JRC-27F SUBMINIATURE DIP RELAY

File No.:E133481

File No.:CQC02001001938

Features

- 2 Form C contact
- High switching capacity 60W, 125VA
- Fit standard 16 pin IC socket
- Epoxy sealed for automaitc-wave soldering and cleaning

CONTACT DATA

Contact Arrangement	2C
Initial Contact Resistance Max.	50mΩ
Contact Material	Silver alloy, Au Clad
Contact Rating (Res. Load)	2A,30VDC 1A ,125VAC
Max. switching power	125VA/60W
Max. switching voltage	120VDC/240VAC
Max. switching current	2A
Min. Applicable load	10mV 10μA
Mechanical life	$1x10^8$ OPS
Electrical life	$1x10^5$ OPS

CHARACTERISTICS

Initial Insulation Resistance		1000MΩ 500VDC
Dielectric Strength	Between coil and Contacts	1500Vrms 1min
	Between open contacts	1000Vrms 1min
Operate time (at nomi. Volt.)		6ms max.
Release time (at nomi. Volt.)		4ms max.
Ambient temperature		-40˚C to +85˚C
Humidity		40 to 85%R.H.
Vibration Resistance		DA: 1.5mm 10 to 55Hz
Shock Resistance	Functional	196m/s²(20g)
	Destructive	980m/s²(100g)
Max. Solder Temp. Time		270˚C 5s
Max. Solvent Temp.Time		80˚C 30s
Termination		DIP & PCB
Unit weight		Approx. 5g
Construction		Sealed

COIL

Coil power	Sensitive:200mW	Standard:360mW
Temperature Rise		max. 65˚C
Coil Voltage		See coil data table

COIL DATA

Standard (360mW) 20˚C

Order Number	Coil Voltage VDC	Pick-up Voltage VDC (Max.)	Drop-out Voltage VDC (Min.)	Coil Resistance Ω ±10%	Allow Voltage VDC (Max.)
003-M	3	2.25	0.3	30	4.5
005-M	5	3.75	0.5	90	8.0
006-M	6	4.50	0.6	130	10.0
009-M	9	6.80	0.9	280	14.5
012-M	12	9.00	1.2	450	18.5
015-M	15	11.3	1.5	625	22.0
024-M	24	18.0	2.4	1600	35.5
048-M	48	36.0	4.8	4000	56.0

Sensitive (200mW) 20˚C

Order Number	Coil Voltage VDC	Pick-up Voltage VDC (Max.)	Drop-out Voltage VDC (Min.)	Coil Resistance Ω ±10%	Allow Voltage VDC (Max.)
003-S	3	2.25	0.3	45	6
005-S	5	3.75	0.5	125	10
006-S	6	4.50	0.6	180	12
009-S	9	6.80	0.9	405	18
012-S	12	9.00	1.2	720	24
015-S	15	11.3	1.5	1125	30
024-S	24	18.0	2.4	2880	48

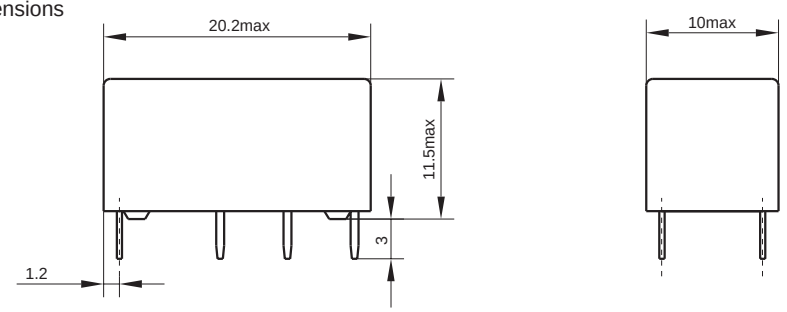
Note: When user's requirements cant't be found in the above table,special order allowed.

