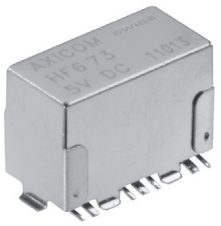
HF6 Relay

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



Typical 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	220VDC, 250VAC
Rated current	2A
Limiting continuous current	2A
Switching power	60W, 62.5VA, 50W (2.5GHz)
Max. continuos RF-power at 20°C.	50W (2.5GHz)
Contact material	Ag, Au covered
Minimum switching voltage	100µV
Initial contact resistance	<100mΩ at 10mA/30mV
Operate time	typ. 3ms, max. 5ms
Release time	
without diode in parallel	typ. 2ms, max. 5ms
with diode in parallel	typ. 4ms, max. 6ms
Bounce time max.	typ. 1ms, max. 3ms
Duration of set/reset pulse min.	20ms
Mechanical endurance	10^7 operations

Coil Data

Coil voltage range	3 to 24VDC

Coil versions, 50Ω version, monostable

Coil code	Rated voltage VDC	Operate voltage $VDC_{min.}$	Limiting voltage $VDC_{max.}$	Release voltage $VDC_{min.}$	Coil resistance Ω±10%	Rated coil power mW
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

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

Contact Data (continued)

Coil versions, bistable

Coil code	Rated voltage VDC	Set voltage VDC	Limiting voltage VDC	Reset voltage VDC	Coil resistance Ω±10%	Rated coil power mW
50Ω 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

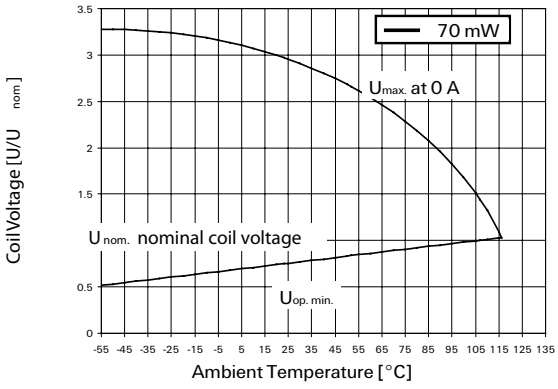
Contact Data (continued)

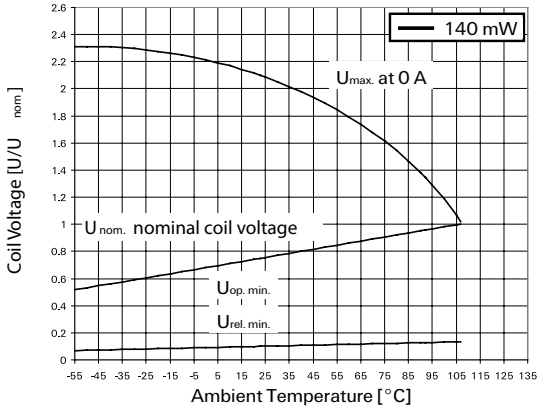
50Ω version, bistable, 2 coils

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	4114	140

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

Coil operating Range





HF6 Relay (Continued)

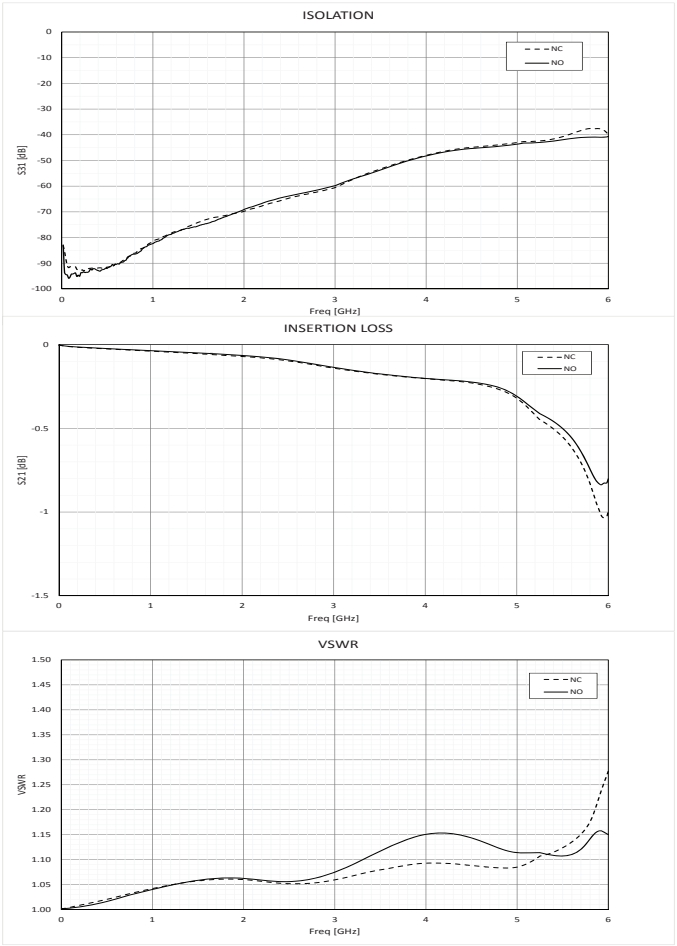
Insulation Data

Initial dielectric strength	
between open contacts	600Vrms
between contact and coil	1000Vrms
Initial surge withstand voltage	
between open contacts	1000V
between contact and coil	1500V

