O.:1.9FLA, 11.4 LRA, 240VAC HP, 1×10 <sup>5</sup> OPS(40°C) N.O.:8A 120VAC TV, 25×10 <sup>3</sup> OPS(40°C) N.O./N.C.:1/2HP 120VAC, 6×10 <sup>3</sup> OPS(40°C) N.O./N.C.:1/2HP 240VAC, 6×10 <sup>3</sup> OPS(40°C) N.C.:16A 125VAC, G.P., 6×10 <sup>3</sup> OPS(40°C) N.C.:10A 120VAC, 3×10 <sup>4</sup> OPS(40°C) N.C.:1.7A, 17A Inrush, 240VAC Pilot duty, 3×10 <sup>4</sup> OPS(40°C) N.C.:3.6FLA, 21.6 LRA, 240VAC HP, 3×10 <sup>4</sup> OPS(40°C) N.C.: 1000W 120VAC Tungsten, 1×10 <sup>4</sup> OPS(40°C) N.C.:3A 277VAC Electronic Ballast, 6×10 <sup>3</sup> OPS(40°C) N.C.:5A 277VAC Electronic Ballast, 6×10 <sup>3</sup> OPS(40°C)
	Non-Cd Contact (25A)	N.O.:25A 125VAC, G.P., 6×10 <sup>3</sup> OPS(40°C) N.O.:17A 277VAC, G.P., 6×10 <sup>3</sup> OPS(40°C) N.O.: 1500W 277VAC Ballast, 6×10 <sup>3</sup> OPS(40°C) N.O.:1700W 120VAC Tungsten, 6×10 <sup>3</sup> OPS(40°C) N.C.:20A 125VAC, G.P., 6×10 <sup>3</sup> OPS(40°C) N.C.: 1500W 277VAC Ballast, 6×10 <sup>3</sup> OPS(40°C) N.C.:1700W 120VAC Tungsten, 6×10 <sup>3</sup> OPS(40°C)
TüV	Non-Cd Contact (20A)	N.O.:16A 250VAC, 1×10 <sup>4</sup> OPS N.C.:10A 250VAC, 1×10 <sup>4</sup> OPS N.O.:16A 250VAC; N.C.:10A 250VAC, 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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## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT.

Unit: inch(mm)

	Outline Dimensions	Wiring Diagram (Bottom view)	PCB Layout (Bottom view)						
20A	<p>Standard Pins</p> <p>Vent-hole (Top View)</p>	<p>1 Form A</p> <p>1 Form B</p> <p>1 Form C</p>	<p>1 Form A</p> <p>1 Form B</p> <p>1 Form C</p>						
	<p>Standard Pins</p> <p>Vent-hole (Top View)</p>	<p>1 Form A</p> <p>1 Form B</p> <p>1 Form C</p>	<p>1 Form A</p> <p>1 Form B</p> <p>1 Form C</p>						
<p>Unless otherwise specified tolerances are:</p> <table border="1"> <tr> <td>≤1mm</td> <td>&gt;1mm and ≤5mm</td> <td>&gt;5mm</td> </tr> <tr> <td>±0.2mm</td> <td>±0.3mm</td> <td>±0.4mm</td> </tr> </table>				≤1mm	>1mm and ≤5mm	>5mm	±0.2mm	±0.3mm	±0.4mm
≤1mm	>1mm and ≤5mm	>5mm							
±0.2mm	±0.3mm	±0.4mm							
<p>* The tolerance without indicating for PCB layout is always ±0.1mm.</p>									

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

Unit: inch(mm)

