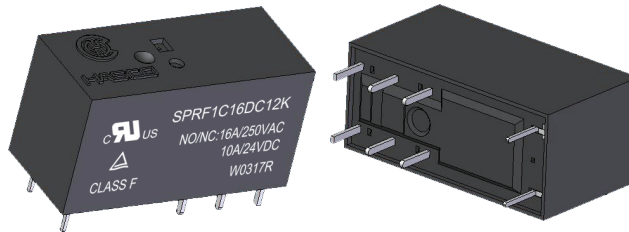




File No.:E75887



File No.:R 50215857



## FEATURES

- Small size for high density mounting
- Up to 5000VAC Dielectric strength

## CONTACT RATINGS

Contact Arrangement	1A, 1B, 1C	2A, 2B, 2C
Contact Resistance	≤100mΩ (1A 24VDC)	
Contact Material	AgSnO	
Contact Rating(Resistive)	20A 277VAC 16A 250VAC 16A 24VDC	8A 250VAC 8A 24VDC
Max. Switching Voltage	440VAC/300VDC	
Max. Switching Current	20A	8A
Max. Switching Power	5540VA	2000VA
Mechanical Life	1×10 <sup>7</sup> operations	
Electrical Life	See more details at "safety approval ratings"	

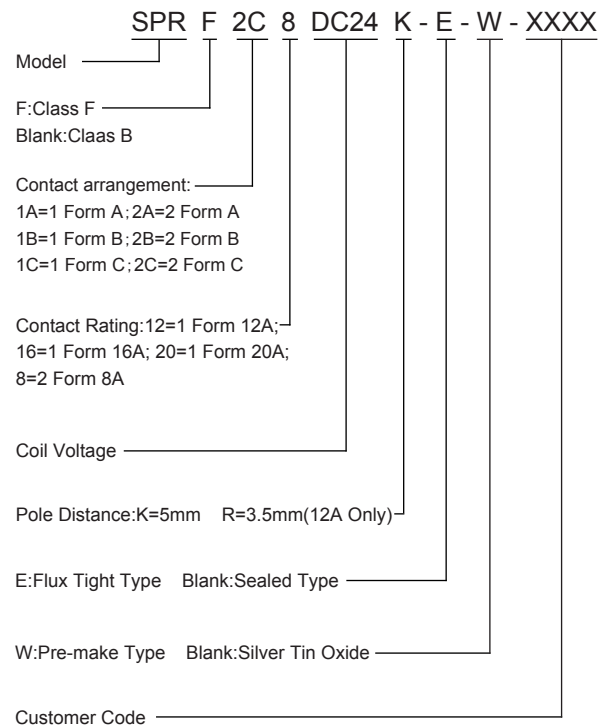
## CHARACTERISTICS

Insulation Resistance	1000MΩ(at 500VDC)	
Dielectric Strength	Between coil & contacts	5000VAC 1min
	Between open contacts	1000VAC 1min
	Between contacts sets	2500VAC 1min
Operate time (at nomi. volt.)	≤10ms	
Release time (at nomi. volt.)	≤5ms	
Humidity	35% to 85% RH	
Operation temperature	-40°C ~ +85°C/-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 150Hz 10g/5g	
Unit weight	Approx. 13.5g	
Construction	Flux Tight Type, Sealed 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.

This datasheet is for customers' reference. All the specifications are subject to change without notice.



RELAYS & ELECTRONICS INTL. CORP.

\* SINCE 1976 \*

# RELAYS

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

## COIL DATA at 25°C

Nominal Voltage VDC	Operate Voltage (Max.) VDC	Release Voltage (Min.) VDC	*Max. Allowable Voltage VDC	Coil Resistance $\Omega \pm 10\%$
5	3.5	0.5	6.5	62
6	4.2	0.6	7.8	90
9	6.3	0.9	11.7	203
12	8.4	1.2	15.6	360
24	16.8	2.4	31.2	1440
48	33.6	4.8	62.4	5760
60	42.0	6.0	78.0	7500
110	77.0	11.0	143.0	25200

Note:

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

## COIL

Coil Power	DC:400mW (60V、110V:480mW)
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## SAFETY APPROVAL RATINGS

