HF152F SUBMINIATURE HIGH POWER RELAY

c UL us
File No.: E134517

VDE
File No.: 40017837

Features

- 20A switching capability
- TV-8 125VAC
- Surge voltage up to 6kV (between coil and contacts)
- Thermal class F: standard type (at 85˚C)
- Ambient temperature meets 105˚C
- Product in accordance to IEC 60335-1
- 1 Form C & 1 Form A configurations available
- Wash tight and flux proofed types available
- Environmental friendly product (RoHS compliant)
- Outline Dimensions: (21.0 x 16.0 x 20.6) mm

CONTACT DATA

Contact arrangement	1A	1C
Contact resistance	100mΩ (at 1A 24VDC)	
Contact material	AgNi, $AgSnO_2$	
Contact rating (Res. load)	20A 125VAC 17A 277VAC 7A 400VAC	16A 250VAC NO: 7A 400VAC
Max. switching voltage	400VAC	400VAC(NO)
Max. switching current	20A	16A
Max. switching power	4700VA	4000VA
Mechanical endurance	1 x 10^7OPS	
Electrical endurance	1 x 10^5OPS	5 x 10^4OPS

CHARACTERISTICS

Insulation resistance		100MΩ (at 500VDC)
Dielectric strength	Between coil & contacts	2500VAC 1min
	Between open contacts	1000VAC 1min
Surge voltage(between coil & contacts)		6kV (1.2 X 50μs)
Operate time (at nomi. volt.)		10ms max.
Release time (at nomi. volt.)		5ms max.
Shock resistance	Functional	100m/s²(10g)
	Destructive	1000m/s²(100g)
Vibration resistance		10Hz to 55Hz 1.5mm DA
Humidity		35% to 85% RH
Ambient temperature		HF152F: -40˚C to 85˚C HF152F-T: -40˚C to 105˚C
Termination		PCB
Unit weight		Approx.14g
Construction		Wash tight, Flux proofed

Notes: 1) The data shown above are initial values.
2) Please find coil temperature curve in the characteristic curves below.

COIL

Coil power	360mW

COIL DATA at 23˚C

Nominal Voltage VDC	Pick-up Voltage VDC	Drop-out Voltage VDC	Max. Allowable Voltage VDC	Coil Resistance Ω
3	2.25	0.3	3.6	25 x (1±10%)
5	3.80	0.5	6.0	70 x (1±10%)
6	4.50	0.6	7.2	100 x (1±10%)
9	6.80	0.9	10.8	225 x (1±10%)
12	9.00	1.2	14.4	400 x (1±10%)
18	13.5	1.8	21.6	900 x (1±10%)
24	18.0	2.4	28.8	1600 x (1±10%)
48	36.0	4.8	57.6	6400 x (1±10%)

SAFETY APPROVAL RATINGS

UL&CUR		20A 125VAC TV-8 125VAC NO/NC: 17A/15A 277VAC NO: 1HP 250VAC NC: 1/2HP 277VAC
VDE ($AgSnO_2$)	1 Form A	16A 250VAC 7A 400VAC
	1 Form C	NO: 16A 250VAC NC: 7A 250VAC

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

ORDERING INFORMATION

HF152F /	012	-1Z	S	T	G	Q	(XXX)	

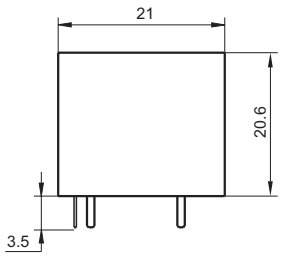
Type	HF152F: 85°C, HF152F-T: 105°C	
Coil voltage	5, 6, 9, 12, 18, 24, 48VDC	
Contact arrangement	**1H**: 1 Form A	**1Z**: 1 Form C
Construction [1]	**S**: Wash tight	**Nil**: Flux proofed
Contact material	**T**: $AgSnO_2$	**Nil**: AgNi
Contact plating	**G**: Gold plated	**Nil**: No gold plated
Contact capacity	**Q:** High capacity type 16A 250VAC, at 105°C (only for HF152F-T)	**Nil:** Standard type
Customer special code [2]	Only for special requirements, e.g. (555) stands for RoHS compliant	

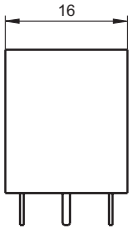
Notes: 1) Under the ambience with dangerous gas like H_2S, SO_2 or NO_2, wash tight type is recommended; please test the relay in real applications. If the ambience allows, flux proofed is preferentially recommended.
2) HF152F is an environmental friendly product. Please mark a special code (555) when ordering.
3) If wash tight type is selected for cleaning purpose, the vent-hole cover should be excised after cleaning.

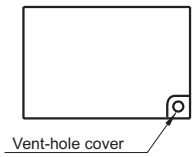
OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

Outline Dimensions





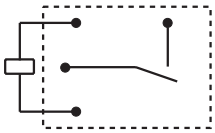


(Top view)

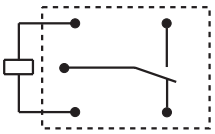
Wiring Diagram

(Bottom view)

1 Form A



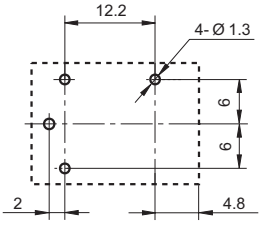
1 Form C



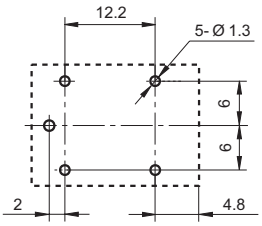
PCB Layout

(Bottom view)

1 Form A



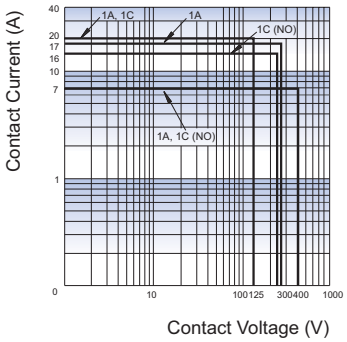
1 Form C



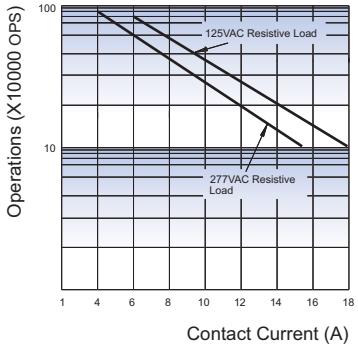
Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.
2) The tolerance without indicating for PCB layout is always ±0.1mm.

CHARACTERISTIC CURVES

MAX. SWITCHING POWER



ENDURANCE CURVE



COIL TEMPERATURE RISE