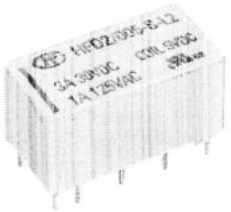


c UL us
File No.:E133481

Features

- High sensitive: 150mW
- Matching standard16 pin IC socket
- High switching capacity: 125VA / 90W
- Bifurcated contacts
- Epoxy sealed for automatic wave soldering and cleaning
- Single side stable and latching type available
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (20.2 x 10.2 x 10.6) mm

CONTACT DATA

Contact arrangement	2C
Contact resistance	50mΩ max. (at 0.1A 6VDC)
Contact material	see ordering info.
Contact rating (Res. load)	1A 125VAC, 2A 30VDC 3A 30VDC
Max. switching voltage	250VAC / 220VDC
Max. switching current	3A
Max. switching power	125VA / 90W
Min. applicable load [1]	10mV 10μA
Mechanical endurance	1 x 10^8OPS
Electrical endurance	5 x 10^5OPS (at 1A 30VDC) 1 x 10^5OPS (at 2A 30VDC) 5 x 10^4OPS (at 3A 30VDC)

Notes: 1) Min. applicable load is reference value. Please perform the confirmation test with the actual load before production since reference value may change according to switching frequencies, environmental conditions and expected contact resistance and reliability.

COIL

		Sensitive	Standard
Coil power	Single side stable	Approx. 150mW	Approx. 200mW
	1 coil latching	Approx. 75mW	Approx. 100mW
	2 coils latching	Approx. 150mW	Approx. 200mW
Temperature rise		65K max.	

SAFETY APPROVAL RATINGS

UL/CUL	0.5A 60VDC 2A 25VDC 2A 30VDC 1A 100VAC (Industrial control, business equipment) 1A 120VAC 2A 125VAC(Telephone equipment) 3A 30VDC

Notes: Only some typical ratings are listed above. If more details are required, please contact us.

CHARACTERISTICS

Insulation resistance		1000MΩ (at 500VDC)
Dielectric strength	Between coil & contacts	1 coil: 1500VAC 1min 2 coils: 1000VAC 1min
	Between open contacts	1000VAC 1min
Operate time (at nomi. volt.)		4.5ms max.
Release time (at nomi. volt.)		3.5ms max.
Set time (latching)		4.5ms max.
Reset time (latching)		4.5ms max.
Bounce time		2ms max.
Ambient temperature		-40 °C to 85 °C
Humidity		5% to 85% RH
Vibration resistance		10Hz to 55Hz 1.5mm DA
Shock resistance	Functional	490m/s²
	Destructive	980m/s²
Capacitance	Contact to contact	2.0pF
	Contact set to contact	1.5pF
	Contact to coil	5.0pF
Termination		PCB (DIP)
Unit weight		Approx. 4.5g
Construction		Plastic sealed

Notes: 1) The data shown above are initial values.
2) UL insulation system: Class A

COIL DATA at 23°C

Single side stable Standard type

Coil Code	Nominal Voltage VDC	Pick-up Voltage VDC max.	Drop-out Voltage VDC min.	Coil Resistance x(1±10%) Ω	Max. Allowable Voltage VDC
003-M	3	2.30	0.3	45	6
005-M	5	3.75	0.5	125	10
006-M	6	4.50	0.6	180	12
009-M	9	6.75	0.9	405	18
012-M	12	9.00	1.2	720	24
015-M	15	11.25	1.5	1125	30
024-M	24	18.0	2.4	2880	48
048-M	48	36.0	4.8	11520	96

ORDERING INFORMATION

	HFD2 /	012	-S	-L2	-D	(XXX)
Type						
Coil voltage	3, 5, 6, 9, 12, 15, 24, 48VDC 1)					
Coil power	M: Standard	S: Sensitive				
Sort	L1: 1 coil latching	L2: 2 coils latching	Nil: Single side stable			
Contact material	D: Ag-AuAg8 / Ag-AuAg8	Nil: AgPd60 / Ag-AuAg8				
Customer special code						

Notes: 1) 48VDC coil voltage is only for single side stable & standard type.

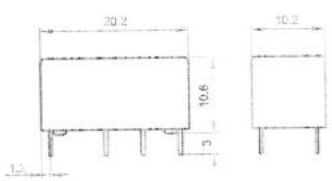
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

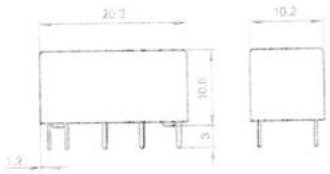
Unit: mm

Single side stable or 1 coil latching

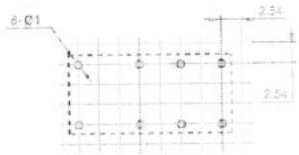
2 coils latching

Outline Dimensions

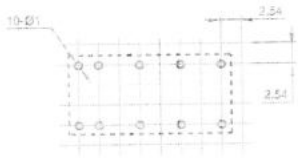




PCB Layout
(Bottom view)

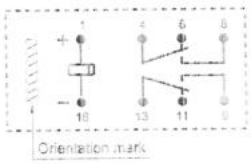


Matching 16 pin IC socket



Matching 16 pin IC socket

Wiring Diagram
(Bottom view)



For latching, diagram shows the "reset" position
Energize terminals 1 and 16 to "set"
Reverse energize terminals 1 and 16 to "reset"

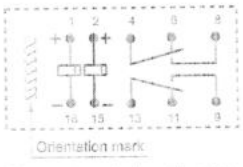


Diagram shows the "reset" position
Energize terminals 1 and 16 to "set"
Energize terminals 2 and 15 to "reset"

Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.
2) The tolerance without indicating for PCB layout is always ±0.1mm.
3) The width of the gridding is 2.54mm.