ORDERING INFORMATION

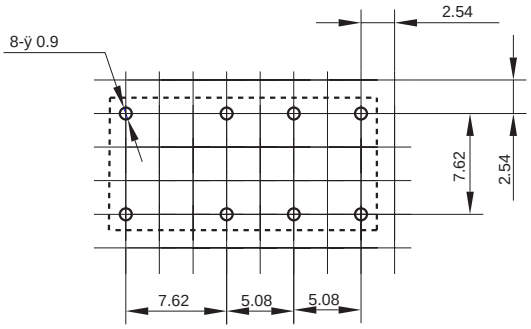
	JRC-27F /	012	S
Type			
Coil voltage	3, 5, 6, 9, 12, 15, 24, 48VDC(Standard only)		
Coil Power	S: Sensitive M: Standard		

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

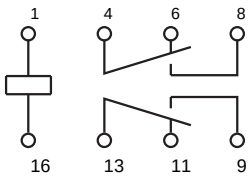
Outline Dimensions



PCB Layout



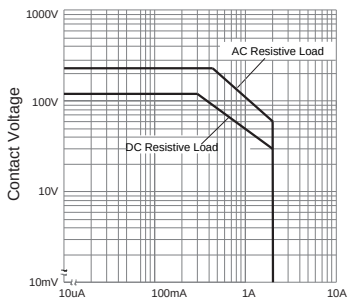
Wiring Diagram



(Bottom View)

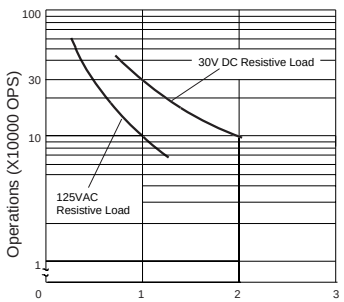
CHARACTERISTICS CURVE

MAXIMUM SWITCHING POWER



Contact Current

LIFE CURVE



Contact Current (A)

JRC-27F

ISO9001 certified	**SUBMINIATURE DIP RELAYS** 2 Form C PCB Layout	**J R C - 2 7 F**

- ***2Form C contact***
- ***High switching capacity 60W，125VA***
- ***Fit standard 16 pin IC socket***
- ***Epoxy sealed for automatic-wave soldering and cleaning***

■CANTACTS

Contact Form	2Form C
Initial Contact Resistance	50mΩ
Contact Material	Silver alloy, Gold clad
Contact Rating (Resistance)	2A，30VDC 1A，125VAC
Max. Switching Power	60W，125VA
Max. Switching Voltage	120VDC，240VAC
Max. Switching Current	2A
Min. Applicable Load	10mV 10μA
Mechanical Life	1×10^8
Electrical Life	3×10^5 (at 1A,30VDC) 1×10^5 (at 2A,30VDC)

■ COIL DATA

Coil Nominal Power	H--High sensitive	150mW
	S--Sensitive	200mW
	M--Standard	360mW
Temperature Rise	Max 65°C	
Coil Voltage	See Table	

■ SPECIFICATION

Insulation Resistance	1000MΩ 500VDC
Dielectric Strength **Contact to Coil** **Contact to Contact**	 1500Vrms, 1 min 1000Vrms, 1 min 750 Vrms, 1 min (H type)
Operate Time	6ms
Release Time	4ms
Bounce Time	3.5ms
Ambient Temperature	-40 to +85 °C
humidity	40 to 85% R.H.
Vibration Resistance	DA:1.5mm, 10 to 55Hz
Shock Resistance	196 m/s^2 (20g) functional 980 m/s^2 (100g) destructive
Max. Solder Temp. Time	270°C 5 s
Max. Solvent Temp. Time	80°C 30 s
Terminals	DIP for PCB
Construction	Sealed
Dimensions (mm)	20.2×10×11.5
Weight	Approx. 5g

■ COIL TABLE

Standard (360mW) 20℃

Order Number	Coil Voltage VDC	Pick-up Voltage VDC (max)	Drop-out Voltage VDC (min)	Coil Resistance Ω 10%	Max. Allow Voltage VDC
003-M	3	2.25	0.3	30	4.5
005-M	5	3.75	0.5	90	8.0
006-M	6	4.50	0.6	130	10.0
009-M	9	6.80	0.9	280	14.5
012-M	12	9.00	1.2	450	18.5
015-M	15	11.30	1.5	625	22.0
024-M	24	18.0	2.4	1600	35.5
048-M	48	36.0	4.8	4000	56.0