UL&CUL	Form	Rating
	1 Form	N.O.:20A 277VAC, 6×10 <sup>3</sup> OPS N.O./N.C.:16A 24VDC, 6×10 <sup>3</sup> OPS N.C.:16A 250VAC, 6×10 <sup>3</sup> OPS N.O./N.C.:16A 277VAC(85°C), 6×10 <sup>3</sup> OPS N.O.:1HP 120VAC(50°C), 6×10 <sup>3</sup> OPS N.O./N.C.:2HP 240VAC, Horse Power, 6×10 <sup>3</sup> OPS N.O./N.C.:12A 250VAC, 6×10 <sup>3</sup> OPS N.O./N.C.:10A 24VDC, 6×10 <sup>3</sup> OPS
	-W	N.O.:5A 240VAC Ballast, 6×10 <sup>3</sup> OPS N.O.:8A 277VAC, Electronic Ballast, 2×10 <sup>4</sup> OPS(50°C)
	2 Form	N.O./N.C.:8A 24VDC, 6×10 <sup>3</sup> OPS N.O./N.C.:8A 250VAC, 6×10 <sup>3</sup> OPS N.O./N.C.:1/2 HP 120VAC, 6×10 <sup>3</sup> OPS

TüV	Form	Rating
	1 Form	N.O.:20A 277VAC, 85°C, 3×10 <sup>4</sup> OPS N.O.:17A 277VAC, 105°C, 8×10 <sup>4</sup> OPS N.O./N.C.:16A 277VAC, 85°C, 3×10 <sup>4</sup> OPS N.O.:17A 30VDC, 105°C, 1×10 <sup>5</sup> OPS N.O./N.C.:16A 24VDC, 85°C, 5×10 <sup>4</sup> OPS
	2 Form	N.O.:8A 277VAC/240VAC, 85°C, 6×10 <sup>4</sup> OPS N.C.:8A 277VAC/240VAC, 85°C, 1×10 <sup>5</sup> OPS N.O.:8A 24VDC, 85°C, 1×10 <sup>5</sup> OPS N.O./N.C.:8A 277VAC/240VAC, 85°C, 8×10 <sup>4</sup> OPS N.O./N.C.:8A 24VDC, 85°C, 5×10 <sup>4</sup> OPS N.O./N.C.:10A 250VAC, 105°C, 2×10 <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

