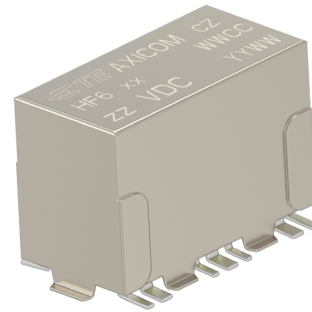


AXICOM HF6 RELAY

RF SIGNAL RELAYS

INTRODUCTION

TE Connectivity's (TE) Axicom HF signal relays, small size electromechanical relays designed for high frequency signal transmission applications, are manufactured in a wide range of variants. The HF relays are designed as 1 changeover contact, giving them an operating signal range up to 6 GHz with excellent high frequency characteristics.



FEATURES

- Y-Design
- Frequency range DC to 6GHz
- Impedance 50 Ω
- Small dimensions (16x7.6x10mm)
- 1 form C contact (1 changeover contact)
- Immersion cleanable
- Low power consumption (\leq 140mW)

APPLICATIONS

- Measurement and test equipment ATE
- Wireless base stations and antennas
- Wireless infrastructure
- RF power amplifier

CONTACT DATA

Contact arrangement	1 form C, 1 CO
Max. switching voltage	220 VDC, 250 VAC
Rated current	2 A
Limiting continuous current	2 A
Switching power	60 W, 62.5 VA,
	50 W (2.5 GHz)
Max. continuous RF-power, @ 20°C., VSWR <1.2	100W @ 3GHz ¹⁾
	150W @ 2GHz ¹⁾
Breaking capacity max.	300W ¹⁾
Contact material	Ag, Au covered
Minimum switching voltage	100 µV
Initial contact resistance	<100 mΩ at 10 mA/30 mV
Operate time	typ. 3 ms, max. 5 ms
Release time	without diode in parallel
	with diode in parallel
Bounce time	typ. 1 ms, max. 3 ms
Duration of set/reset pulse min.	20 ms
Mechanical endurance	10 ⁷ operations

¹⁾ with appropriate cooling only.

COIL DATA

Coil voltage	3 to 24 VDC
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Coil code	Rated voltage VDC	Operate voltage VDC	Limiting voltage VDC	Release voltage VDC	Coil resistance Ω±10%	Rated coil power mW
50 Ω version, monostable						
51	3	2.25	6.50	0.30	64	140
52	4.5	3.38	9.80	0.45	145	140
53	5	3.75	10.90	0.50	178	140
54	6	4.50	13.00	0.60	257	140
55	9	6.75	19.60	0.90	574	140
56	12	9.00	26.10	1.20	1028	140
57	24	18.00	52.30	2.40	4114	140

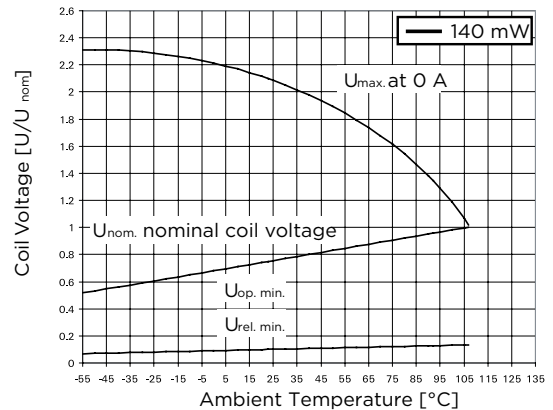
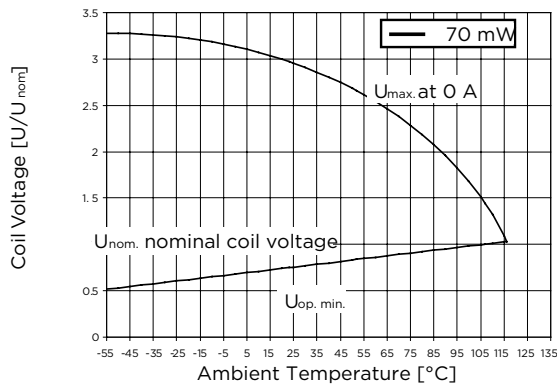
Coil code	Rated voltage VDC	Operate voltage VDC	Limiting voltage VDC	Release voltage VDC	Coil resistance Ω±10%	Rated coil power mW
50 Ω version, bistable, 1 coil						
71	3	2.25	9.20	-2.25	128	70
72	4.5	3.38	13.85	-3.38	289	70
73	5	3.75	15.30	-3.75	357	70
74	6	4.50	18.50	-4.50	514	70
75	9	6.75	27.70	-6.75	1157	70
76	12	9.00	37.00	-9.00	2057	70
77	24	18.00	74.00	-18.00	8228	70
50 Ω version, bistable, 2 coils						
91	3	2.25	6.50	2.25	64	140
92	4.5	3.38	9.80	3.38	145	140
93	5	3.75	10.90	3.75	178	140
94	6	4.50	13.00	4.50	257	140
95	9	6.75	19.60	6.75	574	140
96	12	9.00	26.10	9.00	1028	140
97	24	18.00	52.30	18.00	2880	200