Sensitive (200mW) 20℃

Order Number	Coil Voltage VDC	Pick-up Voltage VDC (max)	Drop-out Voltage VDC (min)	Coil Resistance Ω 10%	Max. Allow Voltage VDC
003-S	3	2.25	0.3	45	6
005-S	5	3.75	0.5	125	10
006-S	6	4.50	0.6	180	12
009-S	9	6.80	0.9	405	18
012-S	12	9.00	1.2	720	24
015-S	15	11.3	1.5	1125	30
024-S	24	18.0	2.4	2880	48

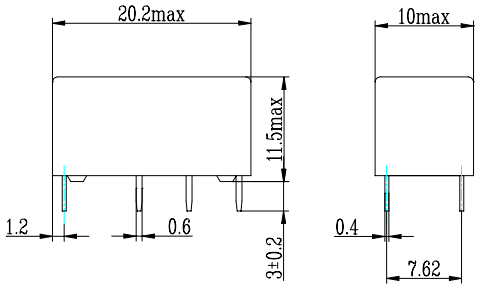
High sensitive (150mW) 20℃

Order Number	Coil Voltage VDC	Pick-up Voltage VDC (max)	Drop-out Voltage VDC (min)	Coil Resistance Ω 10%	Max. Allow Voltage VDC
003-H	3	2.4	0.3	60	7.0
005-H	5	4.0	0.5	167	11.5
006-H	6	4.8	0.6	240	13.8
009-H	9	7.2	0.9	540	20.8
012-H	12	9.6	1.2	960	27.7
015-H	15	12.0	1.5	1500	34.6

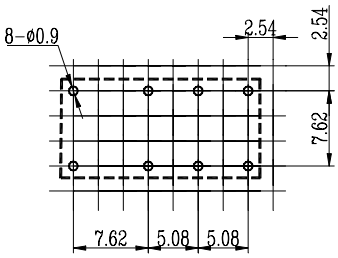
Note：When user's requirements can't be found in the above table, counsel with Hongfa co., ltd.

■ OUTLINE DEMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

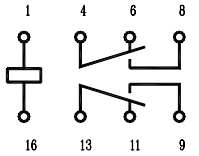
Outline Dimensions



PC Board Layout



Wiring Diagram (bottom view)



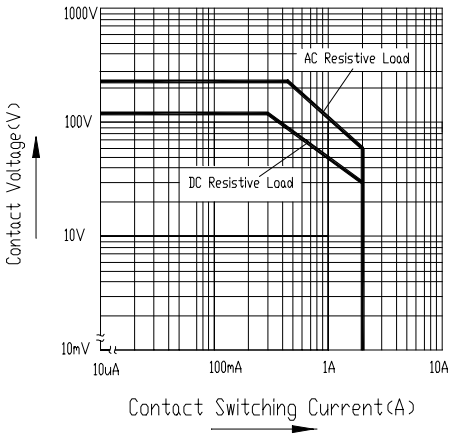
■ ORDER INFORMATION

JRC－27F / 012 － S

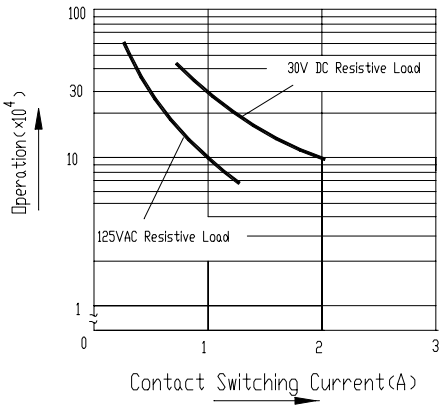
Model	Coil Voltage	Sensitivity
	3,5,6,9,12,	H: High Sensitive
	15,24,48VDC	S: Sensitive
		M: Standard

■ CHARACTERISTICS CURVER

Max. Switching power



Life Curve



JRC-23F SUBMINIATURE SIGNAL RELAY

c UL us
File No.:E133481

File No.:CH0032703-2002A

Features

- High sensitivity :150 mW
- 1 pole configurations
- Sealed type available

CONTACT DATA

Contact Arrangement	1C
Initial Contact Resistance	100mΩ(at 1A 6VDC)
Contact Material	Silver Alloy(Au clad)
Contact Rating (Res. Load)	0.5A 125VAC/1A 30VDC
Max. switching voltage	125VAC/60VDC
Max. switching current	2A
Max. switching power	62.5VA/30W
UL/CUR rating	0.5A 125VAC 1A 30VAC 0.3A 60VDC
Mechanical life	$1x10^7$ OPS (300OPS/min)
Electrical life	$1x10^5$ OPS (30OPS/min)