\* SINCE 1976 \*

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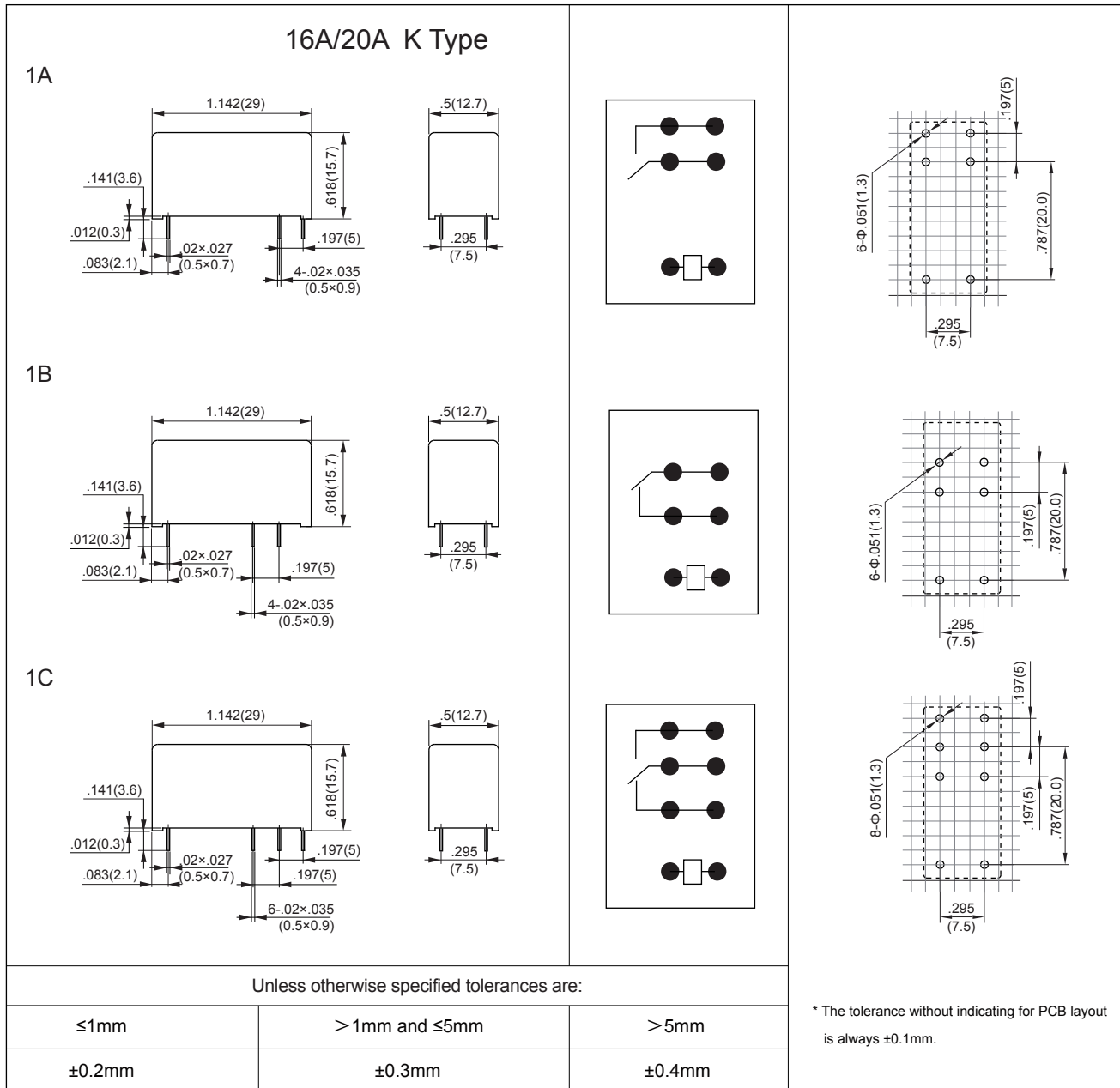
## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT.

Unit: inch (mm)

### Outline Dimensions

### Wiring Diagram (Bottom view)

### PCB Layout (Bottom view)



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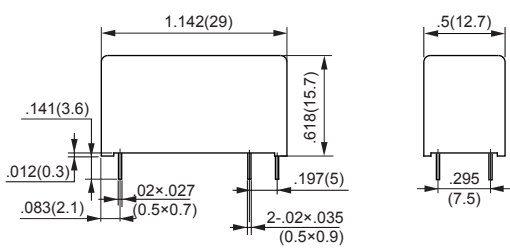
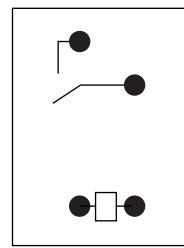
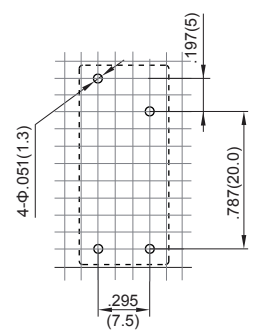
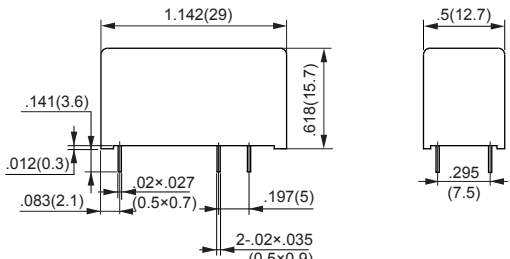
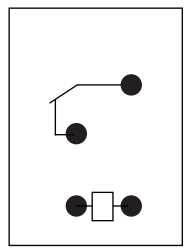
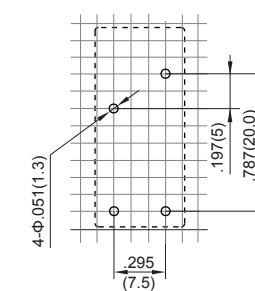
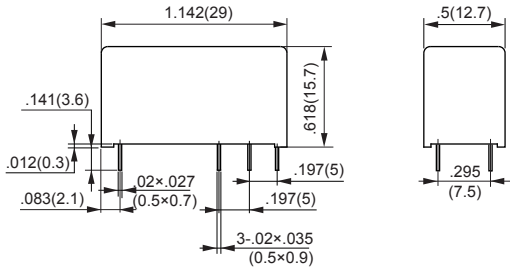
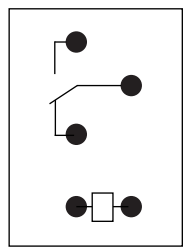
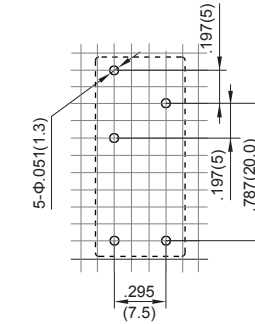
## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT.

