

Relay Catalog

NF Forward Relay Catalog

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Relay General Application Guidelines

98

Features

- Small sizes 15.5 x 11 x 11.5mm
- High sensitivity 200mW
- Available with the two different terminal layouts
- UL/CUL approved
- Special design for alarm, security system, office equipment, medical equipment
- Comply with RoHS-Directive 2011/65/EU



Type List

Terminal style	Contact form	Terminal Layout	Designation (provided with)	
			Flux tight type	Sealed type washable
PCB Terminal	1C (SPDT)	Standard	NF42 001 A ..	NF42 001 A .. W
		Different	NF42A 001 A ..	NF42A 001 A .. W

Ordering Information

NF42 001 A 24 W

1 2 3 4 5

- | | |
|--|--|
| 1. NF42 -- Standard type | 4. -- Coil voltage: 5=5V; 6=6V; 9=9V; 12=12V; 18=18V; 24=24V |
| NF42A -- with different terminal Layout | |
| 2. 001 -- Single pole double throw - 1CO | 5. Blank -- Flux tight |
| | W -- Sealed washable |
| 3. A -- Ag + Au coated | |

Contact Data

Type of contact	Single contact
Configuration	1CO
Rated load	3A/30VDC; 3A/125VAC
Maximum switching current	3A
Maximum switching voltage	60VDC / 220VAC
Maximum switching capacity	90W / 375VA
Contact resistance	50mΩ
Contact material	Ag Au coated

Coil rating (DC @+23°C)

Rated voltage (V)	Rated current (mA) ±10%	Coil resistance (Ω) ±10%	Max. continuous voltage (V)	Pick up voltage	Drop out voltage	Power consumption at rated voltage (mW) (mW)
5	40	125	100 % of rated voltage	75 % of rated voltage	10 % of rated voltage	200
6	33.3	180				
9	22.2	405				
12	16.6	720				
18	11.1	1620				
24	8.3	2880				

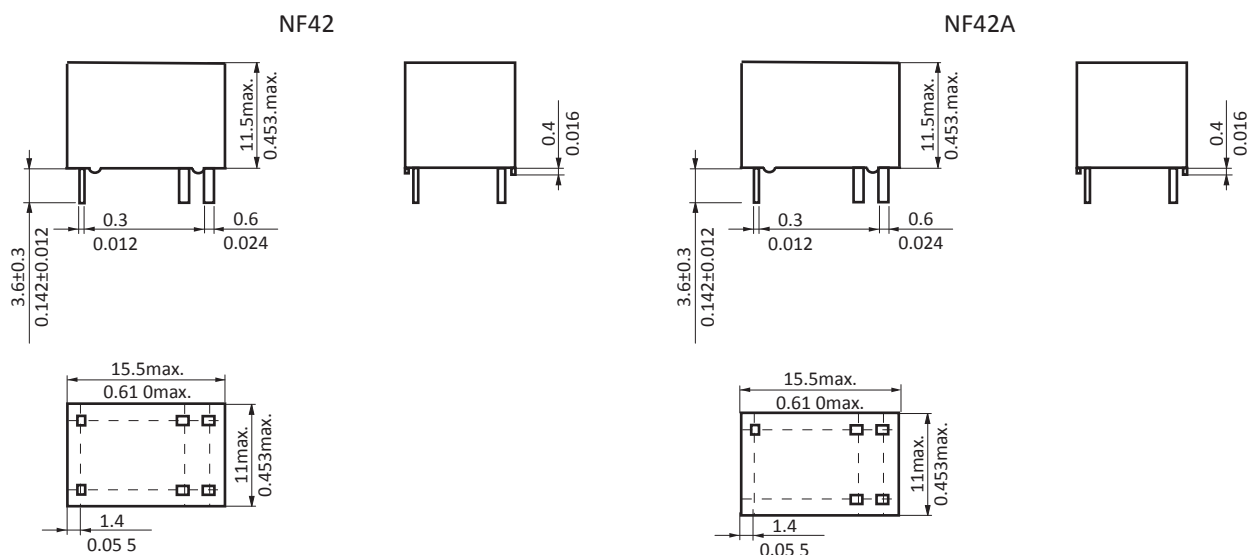
Specification

Mechanical life	10x10 ⁶ cycles	
Electrical life at rated load	1x10 ⁵ cycles	
Operate Time	5ms Max.	
Release Time	5ms Max.	
Dielectric strength	Between coil and contacts	500V, 50/60Hz, 1min
	Between open contacts	500V, 50/60Hz, 1min
Vibration resistance (10..55Hz) double amplitude	Operation extremes	1.5mm
Shock resistance	Operation extremes - 11ms	10g
Operating ambient temperature	-25~+70°C	
Approvals	UL/CUL	
Weight	3.5g	