CHARACTERISTICS

Initial Insulation Resistance		1000MΩ 500VDC
Dielectric Strength	Between coil and Contacts	1000VAC 1min
	Between open contacts	400VAC 1min
Operate time (at nomi. Volt.)		5ms
Release time (at nomi. Volt.)		5ms
Bounce time (at nomi.Volt.)		5ms
Temperature rise (at nomi.Volt.)		Max. 55˚C
Shock Resistance		100m/s²
Vibration Resistance		10 to 55Hz 3.3mm
Humidity		35% to 85%
Ambient temperature		-30˚C to +70˚C
Unit weight		2.2g
Termination		PCB
Construction		Sealed

COIL

Coil power	Sensitive:0.15W	Standard:0.2W

COIL DATA

Standard Type

Nominal Voltage VDC	Pick-up Voltage VDC	Drop-out Voltage VDC	Coil Current mA	Coil Resistance (at 20˚C) Ω
1.5	1.20	0.15	132.7	11.3 ± 10%
3	2.40	0.30	66.7	45 ± 10%
5	4.00	0.50	40.0	125 ± 10%
6	4.80	0.60	33.3	180 ± 10%
9	7.20	0.90	22.2	405 ± 10%
12	9.60	1.20	16.7	720 ± 10%
24	19.20	2.40	8.33	2880 ± 15%

Sensitive Type

Nominal Voltage VDC	Pick-up Voltage VDC	Drop-out Voltage VDC	Coil Current mA	Coil Resistance (at 20˚C) Ω
1.5	1.20	0.15	100	15 ± 10%
3	2.40	0.30	50.0	60 ± 10%
5	4.00	0.50	29.9	167 ± 10%
6	4.80	0.60	25.0	240 ± 10%
9	7.20	0.90	16.7	540 ± 10%
12	9.60	1.20	12.5	960 ± 10%
24	19.20	2.40	6.25	3840 ± 15%

Max Allowable Coil Voltage: 160% Nominal Voltage at 60˚C,
150% Nominal Voltage at 70˚C

HONGFA RELAY
ISO9001/QS9000/ISO14000 CERTIFIED

ORDERING INFORMATION

	JRC-23F /	012	1Z	3	S

Type

Coil voltage 1.5, 3, 5, 6, 9, 12, 24VDC

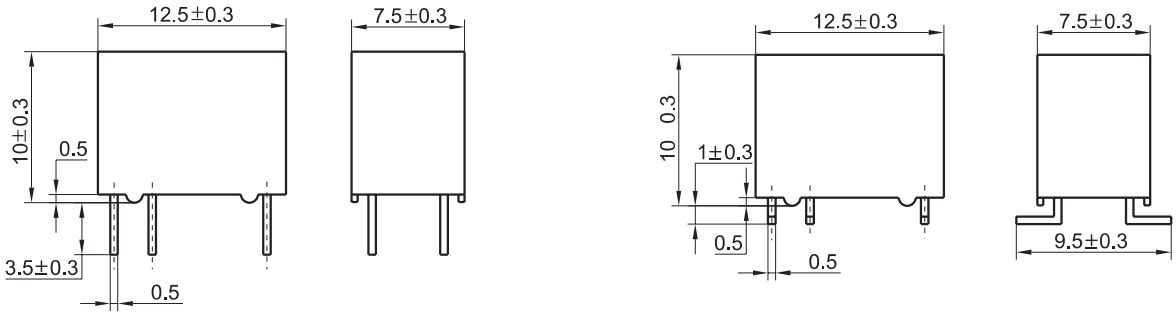
Contact arrangement **1Z:**1C (SPDT)

Termination **NIL:** PCB Terminal **3:** Bent Terminal

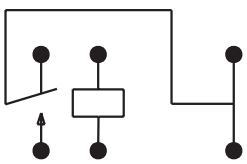
Coil power **S:** Sensitive type (0.15W) **P:** Standard type (0.20W)