All figures are given for coil without pre-energization, at ambient temperature +23°C.

HF6 RELAY

RF SIGNAL RELAYS

COIL OPERATING RANGE



INSULATION DATA

	50 Ω version	75 Ω version
Initial dielectric strength		
Between open contacts	600 V _{rms}	
Between contact and coil	1000 V _{rms}	
Initial surge withstand voltage		
Between open contacts	1000 V	
Between contact and coil	1500 V	

RF DATA

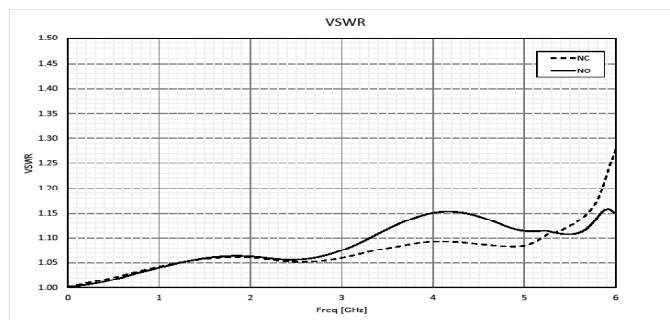
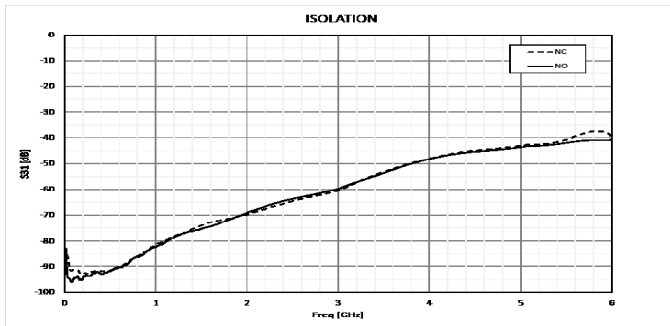
	50 Ω version	75 Ω version
Isolation		
@ 900 MHz/ 3 GHz/ 6 GHz	80 dB / 60 dB / 30 dB	
Insertion loss		
@ 900 MHz/ 3 GHz/ 6 GHz	0.05 dB / 0.15 dB / 0.80 dB	
Voltage standing wave ratio (VSWR)		
@ 900 MHz/ 3 GHz/ 6 GHz	1.05 / 1.10 / 1.40	

OTHER DATA

Material compliance	EU RoHS/ELV, China RoHS, REACH, Halogen content refer to the Product Compliance Support Center at www.te.com/customer-support/rohssupportcenter
Ambient temperature	-55 °C to +85 °C
Thermal resistance	< 165 K/W
Category of environmental protection	
IEC 61810	RT III - wash tight
Degree of protection, IEC 60529	IP 67, immersion cleanable
Vibration resistance (functional)	35g, 10 to 1000Hz
Shock resistance (functional), half sinus 11ms	50g
Shock resistance (destructive), half sinus 0.5ms	150g
Terminal type	SMT
Weight	max. 3.5g
Resistance to soldering heat	Peak value
IEC 60068-2-58	250 °C/10 s
Moisture sensitive level, JEDEC J-Std-020D	MSL3
Ultrasonic cleaning	not recommended
Packaging/unit	reel/400 pcs., box/400 or 2000 pcs.