RF Data

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

Typical RF performance, 50Ω version



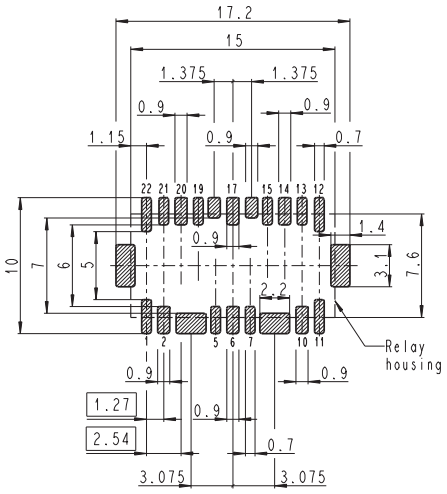
Other Data

Material compliance: EU RoHS/ELV, China RoHS, REACH, Halogen content refer to the Product Compliance Support Center at www.te.com/customersupport/rohssupportcenter

Ambient temperature	-55°C to +85°C
Thermal resistance	<165K/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. 3g
Resistance to soldering heat	Peak value
SMT IEC 60068-2-58	250°C/10s
Moisture sensitive level, JEDEC J-Std-020D	MSL3
Ultrasonic cleaning	not recommended
Packaging/unit, SMT	reel/250 pcs., box/250 pcs.

PCB layout

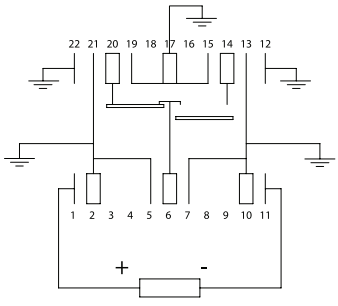
TOP view on component side of PCB



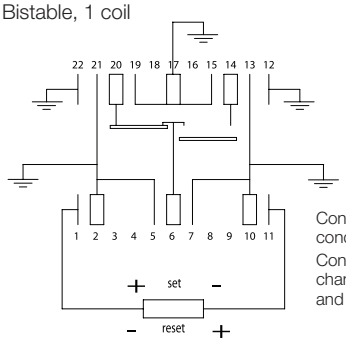
Terminal assignment

TOP view on component side of PCB

Monostable



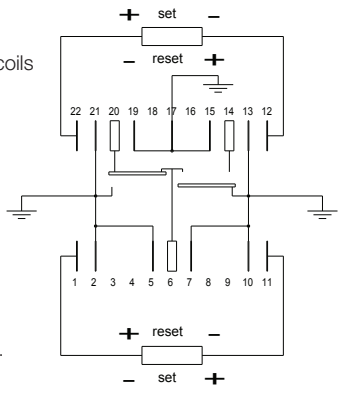
Bistable, 1 coil



Contacts are shown in reset condition.

Contact position might change during transportation and must be reset before use.