Safety Approval

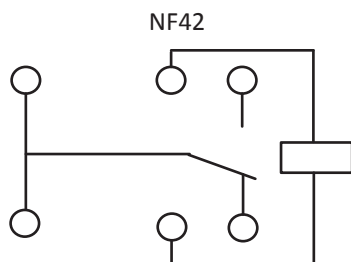
Certified	UL / CUL
Ratings	3A/125VAC; 3A/30VDC

Outline Dimensions

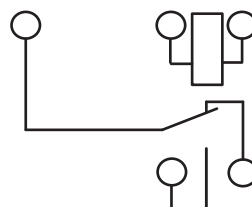


Wiring Diagram

BOTTOM VIEW

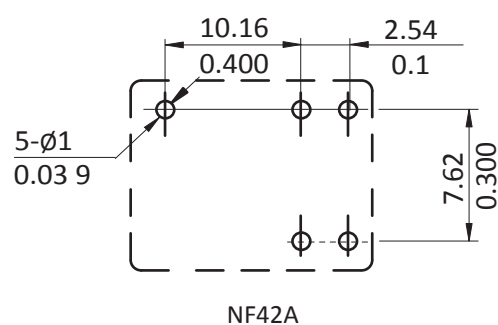
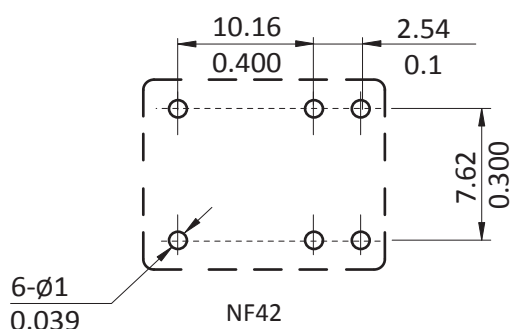


NF42A



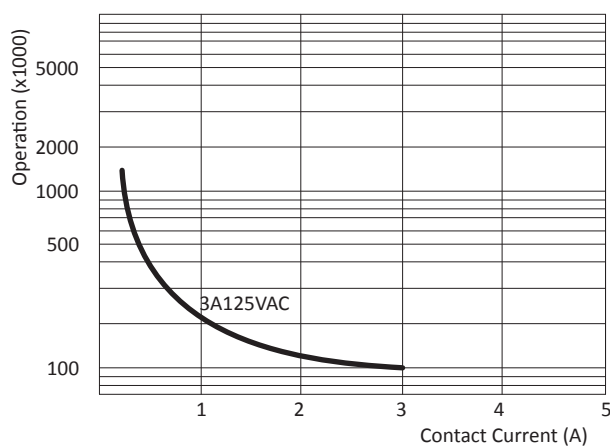
PC Board Layout

BOTTOM VIEW

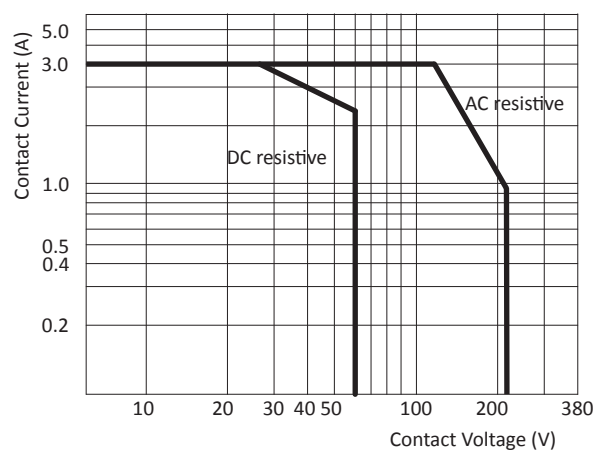


Engineering Data

Life expectancy



Contact switching capacity



Disclaimer

All technical performance data apply to the relay as such, specific conditions of the individual application are not considered. Please always check the suitability of the relay for your intended purpose. We do not assume any responsibility or liability for not complying herewith. We recommend to complete our questionnaire and to request our technical service. Any responsibility for the application of the product remains with the customer only. All specifications are subject to change without notification. All rights of NF Forward GmbH are reserved.