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

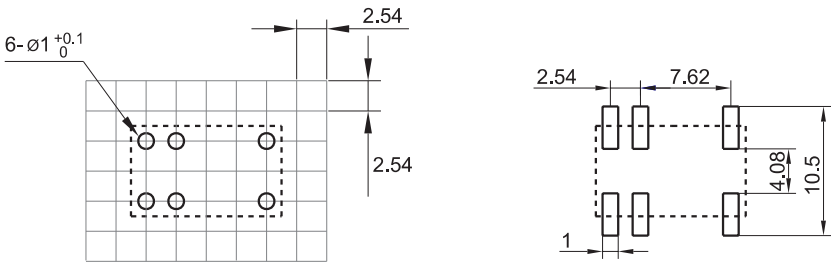
Outline Dimensions



Wiring Diagram

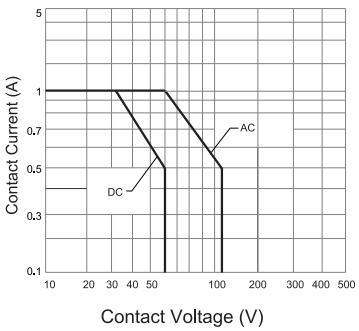


PCB layout

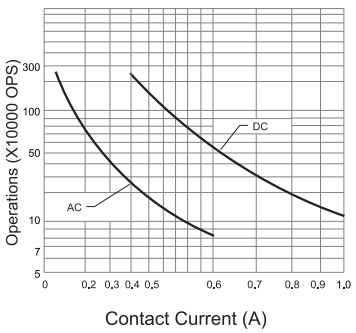


CHARACTERISTICS CURVE

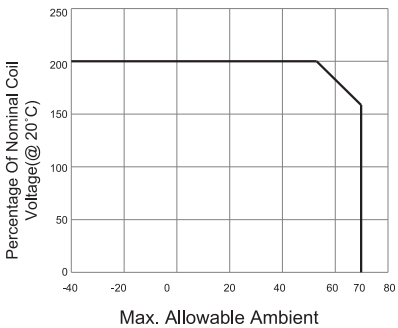
MAXIMUM SWITCHING POWER



LIFE CURVE



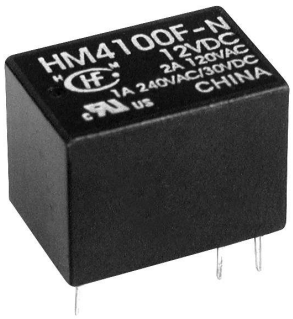
MAX.ALLOWABLE AMBIENT TEMPERATURE CURVE



HM4100F/4101F SUBMINIATURE INTERMEDIATE POWER RELAY

File No.:40000155

File No.:E170653



Features

- Extremely low cost
- SPDT configuration
- Standard PC layout
- Sealed version avaible

CONTACT DATA

Type	1Z
Initial Contact Resistance	1000MΩ (at 1A,24VDC)
Contact Material	Silver Alloy
Contact Rating (Res. Load)	H: 1A 120VAC/30VDC N&B: 1A 240VAC/30VDC 2A 120VAC
Max. switching voltage	300VAC/150VDC
Max. switching current	2A
Max. switching power	240VA/30W
UL/CUR rating	H: 1A 125VAC/30VDC N & B:1A 240VAC/30VDC 2A 125VAC
Mechanical life	1 x 10^7OPS
Electrical life	1 x 10^5 OPS

COIL

Coil power	H:200 mW; N: 360mW; B: 450 mW

COIL DATA

Nominal Voltage VDC	Pick-up Voltage VDC	Drop-out Voltage VDC	Max. allowable Voltage (at 20˚C) VDC	Coil Resistance Tolerance: ± 10%		
				H	N	B
3	2.3	0.3	3.6	45	25	20
5	3.8	0.5	6.0	120	70	56
6	4.5	0.6	7.2	180	100	80
9	6.8	0.9	10.8	400	220	180
12	9.0	1.2	14.4	700	400	320
24	18.0	2.4	28.8	2800	1600	1280