GRAPHS

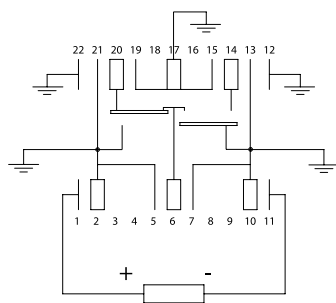
Typical RF performance, 50Ω version



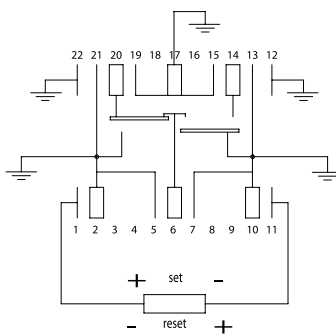
TERMINAL ASSIGNMENT

TOP view on component side of PCB

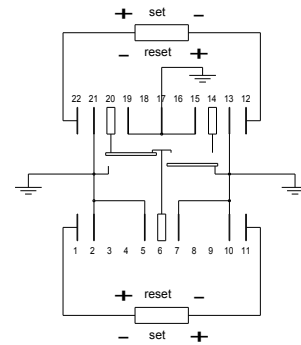
Monostable



Bistable, 1 coil



Bistable, 2 coils

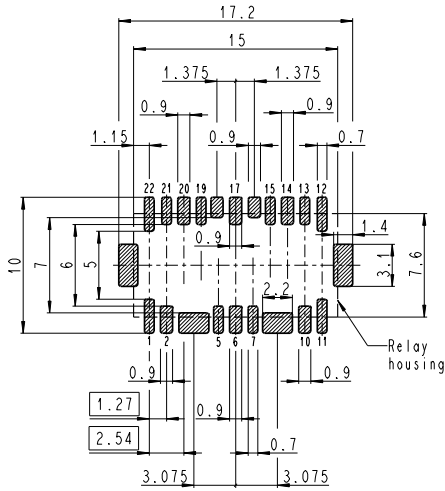


Note: Contacts are shown in reset condition. Contact position might change during transportation and must be reset before use.

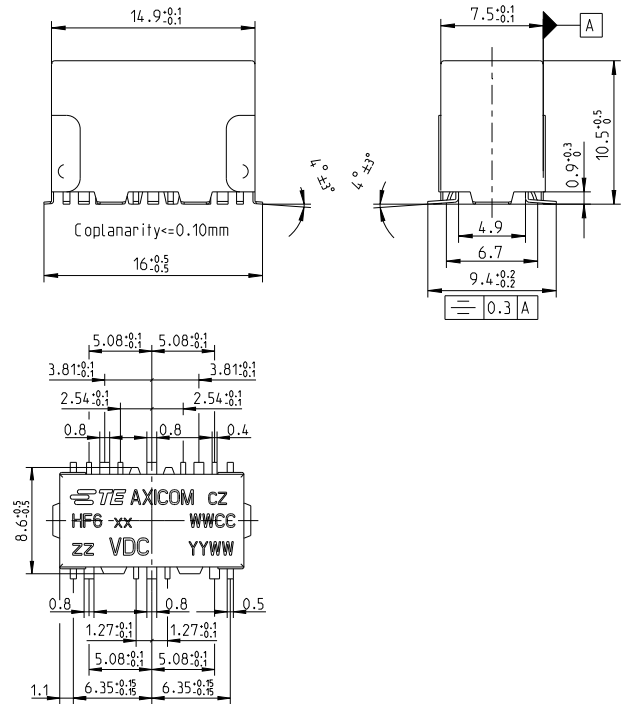
PCB LAYOUT

TOP view on component side of PCB

50 Ω version

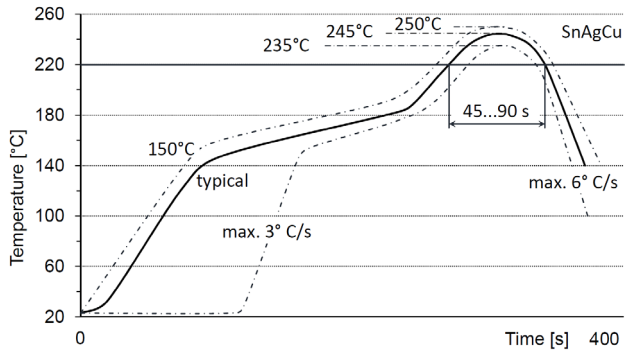


DIMENSIONS (Unit: mm)