Features

- Small sizes 12.5 x 7.5 x 10mm
- High sensitivity 150mW
- Fully sealed
- UL/CUL approved
- Special design for alarm, security system, office equipment, medical equipment
- Comply with RoHS-Directive 2011/65/EU



Type List

Terminal style	Contact form	Designation (provided with)
		Sealed type washable
PCB Terminal	1C (SPDT)	ST1 001 C .. W

Ordering Information

ST1 001 C 24 W

1 2 3 4 5

- | | | | |
|--------|----------------------------------|------|--|
| 1. ST1 | -- Basic series Designation | 4. | -- Coil voltage: 05=5V; 06=6V; 09=9V; 12=12V; 24=24V |
| 2. 001 | -- Single pole double throw | 5. W | -- Sealed washable |
| 3. C | -- Contact material Ag + Au clad | | |

Contact Data

Type of contact	Single contact
Configuration	1CO
Rated load	1A/24VDC; 0.5A/125VAC
Maximum switching current	1A
Maximum switching voltage	60VDC / 125VAC
Maximum switching capacity	30W / 62.5VA
Contact resistance	100mΩ
Contact material	Ag + Au clad

Coil rating (DC @+23°C)

Rated voltage (V)	Rated current (mA) ±10%	Coil resistance (Ω) ±10%	Max. continuous voltage (V)	Pick up voltage	Drop out voltage	Power consumption at rated voltage (mW) (mW)
5	29.9	167	200 % of rated voltage	80 % of rated voltage	10 % of rated voltage	150
6	25	240				
9	16.6	540				
12	12.5	960				
24	6.25	3840				

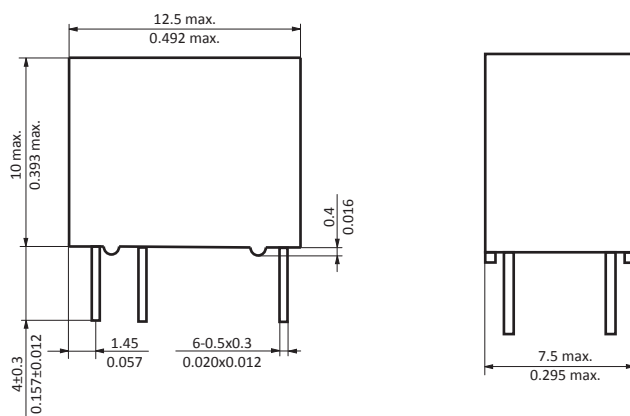
Specification

Mechanical life	5x10 ⁶ cycles	
Electrical life at rated load	1x10 ⁵ cycles	
Operate Time	5ms Max.	
Release Time	5ms Max.	
Dielectric strength	Between coil and contacts	1000V, 50/60Hz, 1min
	Between open contacts	400V, 50/60Hz, 1min
Vibration resistance (10..55Hz) double amplitude	Operation extremes	3.3mm
	Shock resistance	Operation extremes - 11ms
Operating ambient temperature	-30..+70°C	
Approvals	UL/CUL	
Weight	2.2g	

Safety Approval

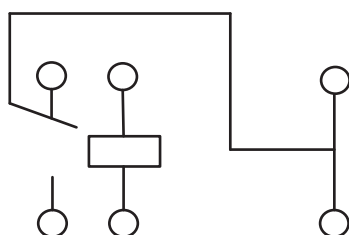
Certified	UL / CUL
Ratings	0.5A/125VAC; 1A/30VDC; 0.3A/60VDC