CHARACTERISTICS

Initial Insulation Resistance		100M Ω 500 VDC
Dielectric Strength	Between coil and Contacts	500Vrms 1min.
	Between open contacts	1000V 1min.
Operate time (at nomi. Volt.)		10ms
Release time (at nomi. Volt.)		5ms
Temperature rise (at nomi. Volt.)		50˚C
Shock Resistance	Functional	98m/s² (10g)
	Destructive	980m/s² (100g)
Vibration Resistance		1.5mm 10 to 55Hz
Humidity		35% to 85% RH
Ambient temperature		-25˚C to 55˚C
Termination		PCB
Unit weight		5g
Construction		Sealed & Unsealed

ORDERING INFORMATION

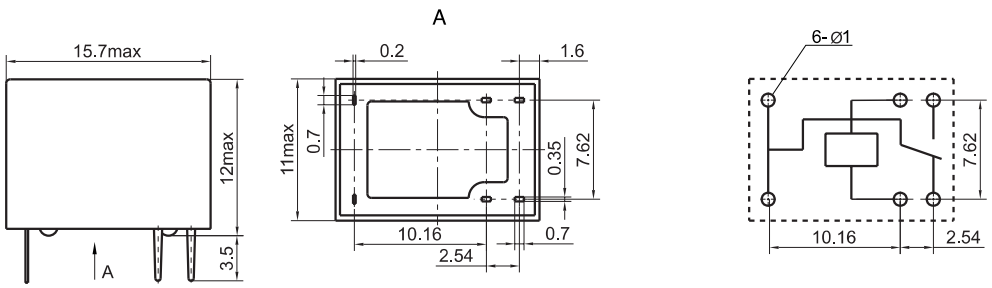
Type	HM4100F / HM4101F /	012	N	S
Coil voltage	3 to 24VDC			
Coil Power	**H:** 200mW **N:** 360mW **B:** 450mW			
Structure	**Nil:** Unsealed **S:** Sealed			

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

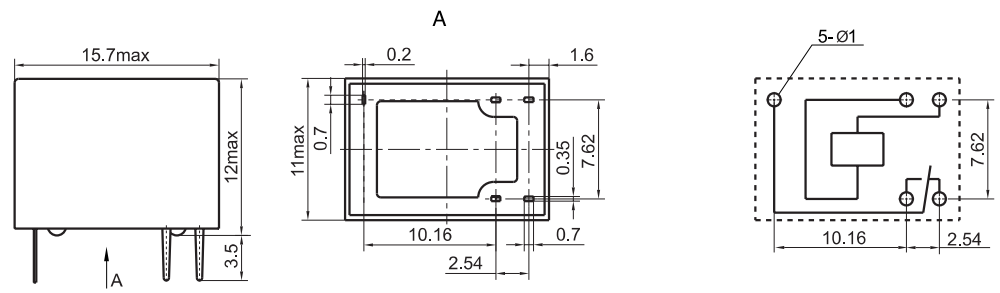
Outline Dimensions

Wiring Diagram & PCB layout

HM4100F

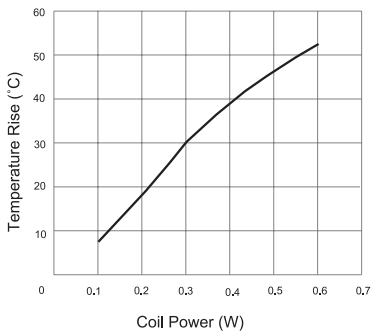


HM4101F

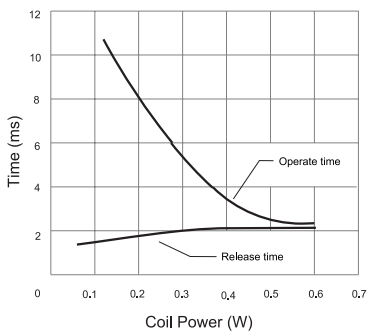


CHARACTERISTICS CURVE

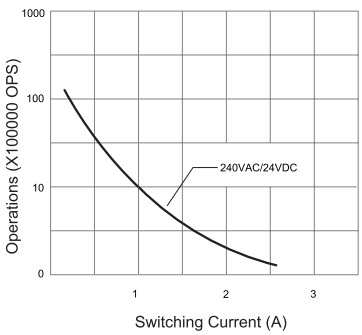
TEMPERATURE RISE



OPERATE TIME



LIFE EXPECTANCY



HFD2 SUBMINIATURE DIP RELAY

c UL us
File No.:E133481

Features

- 2 Form C contact,Polarized relay
- High sensitivity 150mW
- Fits standard 16 pin IC socket
- High switching capacity 60W,125VA
- Epoxy sealed for automatic wave soldering and cleaning