### Outline Dimensions

### Wiring Diagram (Bottom view)

### PCB Layout (Bottom view)

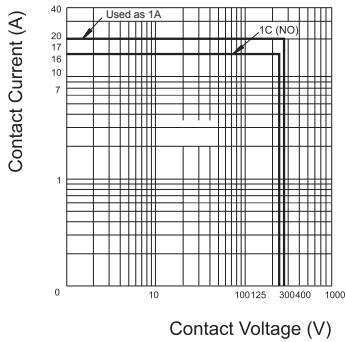
<p>20A</p>	<p>E Type Lead Pins</p> <p>Front View: .827(21) width, .122(3.1) height, .039x.016 (1x0.4) lead spacing, .02x.02 (0.5x0.5) lead width.</p> <p>Side View: .63(16) width, .811(20.6) height, .039x.016 (1x0.4) lead spacing.</p> <p>Top View: Vent-hole</p>	<p>1 Form A</p> <p>1 Form B</p> <p>1 Form C</p>	<p>1 Form A</p> <p>1 Form B</p> <p>1 Form C</p>
<p>25A</p>	<p>E Type Lead Pins</p> <p>Front View: .827(21) width, .122(3.1) height, .079x.016 (2x0.4) lead spacing, .02x.02 (0.5x0.5) lead width.</p> <p>Side View: .63(16) width, .811(20.6) height, .079x.016 (2x0.4) lead spacing.</p> <p>Top View: Vent-hole</p>	<p>1 Form A</p> <p>1 Form B</p> <p>1 Form C</p>	<p>1 Form A</p> <p>1 Form B</p> <p>1 Form C</p>
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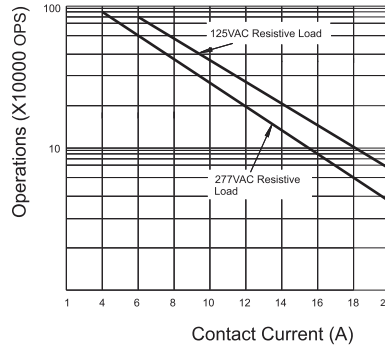
## CHARACTERISTIC CURVES

### 20A

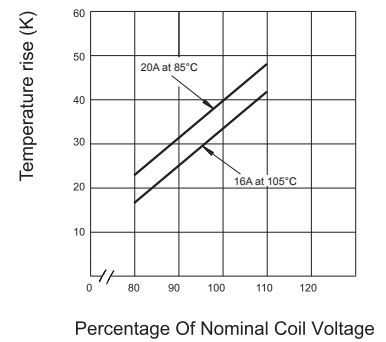
MAX. SWITCHING POWER



ENDURANCE CURVE (N.O.)

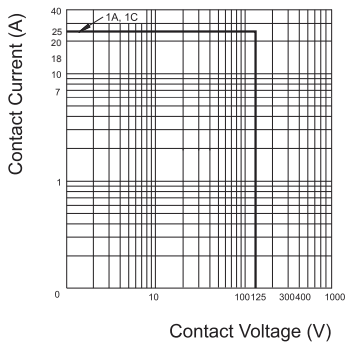


COIL TEMPERATURE RISE

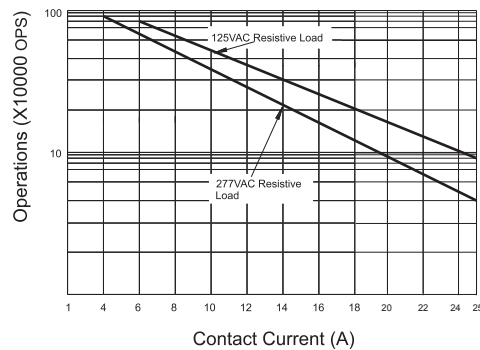


### 25A

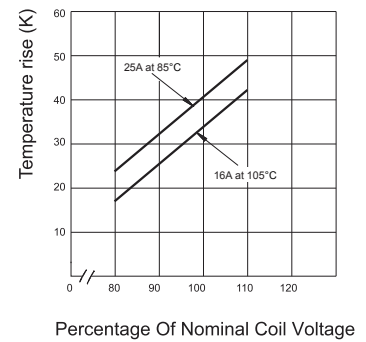
MAX. SWITCHING POWER



ENDURANCE CURVE (N.O.)



COIL TEMPERATURE RISE



## PACKAGING SPECIFICATION

BLISTER BOX	OUTER CARTON	OUTER CARTON SIZE
30PCS	1000PCS	L540mm*W200mm*H165mm

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## APPLICATION GUIDELINES

### Automatic Soldering

- \* Flow 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	Welding 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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