Outline Dimensions



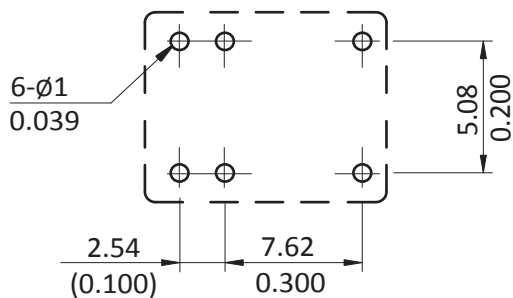
Wiring Diagram

BOTTOM VIEW



PC Board Layout

BOTTOM VIEW

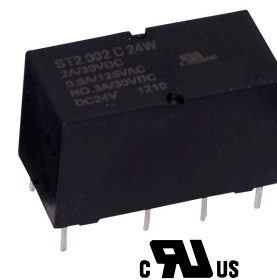


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Features

- DIL (Dual In Line) terminals
- Conform to FCC part 68 1.5kV surge and dielectric 1000VAC
- Fully sealed
- UL/CUL approved
- Special design for alarm, security system, office equipment, medical equipment
- Comply with RoHS-Directive 2011/65/EU



Type List

Terminal style	Contact form	Designation (provided with)
		Sealed type washable
PCB Terminal	2C (DPDT)	ST2 002 C .. W

Ordering Information

ST2 002 C 24 W
 1 2 3 4 5

- | | | | |
|--------|------------------------------------|------|---|
| 1. ST2 | -- Basic series Designation | 4. | -- Coil voltage : 05=5V; 06=6V; 09=9V; 12=12V; 24=24V; 48=48V |
| 2. 002 | -- Double pole double throw | 5. W | -- Sealed washable |
| 3. C | -- Contact material AgNi + Au clad | | |

Contact Data

Type of contact	Bifurcated contact
Configuration	2 CO
Rated load	2A/30VDC; 0.6A/125VAC
Maximum switching current	2A
Maximum switching voltage	220VDC / 250VAC
Maximum switching capacity	60W / 125VA
Contact resistance	100mΩ
Contact material	AgNi + Au clad

Coil rating (DC @+23°C)

Rated voltage (V)	Rated current (mA) ±10%	Coil resistance (Ω) ±10%	Max. continuous voltage (V)	Pick up voltage	Drop out voltage	Power consumption at rated voltage (mW) (mW)
5	29.9	167	12.5	70 % of rated voltage	5 % of rated voltage	150
6	25	240	15			
9	16.6	540	22.5			
12	12.5	960	30			
18	11.1	1620	40			
24	8.3	2880	52.9			200
48	6.25	7680	84.9			300

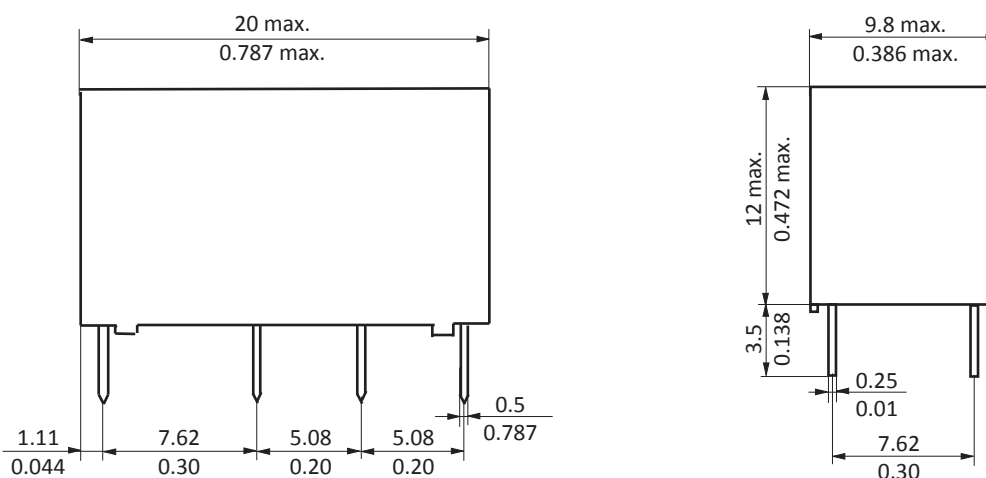
Specification

Mechanical life	100x10 ⁶ cycles	
Electrical life at rated load	1x10 ⁵ cycles	
Operate Time	5ms Max.	
Release Time	3ms Max.	
Dielectric strength	Between coil and contacts	1000V, 50/60Hz, 1min
	Between open contacts	1000V, 50/60Hz, 1min
	Between contact circuits	1000V, 50/60Hz, 1min
Surge withstand voltage (wave 10/160μs, conform to FCC68)	Between coil and contacts	1500V
	Between open contacts	1500V
	Between contact circuits	1500V
Vibration resistance (10..55 Hz) double amplitude	Operation extremes	1.5mm
	Damage limits	5mm
Shock resistance	Operation extremes - 11ms	10g
	Damage limits - 6ms	100g
Ambient temperature	-40...+90°C (+80°C for 48VDC coil)	
Approvals	UL/CUL	
Weight	4.5g	