CONTACT DATA

Contact Arrangement	2C
Initial Contact Resistance	50mΩ
Contact Material	Ag-AuAg8, AgPd60
Contact Rating (Res. Load)	2A 30VDC
	1A 125VAC
Max. switching power	60W, 125VA
Max. switching voltage	220VDC, 250VAC
Max. switching current	2A
Min. Applicable load	10mV 10μA
Electrical life	1 x 10^5OPS (2A 30VDC) 5 x 10^5OPS (1A 30VDC)
Mechanical life	1 x 10^8 OPS

CHARACTERISTICS

Initial Insulation Resistance		1000M Ω 500VDC
Dielectric Strength	Contacts to coil	1500Vrms, 1min(1coil) 1000Vrms, 1min(2coil)
	Contacts to contact	1000Vrms, 1min
Operate time (at nomi. Volt.)		4ms
Release time (at nomi. Volt.)		3ms
Set Time (latching)		3ms
Reset Time (latching)		3ms
Bounce Time		1.5ms
Ambient temperature		-40˚C to +85˚C
Humidity		5% to 85%R.H.
Vibration Resistance		196 m/s²(20g) 10 to 55Hz
Shock Resistance	Functional	490 m/s²(50g)
	Destructive	980 m/s²(100g)
Capacitance	Contact to contact	2.0p
	Contact set to contact	1.5p
	Contact to coil	5.0p
Max.Solder Temp. Time		270˚C 5s
Max.Solvent Temp. Time		80˚C 30s
Termination		DIP & PCB
Unit weight		Approx, 4.5g
Construction		Sealed

COIL

		Sensitive	standard
Coil power	Single side stable	150mW	200mW
	Latching 2 coil	150mW	200mW
	Latching 1 coil	75mW	100mW
Temperature Rise		Max. 65˚C	
Coil Voltage		See coil data table	

COIL DATA

Single side stable standard(200mW) 20˚C

Order Number	Nominal Voltage VDC	Pick-up Voltage VDC (Max.)	Drop-out Voltage VDC (Min.)	Coil resistance Ω(±10%)	allowable Voltage VDC (Max.)
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

Single side stable sensitive(150mW) 20˚C

Order Number	Nominal Voltage VDC	Pick-up Voltage VDC (Max.)	Drop-out Voltage VDC (Min.)	Coil resistance Ω(±10%)	allowable Voltage VDC (Max.)
003-S	3	2.4	0.3	60	7.0
005-S	5	4.0	0.5	167	11.5
006-S	6	4.8	0.6	240	13.8
009-S	9	7.2	0.9	540	20.8
012-S	12	9.6	1.2	960	27.7
015-S	15	12.0	1.5	1500	34.6
024-S	24	19.2	2.4	3840	55.4

COIL DATA

Latching (1 coil) standard(100mW) 20˚C

Order Number	Nominal Voltage VDC	Set*Reset Voltage VDC(Max.)	Coil resistance Ω(± 10%)	allowable Voltage VDC (Max.)
003-M-L1	3	2.25	90	8.4
005-M-L1	5	3.75	250	14
006-M-L1	6	4.5	360	17
009-M-L1	9	6.75	810	25
012-M-L1	12	9.0	1440	34
015-M-L1	15	11.25	2220	42
024-M-L1	24	18.0	4000	56

Latching (1 coil) sensitive(75mW) 20˚C

Order Number	Nominal Voltage VDC	Set*Reset Voltage VDC(Max.)	Coil resistance Ω(± 10%)	allowable Voltage VDC (Max.)
005-S-L1	5	4.0	330	16
006-S-L1	6	4.8	480	19
009-S-L1	9	7.2	1080	29
012-S-L1	12	9.6	1920	39
015-S-L1	15	12.0	3000	43
024-S-L1	24	19.2	7680	78