Unit: inch (mm)

### Outline Dimensions

### Wiring Diagram (Bottom view)

### PCB Layout (Bottom view)

12A K Type		
<p>1A</p> 		
<p>1B</p> 		
<p>1C</p> 		
Unless otherwise specified tolerances are:		
≤1mm	> 1mm and ≤5mm	> 5mm
±0.2mm	±0.3mm	±0.4mm

\* The tolerance without indicating for PCB layout is always ±0.1mm.

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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)

12A R Type			
<p>1A</p>			
<p>1B</p>			
<p>1C</p>			
Unless otherwise specified tolerances are:			
≤1mm	> 1mm and ≤5mm	> 5mm	
±0.2mm	±0.3mm	±0.4mm	
			* The tolerance without indicating for PCB layout is always ±0.1mm.

This datasheet is for customers' reference. All the specifications are subject to change without notice.

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

Unit: inch (mm)

### Outline Dimensions

### Wiring Diagram (Bottom view)

### PCB Layout (Bottom view)

8A K Type			
2A	<p>Dimensions: 1.142(29) width, .5(12.7) height, .141(3.6) top offset, .012(0.3) bottom offset, .083(2.1) mounting hole offset, .02x.027 (0.5x0.7) mounting holes, .197(5) terminal offset, 4-.02x.035 (0.5x0.9) terminals, .295(7.5) base width.</p>	<p>Wiring diagram showing a 4-pole relay with two common terminals and two normally open (NO) terminals.</p>	<p>PCB layout showing 6 mounting holes (6-φ.051(1.3)) and terminal positions. Dimensions: .197(5) terminal offset, .787(20.0) terminal spacing, .295(7.5) base width.</p>
2B	<p>Dimensions: 1.142(29) width, .5(12.7) height, .141(3.6) top offset, .012(0.3) bottom offset, .083(2.1) mounting hole offset, .02x.027 (0.5x0.7) mounting holes, .197(5) terminal offset, 4-.02x.035 (0.5x0.9) terminals, .295(7.5) base width.</p>	<p>Wiring diagram showing a 4-pole relay with two common terminals and two normally closed (NC) terminals.</p>	<p>PCB layout showing 6 mounting holes (6-φ.051(1.3)) and terminal positions. Dimensions: .197(5) terminal offset, .787(20.0) terminal spacing, .295(7.5) base width.</p>
2C	<p>Dimensions: 1.142(29) width, .5(12.7) height, .141(3.6) top offset, .012(0.3) bottom offset, .083(2.1) mounting hole offset, .02x.027 (0.5x0.7) mounting holes, .197(5) terminal offset, 6-.02x.035 (0.5x0.9) terminals, .295(7.5) base width.</p>	<p>Wiring diagram showing a 6-pole relay with two common terminals and four normally open (NO) terminals.</p>	<p>PCB layout showing 8 mounting holes (8-φ.051(1.3)) and terminal positions. Dimensions: .197(5) terminal offset, .787(20.0) terminal spacing, .295(7.5) base width.</p>
Unless otherwise specified tolerances are:			
≤1mm	> 1mm and ≤5mm	> 5mm	* The tolerance without indicating for PCB layout is always ±0.1mm.
±0.2mm	±0.3mm	±0.4mm	

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## PACKAGING SPECIFICATION

TUBE	INNER CARTON	OUTER CARTON	OUTER CARTON SIZE
40PCS	1000PCS	2000PCS	L580mm*W400mm*H175mm

## 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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