Safety Approval

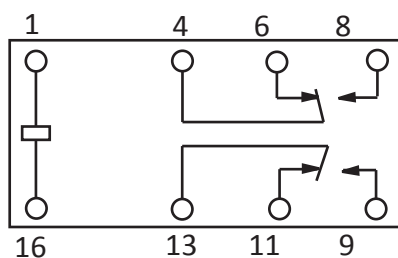
Certified	UL / CUL
Ratings	2A/30VDC ; 0.6A/125VAC

Outline Dimensions



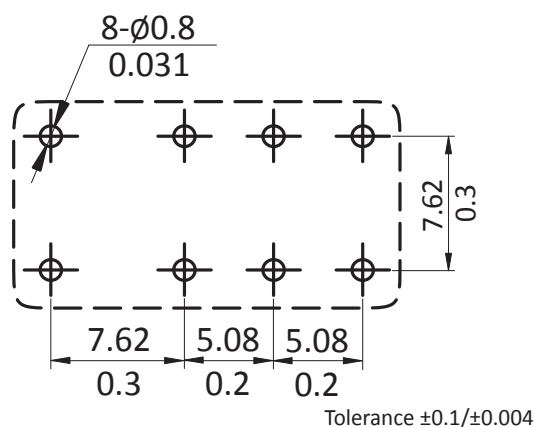
Wiring Diagram

Bottom View



PC Board Layout

Bottom View



Mounting (Bottom View)

Disclaimer

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Features

- DIL (Dual In Line) terminals
- Conform to FCC part 68 1.5kV surge and dielectric 1000VAC
- Fully sealed
- UL/CUL approved
- Special design for alarm, security system, office equipment, medical equipment
- Comply with RoHS-Directive 2011/65/EU



Type List

Terminal style	Contact form	Designation (provided with)
		Sealed type washable
THT	2C (DPDT)	ST3 002 H .. W
SMT	2C (DPDT)	ST3 002 H .. SM

Ordering Information

ST3 002 H 24 W

1 2 3 4 5

- | | | | |
|--------|------------------------------------|-------|--|
| 1. ST3 | -- Basic series Designation | 4. 24 | -- Coil voltage: 5 = 5VDC; 6 = 6VDC;
9 = 9VDC; 12 = 12VDC;
24 = 24 VDC |
| 2. 002 | -- Double pole double throw | | |
| 3. H | -- Contact material AgPd + Au clad | 5. W | -- Sealed washable, THT version |
| | | SM | -- SMT version |

Contact Data

Type of contact	Bifurcated contact
Configuration	2 CO
Rated load	2A/30VDC; 0.5A/125VAC
Maximum switching current	2A
Maximum switching voltage	220VDC / 250VAC
Maximum switching capacity	60W / 62.5VA
Minimum permissible load	0.01mA/10mV
Contact resistance	50mΩ
Contact material	AgPd + Au clad

Coil rating (DC @+23°C)

Rated voltage (V)	Rated current (mA) ±10%	Coil resistance (Ω) ±10%	Max. continuous voltage (V)	Pick up voltage	Drop out voltage	Power consumption at rated voltage (mW)
5	28	178	12.5	75 % of rated voltage	10 % of rated voltage	140
6	23.3	257	15			
9	15.5	579	22.5			
12	11.7	1028	30			
24	8.3	2880	48			200