Latching (2 coil) standard(200mW) 20˚C

Order Number	Nominal Voltage VDC	Set*Reset Voltage VDC(Max.)	Coil resistance Ω(± 10%)	allowable Voltage VDC (Max.)
003-M-L2	3	2.25	45	6
005-M-L2	5	3.75	125	10
006-M-L2	6	4.5	180	12
009-M-L2	9	6.75	405	18
012-M-L2	12	9.0	720	24
015-M-L2	15	11.25	1125	30
024-M-L2	24	18.0	2040	48

Latching (2 coil) sensitive(150mW) 20˚C

Order Number	Nominal Voltage VDC	Set*Reset Voltage VDC(Max.)	Coil resistance Ω(± 10%)	allowable Voltage VDC (Max.)
005-S-L2	5	4.0	167	11.5
006-S-L2	6	4.8	240	13.8
009-S-L2	9	7.2	540	20.8
012-S-L2	12	9.6	960	27.7
015-S-L2	15	12.0	1500	34.6
024-S-L2	24	19.2	3840	55.4

Notes:When user's requirements can't be found in the above table,special order allowed.

TYPICAL CONTACT LIFE EXPECTANCY

Voltage	Power	Number of operations	
		Resistive Load	Inductive Load(cosø=0.7)
50mV	50uW	5×10^7	5×10^7
30VDC	20W	3×10^6	1×10^6
30VDC	30W	1×10^6	3×10^5
30VDC	60W	1×10^5	1.5×10^4
60VDC	20W	3×10^6	--
60VDC	30W	5×10^5	--
60VDC	60W	1×10^5	--
30VAC	40VA	3×10^6	1×10^6
30VAC	80VA	1×10^6	3×10^5
30VAC	120VA	1×10^5	1.5×10^4
60VAC	40VA	3×10^6	1×10^6
60VAC	80VA	1×10^6	3×10^5
60VAC	120VA	1×10^5	1.5×10^4
125VAC	40VA	3×10^6	1×10^6
125VAC	80VA	1×10^6	3×10^5
125VAC	125VA	1×10^5	1.5×10^4

ORDERING INFORMATION

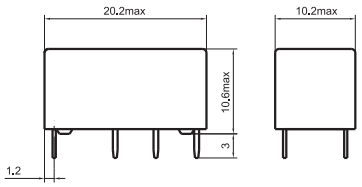
	HFD2 /	012	S	L2	D
Type					
Coil voltage	3, 5, 6, 9, 12, 15, 24, 48VDC(Standard Single only)				
Coil Power	**S**: sensitive **M**: standard				
Sort	**Nil**:Single side stable **L1**: Latching 1 coil **L2**: Latching 2 coils				
Contact Material	**Nil**:AgPd60 / Ag-AuAg8 **D**: Ag-AuAg8 / Ag-AuAg8				

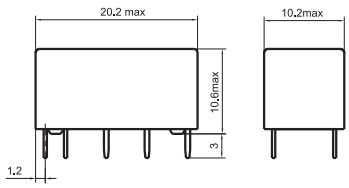
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Single side stable or latching(1 coil)

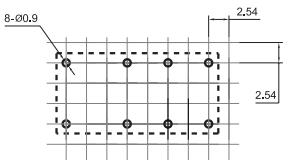
Latching(2 coils)

Outline Dimensions

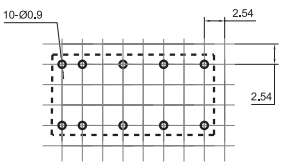




PCB layout

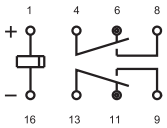


Matching 16 pin IC socket



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"

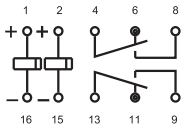
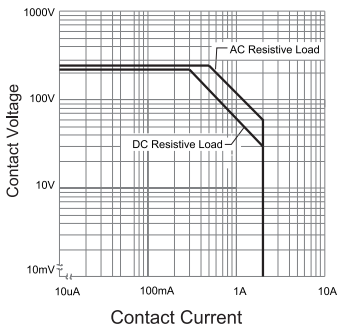


Diagram shows the "reset" position
Energize terminals 1 and 16 to "set"
Energize terminals 2 and 15 to "reset"

CHARACTERISTICS CURVE

MAXIMUM SWITCHING POWER



COIL TEMPERATURE RISE