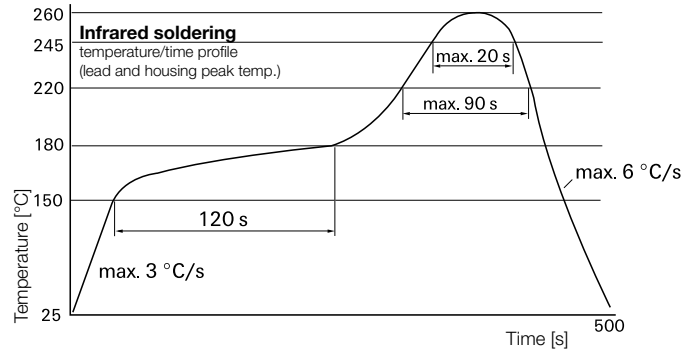


PROCESSING

Recommended reflow soldering profile IEC 61760-1

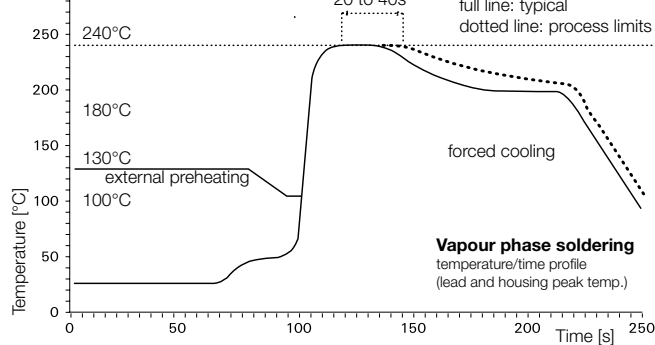


Resistance to soldering heat

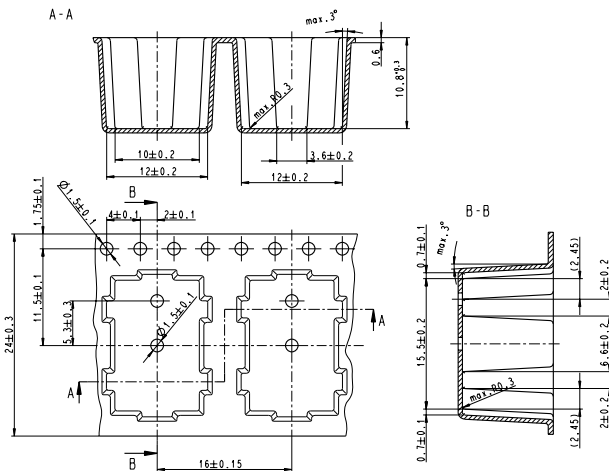


Recommended soldering conditions

Vapour phase soldering

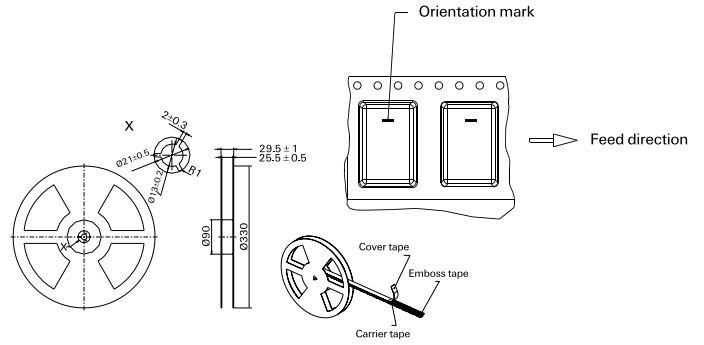


PACKING



Tape and reel for SMT

Reel dimensions



ORDERING INFORMATION

Part Number
HF6 53

Type

HF6

High Frequency Relays HF6 Series
1 form C, 1 CO

Coil

Coil code: please refer to coil versions table
Performance type

5x	50 Ω version, monostable 1coil
7x	50 Ω version, bistable 1coil
9x	50 Ω version, bistable 2coils

PRODUCT INFORMATION

TE Part Number	Arrangement	Version	Coil	Coil type	Part Number
HF6 51	1 form C (1 CO)	50 ohm	3VDC	Monostable	1462052-1
HF6 53			5VDC		1462052-3
HF6 56			12VDC		1462052-6
HF6 73	1 form C (1 CO)		5VDC	Bistable 1 coil	1-1462052-0
HF6 93			5VDC	Bistable 2 coils	1-1462052-7
HF6 96			12VDC		2-1462052-0

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