Bistable, 2 coils



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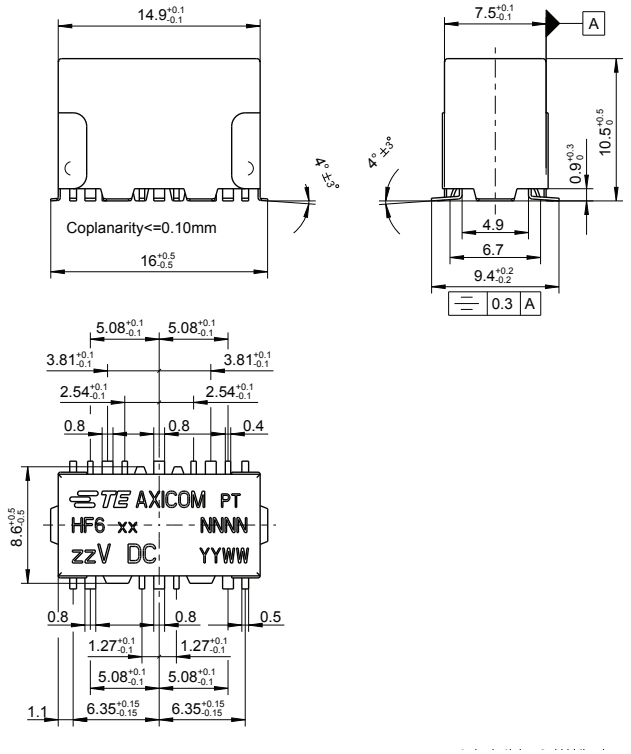
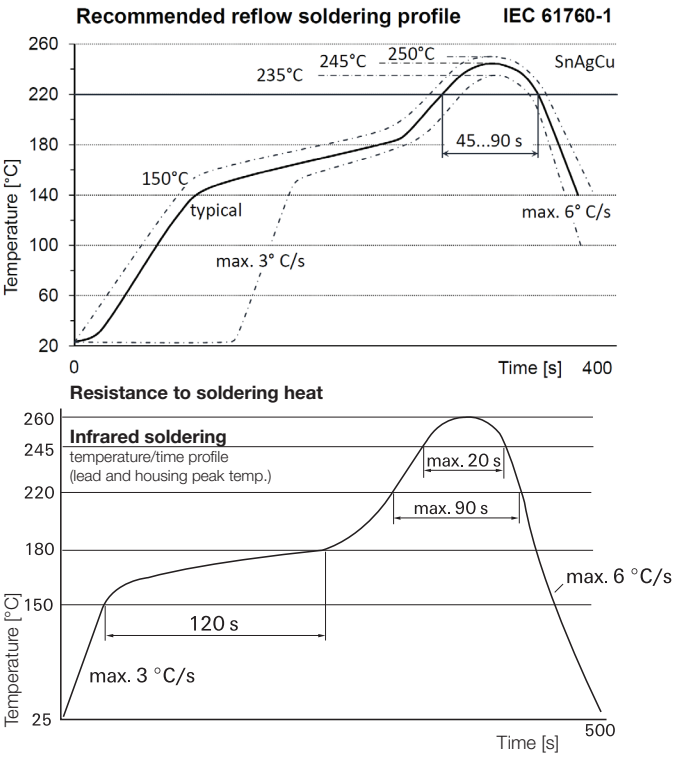
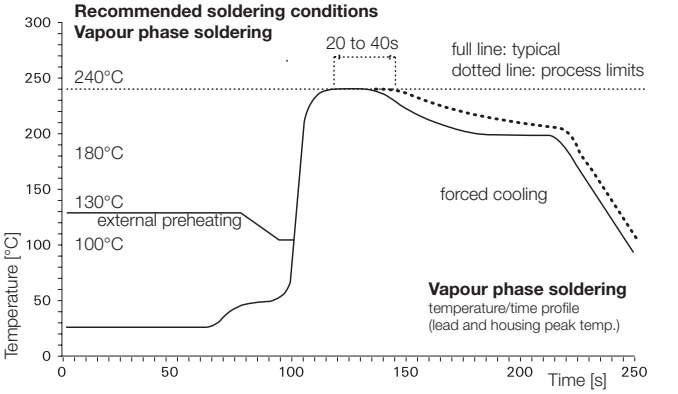
HF6 Relay (Continued)

Dimensions

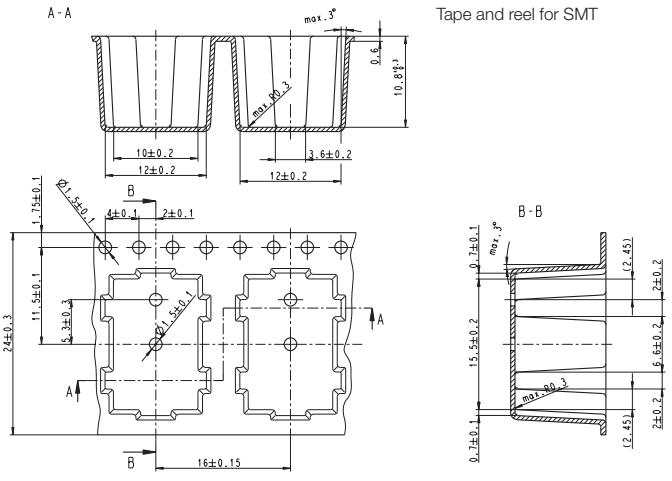


Processing



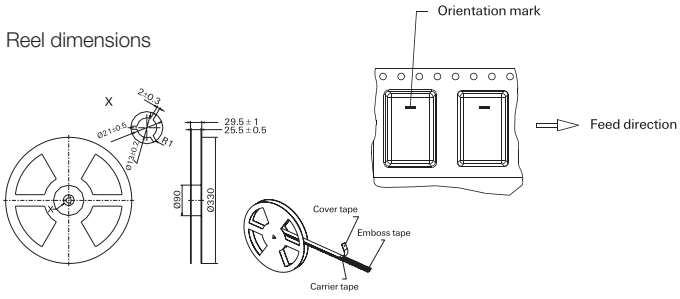


Packing



Tape and reel for SMT

Reel dimensions



HF6 Relay (Continued)

Product code structure Typical product code **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 Ohm version, monostable 1coil
7x 50 Ohm version, bistable 1coil
9x 50 Ohm version, bistable 2coils

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

This list represents the most common types and does not show all variants covered by this data sheet.
Other types on request