Specification

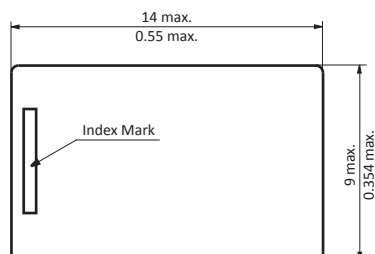
Mechanical life	100x10 ⁶ cycles	
Electrical life	1x10 ⁵ cycles @ 0.5A/125VAC , 2x10 cycles @ 1A/30VDC	
Operate Time	2ms Max.	
Release Time	1ms Max.	
Dielectric strength	Between coil and contacts	1000V, 50/60Hz, 1min
	Between open contacts	1000V, 50/60Hz, 1min
	Between contact circuits	1000V, 50/60Hz, 1min
Surge withstand voltage (wave 10/160μs, conform to FCC68)	Between coil and contacts	1500V
	Between open contacts	1500V
	Between contact circuits	2500V
Vibration resistance (10..55 Hz) double amplitude	Operation extremes	3mm
	Damage limits	5mm
Shock resistance	Operation extremes - 11ms	50g
	Damage limits - 6ms	100g
Ambient temperature	-40...+70°C	
Approvals	UL/CUL	
Weight	1.5g	

Safety Approval

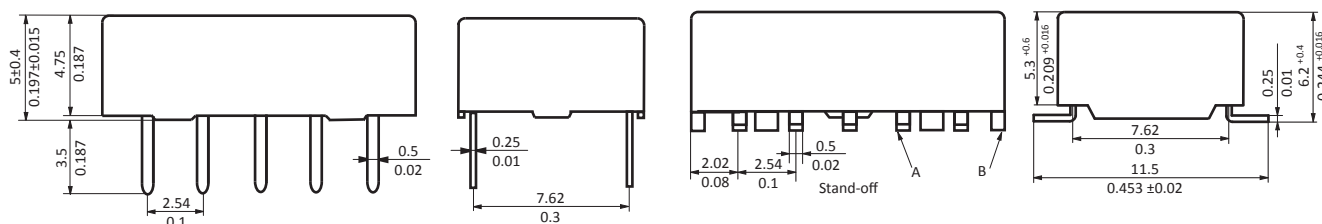
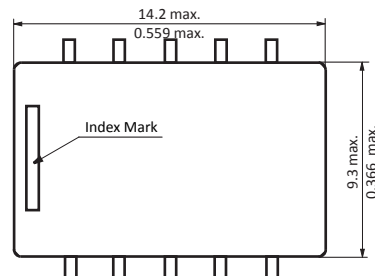
Certified	UL / CUL
Ratings	2A/30VDC ; 0.5A/125VAC

Outline Dimensions

THT Version

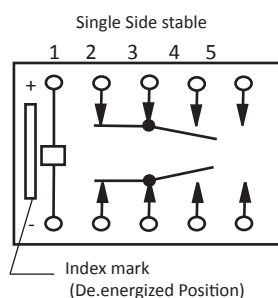


SMT Version



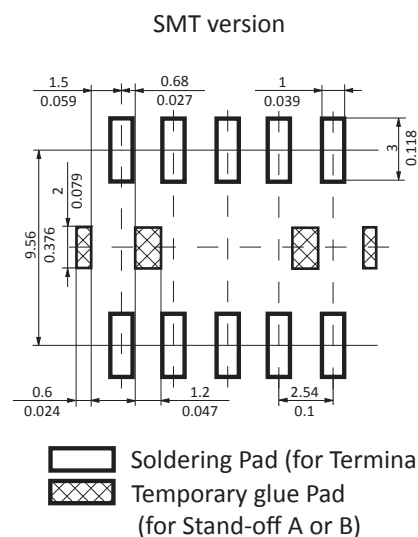
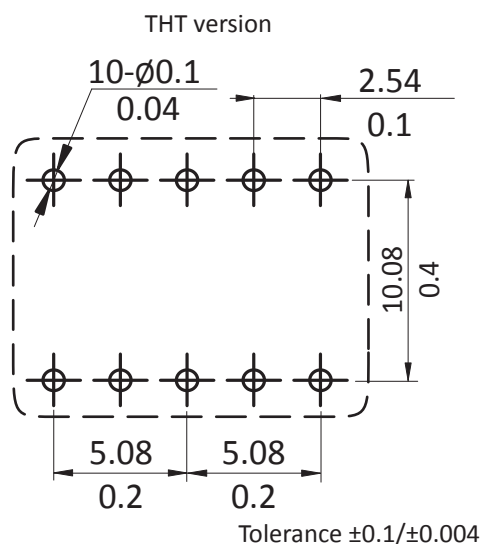
Wiring Diagram

Bottom View



PC Board Layout

Bottom View



Tolerance $\pm 0.1/\pm 0.004$

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